STRUCTURE AND COMPOSITION OF DOMESTIC DEBT AND THE IMPACT ON PRIVATE INVESTMENT IN NIGERIA.

M.SC PROJECT

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CERTIFICATION

This is to certify that the project work on **STRUCTURE AND COMPOSITION OF DOMESTIC DEBT AND THE IMPACT ON PRIVATE INVESTMENT IN NIGERIA (1970-2012) by UZOH EMEKA OBIOMA with Registration number PG/M.SC/10/57366** is adequate both in scope and quality and has met the requirement for the award of Master of Science. (M.Sc)

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DEDICATION

This project is dedicated to Almighty God.

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ABSTRACT

This study sets out to investigate and elaborate the empirical issues pertaining to the structure and composition of domestic debt and its impact on private investment in Nigeria. The study employed multiple regression models using secondary data from 1970 to 2012. The study found that domestic debt has inverse significant impact on domestic private investment in Nigeria. Results also show that domestic debt has inverse significant impact on foreign private investment in Nigeria with exchange rate and debt servicing having positive effect on foreign private investment in Nigeria. The study concludes that domestic debt if unchecked crowds-out private investment in Nigeria.

TABLE OF CONTENT

CHAPTER THREE

METHODOLOGY AND DATA

CHAPTER FOUR

PRESENTATION OF EMPIRICAL RESULT

CHAPTER FIVE

SUMMARY, POLICY RECOMMENDATIONS AND CONCLUSION

CHAPTER ONE
INTRODUCTION

1.1 Background of Study

It is generally expected that developing countries facing a scarcity of capital, will acquire domestic debt to supplement domestic saving (Pattillo, et al., 2002; Safdari and Mehrizi, 2011). Ajayi and Oke (2012) posits that the rate at which developing countries borrow, that is, the ñsustainableò level of domestic borrowings depend on the links among foreign and domestic saving and investment. Ajayi and Oke (2012), suggest that the main lesson of the standard ñgrowth with debtò literature is that a country should borrow home and abroad as long as the capital thus acquired produces a rate of return that is higher than the cost of the domestic and foreign borrowings. In that event, the borrowing country is expected to increase capacity and expand output with the aid of domestic debt.

In Nigeria, treasury certificates, which were first issued in 1968, constituted one of the largest securities between 1983 and 1988. It even surpassed treasury bills issued to further deepen the domestic money market by increasing short ï term investment options available. In 1989, the monetary authorities initiated the action bid system for flotation of treasury bonds as obligation on domestic debt arising from the liberalization policies thus in 1989, N20 million worth of treasury bills representing 58.6% of treasury bills outstanding were converted to treasury bond. Treasury certificate was therefore abolished in 1996 (Audu and Abula, 2001)

According to Mukolu and Ogodor (2012) deficit usually occurs as a result of government inability to match the tax revenue and expenditure. The deficit is financed either through borrowings (domestically or foreign) or use of foreign reserve to settle the deficit. By borrowing it means the government has to agree on the terms payments which usually are attached with strange regulations. Hence, this will perpetrate the deficit as more money will be spent by government on servicing the debt which creates more expenditure and deficit. Persistence of this may result to high and variable inflation, debt crisis, with crowding out of investment and macroeconomic imbalance in general.

High extension debt stock and debt burden have also been shown to have a dampening effect on investment mainly through the ñdebt overhangò effect, the crowding out effect and credit rationing. The ñdebt overhangò effect refers to a situation in which a high debt burden

discourages investment by the private sector since the new accumulated debt stock is a tax on future income and production. The crowding out effect on the other hand arises from the consideration that resources which could have been used for investment are often deviated to service foreign debt. Credit rationing refers to situation in which a highly indebted country is likely to face credit constraint in international capital market and this would lead to reduction in investment (Ogidan, 2010).

In Nigeria, since the early 1960s, the ratio of domestic debt to Gross Domestic Product (GDP) increased to 6.1%. A decade later by 1974 this ratio went up slightly to 6.9% of GDP. But by 1984, the domestic debt to GDP ratio was over 40%. Although it declined slightly in the 1990s, it has since 2000 moved upward, (Asogwa 2005). The study further opined that, Nigeria has not been alone in experiencing escalating levels of government domestic indebtedness, but in comparison to other countries in sub-Saharan Africa, Nigeriaôs domestic debt to GDP ratio is clearly on the high side.

One can analyze the evolution of the domestic debt from its size/structure or by considering its different components. The stock of government debt is measured relative to national output. This is shown by the size of the domestic debt structure both in nominal terms as a percentage of total debt. Domestic debt structure has grown tremendously from N0.23 billion at inception (1960) and it stood at N1.86 billion as at 1980. It was in 1986, at the inception of the Structural Adjustment Programme (SAP) that the level of external debt for the first time becomes larger than the level of domestic debt. Ever since then, the stock of external debt has consistently been larger than domestic debt (Ajisafe et al, 2006).

Alison et al (2003) revealed three theoretical reasons often advanced for government domestic debts. The first is for budget deficit and investment financing, secondly, is for implementing monetary policy (buying and selling of treasury bills in the open market operation) and the third is to develop the financial instruments so as to deepen the financial markets.

In Nigeria, several factors have been advanced to explain the changing domestic debt profile between the1960s to date. The major factors include ï high budget deficits, low output growth (as a result of low investment), large expenditure growth, high inflation rate and narrow revenue base witnessed between the 1980s and 1990s. Output growth declined as it recorded annual

average values of 5.9% in 1980-1984, 4% in 1990ï 1994 and 2.8% in 1998ï 1999 periods respectively (Semenitari, 2005).

It is usually expected that as countries expand their output, they also tends to rely more heavily on domestic public debt issuance to finance growth. Public expenditure as a percentage of GDP increased from 13% in the 1980 ï 1989 periods to 29.7% in the 1990ï 1994 periods. This increased public expenditures to GDP ratio resulted from fiscal policy expansion embarked upon during the oil boom era of the 1970s. However, as the oil boom declined in the 1980s, priorities of government expenditure did not change.

Consequently, the fiscal operations of the federal government resulted in large deficits from the average of 0.8% of GDP in the 1970 ï 1979 period, the level of deficit increased persistently averaging 5.1%in 1980 ï 1989 and 10.0 in 1990 ï 1994. A very remarkable feature of the government fiscal expansion was the financing of the excess expenditures from domestic sources averaging 79.2% between 1980 and 2002, since foreign loan was difficult to obtain (Mukolu and Ogodor 2012).

Nwankwo (2011) found that Nigerian domestic debt has attained 86.71% of the total debt as at 2011. He further emphasized that most of the internal debt was incurred through federal government bonds with maturity ranging from 3-20 years issued by Debt Management Office (DMO) on a monthly basis. In the light of this escalating and disturbing domestic debt growth rate and given the priority of current government at making Nigeria one of the largest 20 economies in the world by the year 2020 in line with the vision 2020 objectives, it is important to investigate the effect of domestic debt on private investment in Nigeria.

1.2 Statement of the Problem

Details of the domestic debt indicate that Federal Government of Nigeria (FGN) bonds accounted for N3.67tn or 61.44 per cent of the money borrowed by the federal government from internal sources. Nigerian Treasury Bills account for N1.95tn or 32.63 per cent, while Treasury Bonds account for N353.73m or 5.93 per cent. As of March 31, 2011, the nationôs external debt stood at $5.23bn, while the domestic debt stood t N4.87tn. This means that within one year, the external debt stock rose by 13 per cent, while the domestic debt stock rose by 22.59 per cent. Most of the domestic debts were not tied to any specific investment projects, but were raised to

finance budget deficits. The World Bank and other reputable institutions have continued to raise concern over this, saying that unless the country checks the rising debt profile, it may hinder private sector investment growth (Obinna 2012). The situation of Nigeria domestic debt shows that treasury bills constitute the main component of government debt accounting for 77.4% of total domestic debt in 1960, decline to 51% by 1970 but went up to 62% 2003. The decline in the percentage share of treasury bills in the mid-1970s happened as revenue from the oil sector improved substantially, Okunronmu (1992). The growth in the level of treasury bill also reflected the practice of roll over of matured securities and continuous recourse to conversion of ways and means advances outstanding at the end of the year to treasury bills as a way of funding the fiscal deficits. Total domestic debt was N28,440.2 million in 1986 but, rose to N36,790.6 million in 1987, showing an increase of N8,350.4 million between the two periods. Similarly, in 1990, domestic debt increased to N84,093.1 million from N47,031.1 million in 1989, showing an increase in N37,062.0 million between the two periods. It is pertinent for us to note that the increase in domestic debt between 1989 and 1990 is greater than that in the period 1986 and 1987 by N28,711.6 million. The reason for this increase is that more money was needed by the government to finance its deficit budget. In 1996, domestic debt outstanding arose astronomically to N343,674.1 million, increasing by almost five ï fold to N84,093.1 million in 1990. By 2000 domestic debt had grown to N898,253.9 million showing an increase of N554,579.8 million between 1996 and 2000. The high rate of domestic debt continue to increase to the tune of N1,016,994.0 billion, N1,166,000.7 billion, N1,329,692.7 billion and N1,370,325.2 billion in 2001, 2002, 2003 and 2004 respectively, (Ezirim, Anoruo, and Muoghalu, 2006). In absolute terms, since 2007, Nigeriaôs domestic debt has sky ï rocketed with the effect that her domestic debt consumes a larger chunk of her Gross Domestic Product (GDP) thereby tending to decline total output of goods and services.

Generally, declines in government revenue were met by borrowing from the Central Bank through the instrument of ways and means advances. These advances were never defrayed by the federal government but refinanced by the floatation of treasury bills and treasury certificates are rolled over by issuing new ones to pay holders of maturing debt instrument contributing to the continued growth of the debt stock, (Falegan, 2012).

The stock of federal government domestic debt as at December 2010 was N4,551.8 billion, representing an increase of 41 percent over the level in 2009. The development reflected the substantial borrowing through the issuance of federal government of Nigeria (FGN) bonds and treasury bills. The banking system remained the dominant holder of the outstanding debt instruments with, 67.9 percent, and the non-bank public accounted for the balance of 32.1 percent. Disaggregation of the banking systemôs holdings indicated that N2,605 billion or 84.2 percent, was held by the deposit money banks and discount houses, and N487.5 billion, or 15.8 percent by the CBN and the sinking fund. Analysis of the maturity structure of the domestic debt showed that instruments of two years and below accounted for N2,850.7 billion or 62.6 percent, followed by instruments of two to five years at N501.7 billion, or 11 percent; those with tenors of between five and ten years totaled N481.1 billion or 10.6 percent, and tenors of over ten years at N718.3 billion, or 15.8 percent (CBN annual report, 2010).

In the last few years (since, 2007) there had been alarming signals on the rising level of Nigerian domestic debt, which in the absence of appropriate measures might result to a looming catastrophe.

There is therefore the need to examine the effect of domestic debt on private investment in Nigeria, to enhance proper policy recommendation to the government. Against this background, this study is poised to answer the following research questions:

1. What is the impact of domestic debt on domestic private investment in Nigeria?
2. What is the impact of domestic debt on foreign private investment in Nigeria?
3. What is the trend between domestic debt and private investment in Nigeria?
4. What are the methods of financing/managing domestic debt in Nigeria?

1.3 Objectives of the Study

The broad objective of the study is to investigate the structure and composition of domestic debt and the impact on private investment in Nigeria. However, the specific objectives are:

1. To establish the impact of domestic debt on domestic private investment in Nigeria.
2. To investigate the impact of domestic debt on foreign private investment in Nigeria.
3. To ascertain the trend between domestic debt and private investment in Nigeria.
4. To determine the methods of financing/managing domestic debt in Nigeria.

1.4 Research Hypotheses

In this study and in line with the objectives stated above, the hypotheses that will be tested are stated as follows:

Ho_1: Domestic debt has no significant impact on domestic private investment in Nigeria.

Ho_2: Domestic debt has no significant impact on foreign private investment in Nigeria.

Ho_3: Domestic debt has no upward or downward trend with private investment in Nigeria.

Ho_4: There are no significant methods of financing/managing domestic debt in Nigeria.

1.5 Policy Relevance of The Study

The study is relevant from a policy perspective especially for a developing economy, like Nigeria. This study will give an insight into the structure and composition of the Nigerian domestic debt vis-à-vis private investment. Thus, Nigeria debt management office will find this research work very useful in analyzing accumulated debt figures, which will aid domestic investment decisions. Furthermore, not only would researchers benefit from this study, it would also stimulate further study and research in this area. It is also aimed that this study will be a veritable tool for economic analysis to students.

On the whole, this study will be beneficial to investment analysts, policy makers, the government and the public in general.

1.6 Scope of the Study

This study is structure and composition of domestic debt and the impact on private investment in Nigeria. The work is a time series study. Data for the study will span from 1970 to 2011. Data availability informs the choice of this time range.

Again, the study covers the following variables of interest: Domestic Debt, Domestic Private Investment, Foreign Private Investment, Nominal Exchange Rate, Interest Rate, Inflation Rate, External Debt, National Savings, Debt Servicing and Real Gross Domestic Product. The choice of these variables is informed by the literature reviewed and few additions to achieve our objectives.

CHAPTER TWO
LITERATURE REVIEW

2.1 Conceptual Framework

Eaton (1993) made simple distinction with the various stock and flows associated with debt. Regarding stocks, a major distinction is made between disbursed and undisturbed debt. Whereas undisturbed debt is composed for mere commitment made by lenders and are, therefore, not accumulating interest, disbursed debt consists of commitment made by the lender that have been drawn on and have accumulated unpaid interest, putting differently, unpaid interest obligation are part of the disbursed debt. Thus, debt essentially refers to disbursed debt. When a government borrows, the debt is a public debt. Public debt, either internal or external is a debt incurred by the government through borrowing in the domestic and international market so as to finance domestic investment. Debt is classified into two, reproductive debt and dead weight debt. When a loan is obtained to enable the state or nation to purchase some sort of assets, the debt is said to be reproductive, for example money borrowed for acquiring factories, electricity, and refineries. However, debt undertaken to finance war and expenses on current expenditure are dead weight debts.

When a country obtains loan from aboard, it means that the country can import from abroad goods and services to the value of the loan without sometime having to export anything for exchange, when capital and interest have to be repaid, the same country will have to get the burden of exporting goods and services. These two types of debts however, require that the borrowers future saving must cover the interest and principal payment Debt Servicing. Therefore, debt financed investment need to be productive and well managed enough to earn a rate of return higher than the cost of debt servicing, (Eaton, 1993). For the past four years since 2008, Nigeria has continued to borrow large amounts of money, often at highly confessional interest rates with the hope to put them on a faster route for development through higher investment and faster growth. However, economic growth is still constant and domestic investment situation is staggering albeit that was not the initial intention.

2.2 THOERETICAL LITERATURE

2.2.1 The Traditional Neoclassical Growth and Capital Mobility Theory

The traditional neoclassical growth model with capital mobility (that is, allowing borrowing and lending) postulates that a reasonable level of borrowing contributes positively to investment and economic growth. It suggests that there is incentive to borrow and invest by poor countries because the marginal productivity of capital exceeds the world interest rate (Patilo et al, 2002). Cohen (1991) reveals that at low levels, debt is positively related to investment and economic growth, although at higher levels the requirements of debt service obligation complicate debt accumulations for capital formation and investment. Thus, the assumption of perfect capital mobility is unrealistic. Countries may not be able to borrow freely because of the risk of repudiation or moral hazard.

Eaton (1993) sees debt accumulation as capital inflow with positive effect on domestic savings and investment. The argument implies that capital inflows complement domestic savings and investment. Such capital inflows help to finance a chronic shortfall of domestic savings over investment, the gap in the current account. Many growth and debt models have been used to demonstrate how developing countries can use capital imports as a source of much needed investment for economic growth. Among these are two-gap models of McKinnon and Chenery-Strout in which external capital augments domestic savings and investment and provide some foreign exchange for imports (Patilo et al, 2002).

2.2.2 The Debt Over-Hang Theory

The debt over-hang theory (Krugman, 1989) provides a new dimension to the debt crisis. The basis of the theory is that if debt exceeds the countryôs ability to pay with some probability in the future, expected debt servicing is most likely going to be an increasing function of the output of the debtor county. According to the theory, high debt acts as an anticipated foreign tax, reducing the incentive to save and invest and promoting capital flight (Serven and Sahmano, 1989). Pattillo et al (2002) show that the debt over-hang thesis imply that ñlarge debt accumulation would lower growth through reduced investmentò. It maintains that debt accumulation stimulates investment initially, while past debt accumulation impacts negatively on investment and growth. The debt over-hang thesis suggests a possible Laffer curve for the effect of debt on investment, where at the peak (maximum point) of the curve is the point where large

debt stocks begin to act as a steep marginal tax on investment and this is the point where debt begins to have negative marginal impact on growth.

The implication of the debt over-hang thesis is that government will have less incentive to implement difficult reforms such as trade liberalization and fiscal restraint. Thus, the channel for debt over-hang thesis is not only through the volume of investment but also through a poorer macroeconomic environment which is likely to affect the efficiency or quality of investment. Krugman (1989) sees debt over-hang as a situation in which the expected repayment on foreign debt falls short of the contractual value of the debt and showed that there is a limit at which accumulated debt stimulates investment and growth. Borensztein (1990) argues that the debt over-hang is a situation in which the debtor country benefits very little from the return on any additional investment because of the debt service obligation. International Monetary Fund (IMF) (1989) view debt over-hang hypothesis (DOH) as a situation where investment is discouraged if the debt burden is so large that the debtor country is unable to meet her payment obligations in normal way and involuntary lending takes place. Thus, the DOH describes a situation in which debt accumulation is not merely large, but one in which ñthe existence of debt accumulation distorts the relevant margins considered for production and investment decisions. Therefore, debt over-hang is a situation in which the debt stock of a country exceeds the countryôs capacity to repay such debts in the immediate future.

2.2.3 The Crowding-Out Thesis (Liquidity Constraint Thesis)

The liquidity constraint thesis (that is, crowding-out thesis) maintains that debt accumulation is negatively correlated with growth in that resources to service the debt reduce the amount available for investment purposes. Thus both the debt over-hang thesis and the crowding-out thesis suggest a strong negative effect of debt on investment and growth. An indebted country is most likely to face credit constraint which is the same as facing higher real interest rates which discourage investment. Rising interest rate and inflation worsen the macroeconomic environment and hurts investment. Cohen (1993) and Clements et al (2003) corroborate the aforementioned impact of debt, as they observe that the negative effects of debt on growth works not only through its impact but the stock of debt is likely to ñcrowd-outò public investment. This is so because service payments and repayments on accumulated debt soak up resources and reduce public investment. The damaging impact of debt servicing on investment is attributable to the

reduction of government expenditure resulting from debt-induced liquidity constraints (Taylor, 1993). Fosu (2007) maintains that liquidity constraint is implied by the debt-servicing requirements which may shift the budget away from public investment. This is important for consideration because public expenditures are likely to be a major determinant of the economic activity in many functional sectors. Moha (1999) asserts that mounting debt accumulation depresses investment through both a ñdisincentive effectò and ñcrowding-out effectò.

All things being equal, higher debt service can raise the governmentôs interest bill, reducing public savings. This in turn may either raise interest rate or crowd-out credit available for domestic investment and dampening economic growth. Higher debt service payments can also have adverse effects on the composition of public spending by squeezing the amount of resources available for infrastructure and human capital with negative effects on growth (Arias, 2002).

2.3 EMPIRICAL LITERATURE

2.3.1 Debt , Investment and Economic Growth

Amaeteng and Amoako-Adu (2002) in their study found that there is a unidirectional and positive casual relationship between foreign debt service and GDP growth after excluding exports revenue growth for Africa and South of Saharan countries during 1983-1990. Afxention and Serletis (2004), argued that indebtedness impacts on the economic activity of developing countries. It is also argued that if foreign loan are converted into capital and other necessary inputs, development will occur. On the other hand, if borrowing countries misallocate resources or divert them to consumption, the economic development is negatively affected. Ocampo (2004) proclaimed that the external debt situation for number of low income countries, mostly in Africa has become extremely different. For these countries, even full use of traditional mechanism of rescheduling and debt resection together with continued provision of confessional financing and purist of sound economic policies may not be sufficient to attain sustainable domestic investment levels within a reasonable period of time and without additional external support.

Asley (2002) found that high level of accumulated debt in developing countries negatively impact on their investment capacities and growth performance. The study also found that debt over-hang affects economic reforms and stable monetary policies, export promotion and a reduction in certain trade barrier that would make the economy more market friendly.

Cross-country regression analysis by Hasen (2001) on the impact of aid and external debt on domestic investment, the regression results were suggestive of a series of interesting relationships. This then is to say that there is quite strong evidence of positive impact of aid both on the growth rate in GDP per capital and the investment rate. Pattillo et al (2002), in their paper assessed the non-linear impact of debt accumulation on investment growth using a panel data of ninety three (93) countries over 1969-98 employing econometric methodologies. Their findings suggested the average impact of debt becomes negative at about 160-170 percent of investment or 35-40 percent of gross domestic product (GDP). Smyth and Hsing (1995) have tried to test the federal government debts impact on investment and economic growth. And they examine if an optimal debt ratio exists that will maximize investment and economic growth. The author calculated the optimal debt ratio (DEBT/GDP). The DEBT/GDP ratio corresponding to the maximum GDP growth rate is 38.4 percent. Chowdhury (1994) argued that, debt accumulation burden leads to bad management in highly indebted countries such as exchange rate mismanagement. The expectation of currency devaluation leads to speculative capital flight. Devaluation also causes the currency cost of debt service obligations, deteriorates budget deficit and affect money supply and inflation.

Guidotti and Kamar (1991) studied the case of 15 emerging market countries and revealed that the ratio of domestic debt to GDP ratio went from 10% in 1981 to 16% in 1988 and remained more or less constant over the period and these important differences in the process has led to accumulation of domestic and external debt in these countries. However, the increase in domestic debt was mainly due to new borrowing and that of external debt was due to accumulation of arrears. This suggests that if emerging market countries had not been shut down from the international capital market, they would have probably accumulated more external and less domestic debt. This view is however said to be consistent with the one put forward by Borensztein et al. (1990) who find that crisis play a key role for the development of the domestic bond market.

Other studies across the Nigerian border like that of Pattillo et al. (2002) and Wijeweera et al. (2005) investigated the connection between public debt and economic growth by employing coï integration, error correction methodology and to determine both long and short run effect of the variables used, they discovered there exist a negative but insignificant impact of debt

servicing on growth. In addition, the results also showed that high debt appears to reduce growth mainly by lowering the efficiency of investment rather than its volume. Similarly, Oshadami (2006) in her study concluded that increase in the growth of domestic debt negatively affects economic growth.

Seetanah et al. (2007) and Hameed et al. (2008) also investigate the link between public debt and economic growth using Vector Error Correction model and production function for the time series respectively. In the results, it was discovered from both studies that debt servicing burden has a negative effect on productivity of labour and capital which ultimately negatively affects economic growth in both Mauritius and Pakistan respectively.

Further, Claessens et al. (1997) stipulated that the debtor can only share partially in any increase in investment (output and export) because a fraction of that increase will be used to service the external debt. Their findings therefore, imply that debt reduction (internal and external) would lead to increased investment and repayment capacity and as a result, the portion of the debt outstanding becomes more likely to be repaid.

2.3.2 Debt Over-Hang and Investment

There have been several studies on the relationship between debt over-hang and investment growth.

Borensztein (1990) found that debt over-hang had an adverse effect on private investment in Philippines. The effect was strongest when private debt rather than total debt was used as a measure of debt overhang. Cohen (1993), argues that the results on the correlation between less developed countries (LDCs) debt and the investment in 1980s showed that the level of stock of debt does not appear to have much power to explain the slowdown of investment in developing countries during the 1980s. It is the actual flows of net transfers that matter. He found that the actual service of debt ócrowded outô investment.

Furthermore, Nair and Frazier (1988) attributed the problem of LDCs debt to their dwindling foreign exchange earnings and increasing rate of interest that are attached to the loans obtained. To them the debt burden could be alleviated and they recommend that indebted countries must ensure that their exchange earnings grow faster than the foreign interest payment on loans and that new capital inflows must be directed mainly on productive investment rather than using them for debt servicing.

Elbadawi, et al (1996) made use of cross section regression for 99 developing countries spanning SSA, Latin America, Asia and Middle East to study the impact of debt overhang on economic growth. Three direct channels in which indebtedness in SSA works against growth were identified. These include, current debt inflows as a ratio of GDP (which should stimulate growth), past debt accumulation (capturing debt overhang) and debt service ratio. The fourth channel was an indirect channel, which works through the impacts of the above channels on public sector expenditure. They found out that the debt burden has led to fiscal distress as manifested by severely compressed budgets. Using data for Cameroon, Mbanga and Skiod (2001) found that there exist a debt over-hang and crowding out effect of external debt on growth.

From the literature, the channels through which indebtedness works against growth are identified as current stock of external debt as a ratio of GDP, which may stimulate growth; past debt accumulation, which captures the debt overhang and therefore deters growth; and debt service ratio to capture the crowding out effects. Debt service payments reduce export earnings and other resources and therefore retard growth. According to Elbadawi, et al (1996), these debt burden indicators also affect growth indirectly through their impact on public sector expenditures. As economic conditions worsen, government find themselves with fewer resources and public expenditure is cut. Part of this expenditure destined for social programs has severe effects on the very poor. Most studies confirm debt overhang/crowding out effects. Studies that have shown favorable effects of external debt are rare.

The mechanism through which external debt affects economic growth is through investment. Investment behavior is adversely affected by debt servicing, especially in heavily indebted economies. A study by IMF (1989) on investment behaviour found investment to be lower in heavily indebted countries, and after analyzing the different explanations for the decline in investment conclude that ñé poor performance of investment in countries with debt servicing problems is generally consistent with the presence of debt overhang (dis) incentiveò.

2.3.3 Nigerian Studies

This section reviews related past studies on the relationship between domestic debt and private investment in Nigeria. Paiko (2012) examines deficit financing and its implication on private sector investment in Nigeria. The study used Secondary data from 1990 to 2007. Multiple regression models were used in calculating the relative impact of deficit financing on private investment in Nigeria. The findings revealed a negative relationship between deficit financing and investment in the period under review, that is, deficit financing in Nigeria crowds out private investment.

Onyeiwu (2012) investigates the relationship between domestic debt and economic growth in Nigeria. The study employed Ordinary Least Squares Method (OLS), Error Correction and parsimonious models to analyze quarterly data between 1994 and 2008. Result shows that the domestic debt holding of government is far above a healthy threshold of 35 percent of bank deposit as the average over the period of study is 114.98 percent of bank deposit presenting evidence of crowding out of private investments. The study of course affirms that the level of debt has negative effect on economic growth.

Adofu and Abula (2010) investigate the empirical relationship between domestic debt and economic growth in Nigeria. Using OLS regression techniques and the time series data from 1986 ï 2005, the study explored the relationship between domestic debt and economic growth in Nigeria. The study result shows that domestic debt has affected the growth of the economy negatively. In the light of the findings, the study recommend that Government domestic borrowing should be discouraged and that increasing the revenue base through its tax reform programames should be encouraged.

Ajisafe, et al. (2006) investigate the causal relationship between external debt and foreign private investment in Nigeria using secondary data from 1970 and 2003. The result shows that the variables are stationary at first differencing. Cointegration test was also performed and the result shows that the variables are not related in the long run using the likelihood ratio as a measure of significance. The result of the cointegration determined the use of vector autoregressive model to test for causality, which resulted in a bi-directional relationship between external debt and foreign private investment in Nigeria.

Asogwa (2005) in his study employed a comprehensive technique in investigating the impact of domestic debt on economic growth. He concluded that, domestic debt in Nigeria has continued to suffer confidence crises as market participants have consistently shown greater unwillingness to hold longer maturities. Rather the government has only been able to issue more of short term debt instrument. The study pinpoints that Nigeria is not the only country faced with this escalating level of government indebtedness, but when compared with other Sub-Saharan countries, that of Nigeria was seen to be larger than the others for the years covered. Gbosi (1998) stressed that borrowing from the domestic economy in order to finance its domestic investment expenditure due to oil price collapse has increased rapidly.

Furthermore, Ajayi (1995) posited ñDebt is without any vestiges of doubt, an obstacle to the restoration of growth in many third world countries todayò. In his view the external debt of the third world countries rises to USD 1.32 billion at the end of 1998, this is equal to about half of their combined Gross National Production (GDP). The situation in Africa is particularly pathetic. Sub-Sahara Africanôs external debt was USD 161 billion at the end of 1986 out of which the low income, debt distressed countries owned USD 45 billion or 45% of indebtedness.

Iyoha (1996), suggests that heavy debt burden acts to reduce investment through both debt over-hang and the ócrowding ï outô effect. His results were similar for Sub-Saharan African (SSA) countries. For a country aspiring to achieve a particular target rate of growth, such growth may be limited by lack of domestic savings or foreign exchange (Obadan, 2001). Growth as he argued is limited by the domestic resource gap of the foreign exchange or external sector gap and foreign borrowing is required to meet the larger gap. If foreign exchange is the dominant constraint, dual gap analyses stressed that additional role of foreign borrowing in supplementing foreign exchange without which a fraction of domestic savings might be unutilized because actual growth would be constrained by the inability to import necessary input.

Ajayi and Iyoha (1998) posited that the issue of debt and lack of investment growth are clearly interrelated. In his view, exclusive stock of debt retards investment growth and hamper the socioï economic development of sub-Saharan African countries. The large debt stock and crushing debt service burden have now introduced a vicious circle to the analysis of the development problem of these developing countries because debt servicing in the face of inadequate foreign earning leads to severe import strangulation.

Iyoha (1999) supported the argument made by Ajayi (1995) when the study posited that the two issues; debt and lack of growth are clearly inter-related. Indeed, excessive stock of external debt retard growth and hamper the socio-economic development of Sub-Saharan African countries. The large debt stock and crushing debt service burden have now introduced a new vicious circle to the analysis of the development problem of Sub-Saharan African countries, debt servicing in the face of inadequate foreign earning leads to severe import strangulation. Import strangulation hold back export growth thus perpetuating import shortages. The debt overhangs created by the debt situation further depress investment.

Iyoha (2002), use macroeconometric simulation model to investigate the relationship between per capita gross domestic investment (PCGDI) and total debt stock. Empirical estimation postulates positive relationship between PCGDI and marginal product of capital and growth rate of real output while both external debt stock to GNP and debt service showed negative relationship with PCGDI.

Fajana (1993) in his study sees nothing wrong with debt accumulation but that the debt crisis emanates from mismanagement of such funds. To him, borrowing is desirable and also unavoidable because borrowing is a first order condition for bridging the domestic gap; while the second order is that such funds should be invested in a viable project whose rate of return is higher than that of the interest rate on the loan. Put together, the study concluded by saying that for accumulated debt to serve as an engine of growth it has to be properly managed and the resources it provides need to be prudently and efficiently utilized.

Ogwuma (1996) is of the view that debts arise from loans and credit procured by the residents of a country from the rest of the world and within the country that is meant for bridging the gap between saving and investment. He stipulated that when these resources are productively deployed and utilized, they do not constitute any drain on the future resources. He further buttressed that, to ensure sustainability of debt servicing, borrowing countries like Nigeria need to adopt efficient debt management strategies, which entail carefully planned schedules of debt acquisition, deployment and retirement.

Ojo (1989), is of the belief that it is no exaggeration to claim that Nigeria huge external debt is one of the hard knots of the Structural Adjustment Programme (SAP) introduced in 1986 to put the economy on a sustainable path of recovery. The corollary of this statement is that only

the high level of debt service payment could not reduce significantly. Nigeria would be in a position to finance larger volume of domestic investments, which would enhance growth and development, but more often than not, a debtor has only limited room to manage a debt crisis to advantage.

Jacob (2005) shows in his study that low income countries like Nigeria have a tradition in borrowing to finance huge capital projects like the debt procured by the government for its own use. He employed a cross - sectional survey of the role of domestic debt market in sub-Saharan Africa based on data set of 27 Countries from 1980 to 2000. The study finds out that domestic markets in these countries are more generally small, involves short and medium term debt instrument and a very narrow investorsô base. It also pinpointed that there exist significant differences among the size, cost, and structure of domestic debt markets in heavily indebted poor countries. He further discovered from his study that domestic interest rate payment present a significant burden to their budget despite much smaller domestic debt than foreign debt which in turn affects domestic investment and growth at large.

Furthermore, debt decreases a government ability to invest in producing and marketing exports, building infrastructure, and establishing a skilled labour force. Muhtar (2004) also stated that, the service of these debts have direct negative effect on economic development. He says ñdebt services encroach on resources needed for socio-economic development. It also contributed to negative net resources flowò.

Anyanwu (1986) found that whole scale of some white elephant development projects in the country is the root cause of our external debt problem. He says instead of emphasis being placed on small scale rural development projects so as to reverse the chaotic trend of urbanization and lessen the opportunity for corruption, Nigeria government started embarking on many illusory projects of which many are not productive.

According to Nweke (1990), a correct analysis of debt accumulation in a third world country such as Nigeria must be replaced in the content of the countryôs forceful integration into the western structural and dominated world capitalist economy as a peripheral appendage that provide natural resources and cheap labour for the industrialization process in the west.

Onah (1994) also views that the debt burden can depress investment, and hence economic growth, through illiquidity and disincentive effects. The illiquidity effect results from the fact

that there are only limited resources to be divided among consumption, investment and external transfers to service existing debt. He then concluded that the disincentive arises because expectations of future burdens tend to discourage current investment.

2.3.4 SUMMARY OF REVIEW AND LIMITATIONS OF PREVIOUS STUDIES

The review of the empirical studies on the relationship between debt accumulation and domestic investment in Nigeria reflects that:

Most of the studies reviewed so far in this area have focused on the impact of debt on economic growth in the developed countries, see for example: Amaeteng and Amoako-Adu (2002); Afxention and Serletis, (2004); Asley (2002); Smyth and Hsing (1995); Pattillo et al. (2002) and Wijeweera et al. (2005); Oshadami (2006); Seetanah et al. (2007) and Hameed et al. (2008). Some other studies focused on debt over-hang and investment, see: Borensztein (1990); Cohen (1993); Nair and Frazier (1988); Elbadawi, et al (1996), Mbanga and Skiod (2001). Similarly, most Nigerian studies focused on the relationship between debt and economic growth, for instance: Onyeiwu, (2012), Ajayi (1995); Asogwa (2005); Iyoha (1999); (Obadan, 2001); Fajana (1993); and Ojo (1989). Very few studies focused on the relationship between debt and investment growth, Gbosi (1998); Ajayi and Iyoha (1998); Jacob (2005); Ogwuma (1996) and Onah (1994). More so, Paiko, (2012) focused on deficit financing while, Ajisafe, et al. (2006) focused on external debt and foreign private investment. However, none of the Nigerian studies reviewed has investigated beyond 2008 to determine the effect of domestic debt on private investment in Nigeria. Investigating beyond 2008 is important to streamline the respective effects of external and domestic debts on private investment after Nigeriaôs debt cancellation in 2005. Equally important is that the Nigerian studies reviewed have failed to employ linear trend model to determine the trend between domestic debt and private investment in Nigeria. Also no single study showed the separate effects that domestic debt has on domestic private investment and foreign private investment. These are very serious loopholes in domestic debt and investment literature. This study therefore aims at filling these gaps in literature by covering from 1970 to 2011 and employing linear trend model.

CHAPTER THREE
METHODOLOGY AND DATA

3.1 Methodological Framework

Various theories have been propounded by scholars in an attempt to explain the subject of domestic debt and private investment. The theory includes: The dual gap analysis explained that development is a function of investment and that such investment which require domestic savings, is not sufficient to ensure that development take place. There must be the possibility of obtaining from abroad the amount that can be invested in any country which is identical with the amount that is saved. Furthermore, if the domestic resources are to be supplemented from abroad, such as excess of import over export (that is, M > E), then I ï S = M ï E. In national income accounting, an excess of investment over domestic saving is equivalent to excess surplus of import over export. Income = consumption + import + savings. Output = consumption + export + investment. Income = output. Then Investment ï Saving = Import ï Export. This is the basis of dual gap analysis, which assures that there is a country that requires saving and investment good import to achieve a particular rate of growth. If the available domestic saving fall short of the level necessary to achieve the target rate of growth, a savings investment gap is said to exist on a similar note, if the maximum import requirement needed to achieve the growth target is greater than the maximum possible level of export, then this is an export-import of origin exchange gap (Ajisafe et al., 2006)..

Similarly, Iyoha (2002) presents three macroeconometric simulation models, which consists of three equations of which two are stochastic and the remaining equation is an identity. The 2 stochastic equations relate to the production function (output equation) and an investment demand equation incorporating a debt over-hang variable in addition to a variable to capture the ñcrowding outò effect of debt service payments. The third equation is a debt accumulation identity.

The Output Equation: The inspiration for the output equation used is neoclassical, tracing its roots to Solow (1957) in Iyoha (2002), who hypothesized that output depended on capital and labour inputs and on disembodied technical change. It also owes much to the modifications introduced by development economists, particularly Chenery and Strout (1966) in Iyoha (2002), which emphasized the role of investment and the investment-income ratio. This combination is

now becoming standard in the development literature and variations of the model have been used by Oseghale and Amenikienan (1987), RamRati (1985), Mjema (1996), Iyoha (1996), Khan and Kumar (1993) and Pindyck and Solimano (1993). Iyoha (2002) developed this by incorporating a first overhang variable in addition to a variable to capture the ñinsiding outò effect of debt service payments

The model is closed with an identity, a debt accumulation identity. Given knowledge of the developing countries debt situation, it was decided to use the following identity:

DTOTAL = (1 + AVINT) DTOTAL (-1) - DSPAY ---------- (3.1.2)

Where DTOTAL= total debt, AVINT = average interest paid on debt and DSPAY= total debt service payments.

3.2 Model Specification

The model used in this study followed the work of Paiko (2012). Paiko (2012), equation estimated the relationship between deficit financing and private investment taking the following form: Yt = F (S1, S2 S3 S4). Where, Yt is private investment and S_i is government expenditure, budget deficit, external debt stock and interest rate respectively.

The general nature of the model of this study would be derived within the context of the theoretical link between domestic debt and private investment noted in literature. The study formulates a multiple regression model to assess the effect of domestic debt on private investment. However, based on the objectives of this study, it shall drop government expenditure and budget deficit and introduce exchange rate, inflation rate, debt servicing, national savings and real gross domestic product variables. Since private investment comprises domestic private investment and foreign private investment the model of this study would reflect same.

3.3 DEFINITION OF VARIABLES

DPI = Domestic Private Investment,

FPI = Foreign Private Investment,

EXD = External Debt,

EXR = Nominal Exchange Rate,

RGDP = Real Gross Domestic Product

INF = Inflation Rate,

DSC = Debt Servicing

DOD = Domestic Debt

INT = Interest Rate

NSV = National Savings

MODEL 1

Model 1 expresses domestic private investment as a function of domestic debt, external debt, exchange rate, interest rate, inflation rate and national savings to capture objective 1.

The functional form of the model is specified as:

DPI = F(DOD, EXD, EXR, INT, INF, NSV) é é é é é é ..é é é é é .é é é é é é é (3.1)

Model 1 is specified econometrically as:

$DPI_t = ß_0 + ß_1DOD_t + ß_2EXD_t + ß_3EXR_t + ß_4INT_t + ß_5INF_t + ß_6NSV_t + ε_{1t}$ é é é é .é ...é (3.2)

where, EXD and NSV are control variables for model 1.

MODEL 2

Model 2 expresses foreign private investment as a function of external debt, domestic debt, exchange rate, interest rate, debt servicing and real gross domestic product to capture objective 2.

The functional form of the model is specified as:

FPI = F(EXD, DOD, EXR, DSC, INT, RGDP) é é é é é é é é é é é é é é é ...é é (3.3)

The model is specified econometrically as:

$FPI_t = ɣ_0 + ɣ_1EXD_t + ɣ_2DOD_t + ɣ_3EXR_t + ɣ_4DSC_t + ɣ_5INT_t + ɣ_6RGDP_t + ă_{1t}$ é é é é é (3.4)

where DOD, DSC and RGDP are control variables for model 2.

The assumption in the equations above is that all the variables exhibit a mean reversing property of stationarity. In practice, most economic series are attuned to time with a non-reversing mean. If the variables are not stationary at level, they shall be differenced by employing Augmented Dickey-Fuller (ADF) test to ensure that the variables attain stationarity. The study shall therefore estimate the following equation:

$ϕY_t = (Y_t - Y_{t-1}) = ε_t$ é .é .é é (3.5)

This is simple enough, to ensure that the variables attain stationarity, all the study needs to do is to take the first difference of the variables if they are not stationary at level form and regress them on their lags. Where Y is a vector of all the variables and $ε_t$ is a white noise error term. Against this backdrop, models 1 and 2 are restated as follows:

MODEL 1

$ϕDPI_t = ß_0 + ß_1ϕDOD_t + ß_2ϕEXD_t + ß_3ϕEXR_t + ß_4ϕINT_t + ß_5ϕINF_t + ß_6ϕNSV_t + ε_{2t}$ é é (3.6)

MODEL 2

$\Delta FPI_t = \gamma_0 + \gamma_1 \Delta EXD_t + \gamma_2 \Delta DOD_t + \gamma_3 \Delta EXR_t + \gamma_4 \Delta DSC_t + \gamma_5 \Delta INT_t + \gamma_6 \Delta RGDP_t + \varepsilon_{2t}$ (3.7)

MODEL 3

Linear Trend Model

Model 3 expresses private investment (DPI and FPI) as a function of domestic debt, external debt, exchange rate, inflation rate, interest rate, real gross domestic product and the time variable ôTô(the trend variable) to capture objective 3.

$\Delta PI_t = \mu_0 + \mu_1 \Delta DOD_t + \mu_2 \Delta EXD_t + \mu_3 \Delta EXR_t + \mu_4 \Delta INT_t + \mu_5 \Delta INF_t + \mu_6 \Delta NSV_t + \mu_7 T + \eta_t$ ...(3.8)

If the slope coefficient of μ_7 in equation (3.8) is positive, there is an upward trend in PI, whereas if it is negative, there is a downward trend in PI.

where, β, γ, and μ are parametric coefficients.

ε_{it}, ε_{it}, and η_t are stochastic error terms

Δ is the difference operator

t is the time component

The óaprioriô expectations explain the expected theoretical relationship among the variables. Precisely, it is between the dependent variable and each independent variable.

From model 1, $\beta_0, \beta_1, \beta_2, \beta_3, \beta_5$, and $\beta_6 > 0$ while, $\beta_4, < 0$

From model 2, $\gamma_0, \gamma_1, \gamma_2, \gamma_4$, and $\gamma_5 > 0$ while, $\gamma_3 < 0$

Based on economic theories and other theoretical grounds a direct or positive relationship is expected between (domestic debt, external debt, exchange rate, debt servicing, savings) and domestic investment while an inverse or negative relationship is expected between (inflation rate, interest rate) and domestic investment.

Economic theories suggest a positive relationship between (domestic debt, external debt, exchange rate, national saving) and economic growth. However, theories show that increase in interest rate reduces the volume of currency in circulation; therefore an inverse relationship is expected between interest rate and economic growth. Same inverse relationship is expected between (debt servicing, inflation) and economic growth.

3.4 Justification of the Model

The choice of multiple regression models to this analysis is because of its linearity in parameter. It is chosen over other models like simultaneous equation models because of the associated simultaneous equation bias (inconsistency of ordinary least squares (OLS) estimation)). The ordinary least squares method of multiple regression is applied in the modeling process. This is because the OLS appears appropriate as it yields estimator which are best, linear, unbiased and efficient. Having specified the models, the standard classical linear regression model assumptions was appllied in this study.

3.5 Estimation Procedure

The study appllied econometric tool of analysis . This study employ the ordinary least square technique. The STATA econometric software package was adopted for this analysis. The results of this study was evaluated based on economic, statistical and econometric criteria.

3.6 The Data Set

The objective of this study is to elucidate the relationship between domestic debt and private investment. To do so, the study employed annual (secondary) data and will cover a period of forty two years from 1970 to 2011. Annual data was collected on the following variables domestic private investment, foreign private investment, external debt, domestic debt, nominal exchange rate, interest rate, debt servicing, inflation rate, national savings and real gross domestic product (proxy for economic growth) from Central Bank of Nigeria statistical Bulletin (2011 publication).

CHAPTER FOUR

PRESENTATION OF EMPIRICAL RESULT

The results of the ordinary least squares regression are presented below.

MODEL 1

4.1.1 The Impact of Domestic Debt on Domestic Private Investment in Nigeria

Estimation Equation:

==========

LOG(DPI) = C(1) + C(2)*LOG(DOD) + C(3)*LOG(D(EXD)) + C(4)*EXR + C(5)*D(INT) + C(6)*D(INF) + C(7)*LOG(NSV)

Substituted Coefficients:

==========

LOG(DPI) = 11.42483438 - 0.7340744838*LOG(DOD) - 0.1673854474*LOG(D(EXD)) - 0.006377426499*EXR - 0.002335264118*D(INT) - 0.004779718622*D(INF) + 0.8979554361*LOG(NSV)

Table 4.1.1

Variable	Coefficient	Std. error	t-statistics	Prob. Value
C	11.42483	0.860880	13.27111	0.0000
LOG(DOD)	-0.734074	0.313746	-2.339706	0.0267
LOG(D(EXD))	-0.167385	0.077873	-2.149455	0.0404
EXR	-0.006377	0.004344	-1.468245	0.1532
D(INT)	-0.002335	0.032216	-0.072489	0.9427
D(INF)	-0.004780	0.007333	-0.651788	0.5199
LOG(NSV)	0.897955	0.292553	3.069380	0.0047

R-squared = 0.606327

Adjusted R-squared = 0.521968

Constant

The constant of the equation is positive and statistically significant. The constant term represents autonomous domestic private investment. This implies that domestic private investment would increase by 11% when other variables are not operational (that is, when all other variables are kept constant).

Domestic Debt (DOD)

The coefficient of domestic debt is negative and statistically significant. It conforms to a priori expectation. The value of the coefficient is -0.734074. This means that increase in domestic debt by 1% will reduce domestic private investment by about 73%. This outcome is not surprising because private investors would face credit crunch with an increasing domestic debt. This is in tandem with the result found by (Moha, 1999), (Arias, 2002) and (Pattillo et al, 2002),

External Debt (EXD)

The result of this study supports the hypothesis of negative relationship between external debt and domestic private investment. From the t-test, external debt is highly significant which implies that external debt has strong negative effect on domestic private investment. The coefficient value of external debt is -0.167385. This means that if external debt increases by 1%, domestic private investment will reduce by 17%. This result is in line with the findings of Ocampo (2004) for south of Saharan African countries but contrasts the finding of Amaeteng and Amoako-Adu (2002).

Exchange Rate

The result of this study also supports the hypothesis of negative relationship between exchange rate and domestic private investment. The t-test, result shows that exchange rate is not statistically significant which implies that exchange rate has no strong negative effect on domestic private investment. The coefficient value of exchange rate is -0.006377. This means that if exchange rate depreciates by 1%, domestic private investment will decrease by about 6%.

Interest Rate (INT)

The coefficient of interest rate is negative and statistically insignificant but conforms to óa priorió expectation. The value of the coefficient is -0.002335. This implies that increase in interest rate

by 1% will lead to a decrease of about 2%. This is true because increase in interest rate is a cog on the wheel of loanable fund which is used for domestic private investment.

Inflation Rate (INF)

The coefficient of inflation is negative to the tune of -0.004780 and statistically insignificant. This means that increase in inflation rate by 1% will reduce domestic private investment by about 0.48%. Increase in general price level on the average will reduce purchasing power dissuading consumers from purchases, supply contracts, production falls and investment falls . This could reduce the quantity of money available and could in-turn increase the cost of borrowing.

National Savings (NSV)

The coefficient of national savings is positive and statistically significant and it conforms to ó*a prioriô* expectation. The value of the coefficient is 0.897955. This implies that increase in national savings by 1% will lead to an increase in domestic private investment by about 90%. The reason could not be far-fetched, from economic theory of investment that savings is equal to investment. This result corresponds to the findings by Ogwuma (1996) and Jacob (2005) for Sub-Saharan African countries.

4.1.2 Coefficient of Determination (R^2)

The R^2 value is 0.606327 and $R\bar{2}^2$ (adjusted for loss in degree of freedom) is 0.521968. The value of R^2 shows that the model explains variations in domestic private investment to the tune of 61%.

4.1.3 The F-Test

Decision Rule

Reject H_0 if $F_{cal} > F_{0.05}\ (v_1/v_2)$d.f

Accept if otherwise.

From the regression result, F_{cal} = 7.187490 From the F-distribution table $F_{0.05}$ (5, 36) = 2.34. Since $F_{cal} > F_{tab}$ the study rejects H_0 and conclude that the overall regression is statistically significant at 5% level. This means that the linear combination of the individual independent variables significantly impact on domestic private investment.

4.1.4 Test for Autocorrelation

This is carried out in this study using the Durbin-Watson t-statistic to test for autocorrelation. Thus, the hypothesis tested is as written below:

H_0: No autocorrelation

H_1: Autocorrelation exists

Level of significance = 0.05

Decision Rule

If computed d-value is less than d_L, there is evidence of positive firstï order serial correlation; if it is greater than du, there is no evidence of positive first-order serial correlation; but if d_{cal} lies between the lower and the upper limit, there is inconclusive evidence regarding the presence of positive first-order serial correlation.

The summary of the decision rule is presented in table (4.6) below.

Table 4.1.2 Durbin–Watson Test: Decision Rule

Null hypothesis	**Decision**	**If**
No positive autocorrelation	Reject	$0<d<d_L$
No positive autocorrelation	No decision	d_L Òd Òd_u
No negative autocorrelation	Reject	$4- d_L<d<4$
No negative autocorrelation	No decision	$4-d_u$ÒdÒ$4-d_L$
No autocorrelation, positive or negative	Do not reject	$d_u<d<4-d_u$

From the regression result (see appendix), we could observe that the Durbin-Watson statistics d = 1.974. Also, the significant points of d_L and d_u from Durbin Watson table at 0.05 level of significance are; $d_L = 1.175$; $D_u = 1.854$

Using the fifth decision rule, we have; $d_u<d<4-d_u$

Ÿ 1.854 <1.974< 4 - 1.854

Ÿ 1.854<1.974<2.146

(with k = 6 and n = 42)

From the result above, the study observes that d = 1.974 > d_u = 1.854 and that 1.854<1.974<2.141, hence, the study do not reject the null hypothesis of no autocorrelation

positive or negative and conclude that there is no evidence of positive or negative first-order serial correlation.

4.1.5 Cointegration Test Result for Model 1

Since the study do not want to lose any useful information due to differencing, it carries out a cointegration test on the estimated model. This test is carried out using the Augmented Dickey Fuller test on the residuals obtained from the regression under the following hypothesis,

H_0 :Ŭ = 0 (not cointegrated)

Against

H_1 :Ŭ Í 0 (cointegrated)

Decision Rule:

Reject H_0 if $t_{cal} > t_{tab}$

The following result was obtained.

Table 4.1.3

Variable	t-ADF at 5%	Critical value at
Residual (U_{t-1})	-2.696586	1% = -2.6227
		5% = -1.9495
		10% = -1.6202

From table 4.3 above, since the absolute value of computed t-adf > critical t-adf, especially when compared at the 5% critical value i.e. /-2.696586/>/-1.9495/, we conclude that the estimated error term is stationary which means that the variables are cointegrated. Put in another way, there is a sustainable long run relationship between domestic debt and domestic private investment in Nigeria.

4.1.6 Error Correction Model (ECM) for Model 1

The error correction model is a short run model, which explains the extent to which the long run errors of the model are corrected in the short run. In other words, it is employed to check the speed of adjustment between the long run and short run dynamics in model (3.6). To arrive at this error correction model, all the variables in model (3.6) are estimated in their level form and the cointegrated residuals obtained. The ECM thus, implies estimation of the first

difference of their level forms against the first lag of their cointegrating residuals (RESIDOI (-1)). The following result is obtained.

Table 4.1.4 The ECM Result

Variable	Coefficient
LOG(DOD)	-1.209334
LOG(D(EXD)	-0.571166
EXR	-0.56294
D(INT)	0.041032
D(INF)	-0.005679
LOG(NSV)	3.001226
ECM(-1)	-0.236912

From the table 4.4 above, the speed of adjustment is found to be negative but statistically insignificant in the domestic private investment. The larger the value of the errorï correction term, the faster the disequilibrium is adjusted in the short run so that long run equilibrium relationship holds. The speed of adjustment is -0.24, implying that about 24 percent of the previous short-run deviation between the actual and the desired domestic private investment is corrected within the first three years out of four years. The low speed of adjustment explains the slow resurgence of domestic private investment in Nigeria after credit crunch shock.

MODEL 2

4.2.1 The impact of domestic debt on foreign private investment in Nigeria

Estimation Equation:

==========

FPI = C(1) + C(2)*EXD + C(3)*DOD + C(4)*EXR + C(5)*DSC + C(6)*INT + C(7)*RGDP

Substituted Coefficients:

==========

FPI = 49044.99943 - 1.32537925*EXD - 0.6296184586*DOD + 50617.73513*EXR + 3.618359807*DSC - 37514.28452*INT + 1.84718142*RGDP

Table 4.2.1

Variable	Coefficient	Std. error	t-statistics	Prob. Value
C	49045.00	185069.2	0.265009	0.7926
EXD	-1.325379	0.169584	-7.815473	0.0000
DOD	-0.629618	0.213773	-2.945265	0.0057
EXR	50617.74	6773.872	7.472496	0.0000
DSC	3.618360	1.600976	2.260096	0.0301
INT	-37514.28	25500.88	-1.471098	0.1502
RGDP	1.847181	1.433122	1.288921	0.2059

R-squared = 0.958348

Adjusted R-squared = 0.951207

Constant

The coefficient of the constant term is positive and statistically insignificant. The constant term represents autonomous foreign private investment. This implies that foreign private investment would not have significant increase when other variables are not operational (that is, when all other variables are kept constant).

External Debt (EXD)

The coefficient of external debt is negative, thus the study supports the hypothesis of negative relationship between external debt and foreign private investment. From the t-test, external debt is highly significant which implies that external debt has strong negative effect on foreign private investment. The coefficient value of external debt is -1.325379. This means that if external debt increases by 1%, foreign private investment will reduce by 1.32%. This result is in line with the findings of Ocampo (2004) for south of Saharan African countries but contrasts the finding of Amaeteng and Amoako-Adu (2002).

Domestic Debt (DOD)

The coefficient of domestic debt is negative and statistically significant. It conforms to a priori expectation of a negative relationship between domestic debt and foreign private investment. The value of the coefficient is -0.629618. This means that increase in domestic debt by 1% will reduce foreign private investment by about 0.062%. This outcome is not surprising because private investors would face credit crunch with an increasing domestic debt. This is in tandem with the result found by (Moha, 1999), (Arias, 2002) and (Pattillo et al, 2002),

Exchange Rate (EXR)

The coefficient of exchange rate is positive, thus the result of this study suggests that there is a positive relationship between exchange rate and foreign private investment. The t-test, result shows that exchange rate is statistically significant which implies that exchange rate has strong positive effect on foreign private investment. The coefficient value of exchange rate is 50617.74. This means that if exchange rate appreciates by 1%, foreign private investment will increase by about 50%. The same result was found by Nair and Frazier (1988).

Debt Servicing (DSC)

The coefficient of debt servicing is positive to the tune of 3.618360and it is statistically significant. This means that 1% increase at the rate in which debts are being serviced would increase foreign private investment by about 3.6%. Increase in debt servicing or reduction in debt accumulation on the average would increase private investorsô confidence on the Nigerian investment climate. This result agrees with the findings of Cohen, (1991), Claessens et al. (1997) and Fosu, (2007).

Interest Rate (INT)

The coefficient of interest rate is negative but it is statistically insignificant though it conforms to óa priorió expectation. The value of the coefficient is -37514.28. This implies that increase in interest rate by 1% will lead to a decrease in foreign private investment to about 3.75%. This is true because high interest rate discourages investors from borrowing which invariably aids foreign private investment. This outcome is line with the findings of Patilo et al, (2002).

Real Gross Domestic Product (RGDP)

The coefficient of real gross domestic product is positive though statistically insignificant and it conforms to ó*a priori*ô expectation. The value of the coefficient is 1.847181. This implies that increase in real gross domestic product by 1% will lead to an increase in foreign private investment by about 1.85%. This result corresponds to the findings by Iyoha (2002).

4.2.2 Coefficient of Determination (R^2)

The R^2 value is 0.958348 and $R\bar{2}^2$ (adjusted for loss in degree of freedom) is 0.951207. The value of R^2 shows that the model explains variations in foreign private investment to the tune of 95%.

4.2.3 The F-Test

Decision Rule

Reject H_0 if $F_{cal} > F_{0.05}$ (v_1/v_2)d.f

Accept if otherwise.

From the regression result, F_{cal} = 134.2152 From the F-distribution table $F_{0.05}$ (3,146) = 2.34. Since $F_{cal} > F_{tab}$ the study rejects H_0 and conclude that the overall regression is statistically significant at 5% level. This means that the linear combination of the individual independent variables significantly impact on foreign private investment.

4.2.4 Test for Autocorrelation

This is carried out in this study using the Durbin-Watson t-statistic to test for autocorrelation. Thus, the hypothesis tested is as written below:

H_0: No autocorrelation

H_1: Autocorrelation exists

Level of significance = 0.05

Decision Rule

If computed d-value is less than d_L, there is evidence of positive firstï order serial correlation; if it is greater than du, there is no evidence of positive first-order serial correlation; but if d_{cal} lies between the lower and the upper limit, there is inconclusive evidence regarding the presence of positive first-order serial correlation.

The summary of the decision rule is presented in table (4.7) below.

Table 4.2.2 Durbin–Watson Test: Decision Rule

Null hypothesis	**Decision**	**If**
No positive autocorrelation	Reject	$0<d<d_L$
No positive autocorrelation	No decision	d_L Òd Òd_u
No negative autocorrelation	Reject	$4- d_L<d<4$
No negative autocorrelation	No decision	$4-d_u$ÒdÒ$4-d_L$
No autocorrelation, positive or negative	Do not reject	$d_u<d<4-d_u$

From the regression result (see appendix), we could observe that the Durbin-Watson statistics d = 2.086. Also, the significant points of d_L and d_u from Durbin Watson table at 0.05 level of significance are; $d_L = 1.175$; $D_u = 1.854$

Using the fifth decision rule, we have; $d_u<d<4-d_u$

Ÿ 1.854 <2.086< 4 - 1.854

Ÿ 1.854<2.086<2.146

(with k = 6 and n = 42)

From the result above, the study observes that d = 2.086 > d_u = 1.854 and that 1.854<2.086<2.141, hence, the study do not reject the null hypothesis of no autocorrelation positive or negative and conclude that there is no evidence of positive or negative first-order serial correlation.

4.2.5 Cointegration Test Result for Model 2

Since the study do not want to lose any useful information due to differencing, it carries out a cointegration test on the estimated model. This test is carried out using the Augmented Dickey Fuller test on the residuals obtained from the regression under the following hypothesis,

H_0 :Ŭ = 0 (not cointegrated)

Against

H_1 :Ŭ Í 0 (cointegrated)

Decision Rule:

Reject H_0 if $t_{cal} > t_{tab}$

The following result was obtained.

Table 4.2.3

Variable	t-ADF	Critical value
Residual (U_{t-1})	-5.212877	1% = -2.6211
		5% = -1.9492
		105 = -1.6201

From table 4.4.1 above, since the absolute value of computed t-adf > critical t-adf, especially when compared at the 5% critical value i.e. /-5.212877/>/-1.9492/, we conclude that the estimated error term is stationary which means that the variables are cointegrated. Put in another way, there is a sustainable long run relationship between foreign private investment and domestic debt in Nigeria.

4.2.6 Error Correction Model (ECM) for Model 2

The error correction model is a short run model, which explains the extent to which the long run errors of the model are corrected in the short run. In other words, it is employed to check the speed of adjustment between the long run and short run dynamics in model (3.6). To arrive at this error correction model, all the variables in model (3.6) are estimated in their level form and the cointegrated residuals obtained. The ECM thus, implies estimation of the first difference of their level forms against the first lag of their cointegrating residuals (RESIDOI (-1)). The following result is obtained.

1)). The following result is obtained.

Table 4.2.3 The ECM Result

Variable	Coefficient
C	38870.14
EXD	-1.213422
DOD	-0.331284
EXR	47241.55
DSC	2.025241

INT	-37873.04
RGDP	1.831403
ECM(-1)	-0.424782

From the table 4.6 above, the speed of adjustment is found to be negative and statistically significant for the foreign private investment. The larger the value of the errorï correction term, the faster the disequilibrium is adjusted in the short run so that long run equilibrium relationship holds. The speed of adjustment is -0.42, implying that about 42 percent of the previous short-run deviation between the actual and the desired foreign private investment is corrected within the first two years out of four years. The relatively moderate speed of adjustment explains the fast resurgence of foreign private investment in recent years.

4.2.7 Unit Root Test Result

The test is carried out to know whether the mean value and variances of the variables are time invariant, that is, whether they are constant over time. The unit root test for stationarity is applied using the Phillips-Perron (PP) Test.

The null hypothesis is stated thus,

H_0: ŭ = 0 or P = 1 (The variables are non-stationary)

Against,

H_0: ŭ Í 0 or P < 1 (The variables are stationary)

We assume 5% critical value (5% level of significance), to compare with the PP result.

Decision Rule

Reject H_0 if the absolute values for the calculated PP for any of the variables are greater than the absolute value of the 5% critical values.

Table 4.2.4

Integrated of order 1(1) (First Differencing)

Variables	PP test Statistic	Mackinon Crit.Value 1%	5%	10%	Constant	Trend	Lag	None
DPI	-4.80072	-3.6019	-2.9358	-2.6059	Yes	No	3	No
FPI	-3.10679	-2.6211	-1.9492	-1.6201	No	No	3	Yes
PI	-6.91178	-2.6211	-1.9492	-1.6201	Yes	Yes	3	No
DOD	-7.37086	-4.2023	-3.5247	-3.1931	Yes	Yes	3	No
EXD	-4.00080	-2.6211	-1.9492	-1.6201	No	No	3	Yes
EXR	-6.15037	-4.2023	-3.5247	-3.1931	Yes	Yes	3	No
INT	-8.78828	-3.6019	-2.9358	-2.6059	Yes	No	3	No
DSC	-7.86480	-4.2023	-3.5247	-3.1931	Yes	Yes	3	No
INF	-6.47040	-3.6019	-2.9358	-2.6059	Yes	No	3	No
NSV	-1.90378	-2.6211	-1.9492	-1.6201	No	No	3	No
RGDP	-5.84317	-4.2023	-3.5247	-3.1931	Yes	Yes	3	Yes

From table 4.6, it is observed that all the variables are stationary after taking their first difference. From the Phillips-Perron (PP) test results (see appendix), intercept is not included in interest rate, producer price index and oil price index because their line graphs (see appendix) start from origin. However, intercepts of inflation rate, open market operation, exchange rate and domestic price index are statistically insignificant while intercepts of consumer price index (CPI), gross domestic product and reserve requirement are statistically significant all the variables are statistically significant at lag 1 while all the variables except CPI are statistically insignificant at lag 2. Also the trend variable in all the variables is statistically insignificant except for CPI.

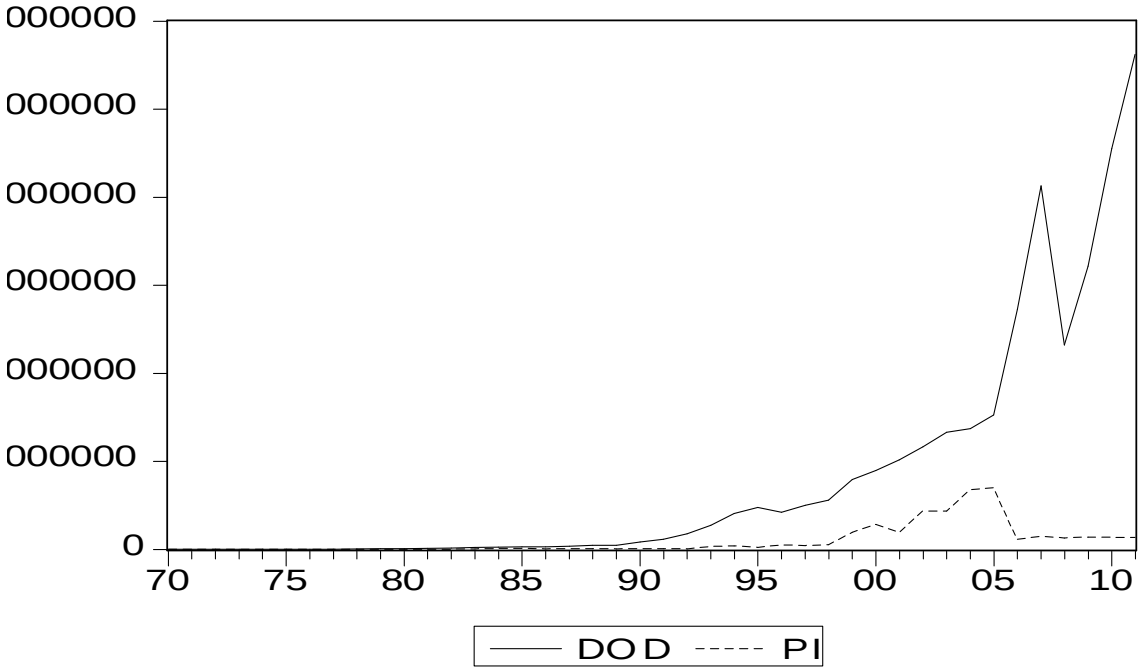
Model 3

4.3.1Trend Between Domestic Debt and Private Investment in Nigeria.

Table 4.3.1 The Trend Result

Variable	Coefficient
Trend	994.6575

Figure 4.1: Trend Graph



From table 4.3.1, the study observes that domestic debt and private investment are positively trending upwards though the trend variable is statistically insignificant. However, the line graph of figure one above indicates that domestic debt is trending upward with fluctuation observed between 2005 and 2006 and upward trend continues from 2007. On the other hand, private investment was relatively constant till 1997 and trended upwards from 1998 but not as much as domestic debt. The study observes that private investment trended downwards from 2005 to 2006 and remain relatively stable afterwards.

4.4 **Methods of Financing/Managing Domestic Debt in Nigeria**

Essentially, methods of financing/managing domestic debt in Nigeria involve the following:

1. *Embargo on New Loans*: The imposition of the embargo is to check the escalation of total debt stock and minimize the problem of additional debt burden. This policy was applied in 1984 to state Governmentsô from external sources. Occasionally, the Federal Government has fixed the maximum level of debt commitment for both the Federal and state Governments. In 1978, the

limit was N5.0 Billion for the Federal Government, and in 1982, it was N200 million for state Governments and this stipulation has remained in force since then.

2. *Limit on Debt Service Payment*: This requires setting aside a proportion of export earnings to meet debt service obligations to allow for internal development. In this regard, the state governments were required in 1980 to spend not more than 10 percent of their total revenue on debt service payments. Based on the agreement with the Federal Ministry of Finance, a defaulting state government can be bailed out, although the amount in default would be deducted at source from its budgetary allocation. In the case of the Federal Government, a maximum of 30 percent of export earnings could be allocated for debt servicing.

3. *Restructuring of Domestic Debt*: the Central Bank accommodates government financial shortfalls through the provision of overdraft facility by Ways and Means Advances. At the end of each financial year, outstanding Ways and Means Advances are packaged or converted into various short-term domestic debt instruments (Treasury Bills and Certificates) at specified interest rates and if not serviced are converted into Treasury Bonds of long-term maturity. This arrangement helps to reduce the effective interest payment and hence reduce the debt service burden.

4. *Servicing of domestic debt*: The CBN makes the interest and principal payments on domestic debt which fall due. It also provide discount and rediscount facilities in respect of debt instruments held by its customers. This later function is however, being transferred to discount houses. In the case of development stocks, the CBN publishes due dates for redemption of maturing stocks through redemption schedules, statements and payment forms. This is further facilitated by the creation of a fund known as the **Sinking Fund** into which government pays in amount from time to time for the purpose of redeeming its liabilities on the development stock under various balances. The balance in the Sinking Fund of each development stock is sometimes re-invested in another development stock carrying a higher rate of interest and of nearer maturity. For example, according to the CBN (1996), funds for the 20^{th} and 21^{st} development stocks were re-invested in the 22nddevelopment stock.

4.5 Evaluation of Research Hypotheses

The hypotheses of this study can be evaluated from the results of the estimated models.

Ho_1: Domestic debt has no significant impact on domestic private investment in Nigeria.

From the t-tests carried out on each of the variables on model 1, domestic debt and external debt are statistically significant and have negative effect on domestic private investment and national savings is found to be positive and statistically significant. This means that these variables have significant impact on domestic private investment (positively or negatively) in Nigeria.
For the first hypothesis, we reject the null hypothesis that domestic debt has no significant impact on domestic private investment in Nigeria and accept the alternative hypothesis.

Ho_2: Domestic debt has no significant impact on foreign private investment in Nigeria.
From the t-tests carried out on each of the variables on model 2, external debt and domestic debt, are statistically significant and are found to have inverse relationship with foreign private investment. Also exchange rate and debt servicing are found to be positive and statistically significant. This means that only these variables that are statistically significant have significant impact on foreign private investment (positively or negatively) in Nigeria.
For the second hypothesis, we reject the null hypothesis that domestic debt has no significant impact on foreign private investment in Nigeria and accept the alternative hypothesis.

Ho_3: Domestic debt has no upward or downward trend with private investment in Nigeria.
From the linear trend model result, the trend variable is positive. This means that domestic debt has upward trend with private investment in Nigeria.
For the third hypothesis, we reject the null hypothesis that domestic debt has no upward or downward trend with private investment in Nigeria and accept the alternative hypothesis.
Ho_4: There are no significant methods of financing/managing domestic debt in Nigeria.
From the analysis carried out, there are significant methods of financing/managing domestic debt in Nigeria.
For the fourth hypothesis, we reject the null hypothesis that there are no significant methods of financing/managing domestic debt in Nigeria and accept the alternative hypothesis.

4.5 Summary of Major Findings

The major findings emanating from this study include the following:

- The study found that domestic debt, external debt and national savings are statistically significant. Thus, domestic debt has significant impact on domestic private investment in

Nigeria with domestic debt and external debt having negative effect on domestic private investment.

- The study also found that external debt, domestic debt, exchange rate and debt servicing are the major determinants of foreign private investment in Nigeria. This means that domestic debt has significant impact on foreign private investment in Nigeria with exchange rate and debt servicing having positive effect on foreign private investment in Nigeria.
- The study equally found that that domestic debt has upward trend with private investment in Nigeria.
- The cointegration tests carried out show that there is sustainable long run relationship between domestic debt and domestic private investment on one hand and domestic debt and foreign private investment on the other hand, since t-ADF is greater than critical ADF whether at 1%, 5% or 10% for both models (that is, model 1 and 2).
- The result of the Error correction model shows that the speed of adjustment for model 1 and 2 are -0.236912 and -0.424782 respectively. This implies low and average speed of adjustment for model 1 and 2 respectively.
- Finally, the study found that there are significant methods of financing/managing domestic debt in Nigeria.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

This study has investigated and elaborated on the empirical issues pertaining to the structure and composition of domestic debt and the impact on private investment in Nigeria. Thus, the study modeled (1) domestic private investment against domestic debt and controlled for the effect of external debt, exchange rate, interest rate, inflation rate and national savings. (2) foreign private investment against domestic debt and controlled for the effect of external debt, exchange rate, debt servicing, interest rate and real gross domestic product and (3) the trend between domestic debt and private investment in Nigeria.

It is evident from the ordinary least squares results obtained from model 1 that domestic debt, external debt and national savings are significant factors affecting domestic private investment while exchange rate, interest rate and inflation rate are insignificant factors affecting domestic private investment in Nigeria. Also from model 2, all the variables have significant impact on foreign private investment in Nigeria except for interest rate and gross domestic product. From the linear trend model, the study found a positive trend between domestic debt and private investment in Nigeria.

It is also important to note that the cointegration test carried out shows that there is sustainable long run relationship between domestic debt and domestic private investment on one hand and domestic debt and foreign private investment on the other hand, since t-ADF is greater than critical ADF whether at 1%, 5% or 10% for both models (that is, model 1 and 2).

The study also found that the Error correction model result shows that the speed of adjustment for model 1 and 2 are -0.236912 and -0.424782 respectively. This implies low speed of adjustment for model 1 (taking about three years for the short run shocks in domestic investment to be adjusted) and relatively average speed of adjustment (taking about 2 years for the short run shocks in domestic investment to be adjusted).

5.2 POLICY RECOMMENDATIONS

Based on the findings of this study, the major policy recommendations are as follows:

In Nigeria, there have been indications that there are serious fluctuations in private investment in Nigeria owing to domestic debt even though arguments exist on the positive effects of private investment variables and the indirect feedback effects on economic growth and development. There is, therefore, the need for sustained effort in implementing sound economic policies that would aid private investment to thrive in Nigeria.

- Government should maintain a low domestic debt ratio to gross domestic product and resort to increase use of tax revenue to finance its projects as it is this studyôs believe that tax revenue is far from the optimum. This will boost private investorsô confidence in the economy.
- Government should divest itself of all projects which the private sector can handle including refining crude oil (petroleum product) and transportation but should provide enabling environment for private sector investors such as tax holidays, subsidies, guarantees and most importantly improved infrastructure.
- Government should maintain a proper balance between short term and long term debt instruments in such a way that long term instruments dominate the debt market. Even if the ratio of the long term debt is a multiple of deposit, the economy can still accommodate it so long as the proceeds are channeled toward improving Nigerian investment climate.
- Monetary policy authorities should elect for appropriate debt management policy which will enhance both domestic private investment and foreign private investment in Nigeria. Increased private investment would help to stabilize exchange rate, interest rate and inflation rate. Also, stability of domestic investment through monetary policy should be embarked upon for the growth of the sector. Monetary policy authorities and other financial regulatory or monitoring institutions should ensure that appropriate policies that will strengthen the efficiency of foreign private investment in Nigeria are being designed, embraced and enforced.

- Monetary policy authorities should ensure that domestic debt is not counter-productive on private investment in Nigeria. Monetary policies should be implemented on grounds that it will enhance private investment in Nigeria since private investment promotes economic growth and development.

5.3 CONCLUSION

This study examines the structure and composition of domestic debt and the impact on private investment in Nigerian economy. The study observes that the domestic debt has grown astronomically from N407 billion in 1994 to N3228 billion in 2009 and the main instruments of the domestic debt are the treasury bills and bonds and federal government bonds and stocks. The states and local governments are not yet important players in the domestic debt market.

The debt instrument issued are highly short term in nature as treasury bills and bond controlled over 70 percent of the issues until 2005 when the issue of long term bond became significant. The investor base of the Nigerian debt market is well diversified as both banks and non-bank public are active in the market especially from 2002 but the domestic debt holding of government is far above a healthy threshold of 35 percent of bank deposit as the average over the period of study is 114.98 percent of bank deposit and there is evidence of crowding out of private investments. The study of course affirms that level of debt has negative effect on private investment which is in line with the finding of Abbas and Christensen (2007).

From our findings, it can be reasonably concluded that domestic debt and external debt have negative effect on domestic private investment while national savings has positive effect on domestic private investment in Nigeria. Also, external debt and domestic debt have inverse effect on foreign private investment in Nigeria while debt servicing and exchange rate appreciation have positive effect on foreign private investment. However, the study can also conclude that exchange rate, interest rate and inflation rate have no significant impact on domestic private investment. It is equally suffices to say that interest rate and gross domestic product are found to have insignificant effect on foreign private investment in Nigeria. It is also important to conclude that there is sustainable long run relationship between domestic debt and domestic private investment on one hand and domestic debt and foreign private investment on the other hand, for both models (that is, model 1 and 2).

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APPENDICES

1. Model 1 result

1.1 The impact of domestic debt on domestic private investment

Dependent Variable: LOG(DPI)
Method: Least Squares
Date: 04/28/13 Time: 10:53
Sample(adjusted): 1971 2011
Included observations: 35
Excluded observations: 6 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.42483	0.860880	13.27111	0.0000
LOG(DOD)	-0.734074	0.313746	-2.339706	0.0267
LOG(D(EXD))	-0.167385	0.077873	-2.149455	0.0404
EXR	-0.006377	0.004344	-1.468245	0.1532
D(INT)	-0.002335	0.032216	-0.072489	0.9427
D(INF)	-0.004780	0.007333	-0.651788	0.5199
LOG(NSV)	0.897955	0.292553	3.069380	0.0047
R-squared	0.606327	Mean dependent var		10.91787
Adjusted R-squared	0.521968	S.D. dependent var		0.824641
S.E. of regression	0.570156	Akaike info criterion		1.891043
Sum squared resid	9.102179	Schwarz criterion		2.202112
Log likelihood	-26.09325	F-statistic		7.187490
Durbin-Watson stat	1.974246	Prob(F-statistic)		0.000103

1.2 Cointegration test result for model 1

ADF Test Statistic	-2.696586	1% Critical Value*	-2.6227
		5% Critical Value	-1.9495
		10% Critical Value	-1.6202

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(COINTEGRATION)
Method: Least Squares
Date: 04/30/13 Time: 13:54
Sample(adjusted): 1973 2011
Included observations: 39 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEGRATION(-1)	-0.521525	0.193402	-2.696586	0.0106
D(COINTEGRATION(-1))	0.002490	0.185317	0.013437	0.9894
D(COINTEGRATION(-2))	-0.075387	0.165108	-0.456595	0.6507
R-squared	0.277593	Mean dependent var		-167.3642
Adjusted R-squared	0.237460	S.D. dependent var		22474.70
S.E. of regression	19625.71	Akaike info criterion		22.68087
Sum squared resid	1.39E+10	Schwarz criterion		22.80884

Log likelihood	-439.2770	Durbin-Watson stat	1.972802

1.3 Error correction model for model 1

Dependent Variable: LOG(DPI)
Method: Least Squares
Date: 04/28/13 Time: 11:26
Sample(adjusted): 1973 2011
Included observations: 27
Excluded observations: 12 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(DOD)	-1.209334	0.844843	-1.431430	0.1677
LOG(D(EXD))	-0.571166	0.161146	-3.544397	0.0020
EXR	-0.056294	0.006674	-8.435101	0.0000
D(INT)	0.041032	0.062858	0.652785	0.5213
D(INF)	-0.005679	0.013826	-0.410735	0.6856
LOG(NSV)	3.001226	0.816488	3.675776	0.0015
ECM(-1))	-0.236912	0.129179	-1.833984	0.0816
R-squared	-0.158236	Mean dependent var		10.78359
Adjusted R-squared	-0.505706	S.D. dependent var		0.850813
S.E. of regression	1.044009	Akaike info criterion		3.142427
Sum squared resid	21.79909	Schwarz criterion		3.478384
Log likelihood	-35.42276	Durbin-Watson stat		1.119212

2. Model 2 result

2.1 The impact of domestic debt on foreign private investment

Dependent Variable: FPI
Method: Least Squares
Date: 04/28/13 Time: 11:06
Sample: 1970 2011
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	49045.00	185069.2	0.265009	0.7926
EXD	-1.325379	0.169584	-7.815473	0.0000
DOD	-0.629618	0.213773	-2.945265	0.0057
EXR	50617.74	6773.872	7.472496	0.0000
DSC	3.618360	1.600976	2.260096	0.0301
INT	-37514.28	25500.88	-1.471098	0.1502
RGDP	1.847181	1.433122	1.288921	0.2059
R-squared	0.958348	Mean dependent var		1163675.
Adjusted R-squared	0.951207	S.D. dependent var		2222239.
S.E. of regression	490871.5	Akaike info criterion		29.19676
Sum squared resid	8.43E+12	Schwarz criterion		29.48638
Log likelihood	-606.1320	F-statistic		134.2152
Durbin-Watson stat	2.086378	Prob(F-statistic)		0.000000

2.2 Cointegration test result for model 2

ADF Test Statistic	-5.212877	1% Critical Value*	-2.6211
		5% Critical Value	-1.9492
		10% Critical Value	-1.6201

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(COINTEGRATION)
Method: Least Squares
Date: 04/28/13 Time: 11:11
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEGRATION(-1)	-1.107620	0.212478	-5.212877	0.0000
D(COINTEGRATION(-1))	0.350192	0.169297	2.068502	0.0454

R-squared	0.455359	Mean dependent var	-14040.28
Adjusted R-squared	0.441026	S.D. dependent var	585524.2
S.E. of regression	437764.6	Akaike info criterion	28.86546
Sum squared resid	7.28E+12	Schwarz criterion	28.94990
Log likelihood	-575.3091	Durbin-Watson stat	2.022016

2.3 Error correction mechanism for model 2

Dependent Variable: FPI
Method: Least Squares
Date: 04/28/13 Time: 11:13
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	38870.14	187677.6	0.207111	0.8372
EXD	-1.213422	0.165219	-7.344316	0.0000
DOD	-0.331284	0.229538	-1.443264	0.1587
EXR	47241.55	6522.322	7.243057	0.0000
DSC	2.025241	1.620568	1.249710	0.2205
INT	-37873.04	24020.98	-1.576665	0.1247
RGDP	1.831403	1.406047	1.302520	0.2020
ECM(-1))	-0.424782	0.155466	-2.732307	0.0102

R-squared	0.965806	Mean dependent var	1221848.
Adjusted R-squared	0.958326	S.D. dependent var	2262456.
S.E. of regression	461864.0	Akaike info criterion	29.10079
Sum squared resid	6.83E+12	Schwarz criterion	29.43856
Log likelihood	-574.0157	F-statistic	129.1185
Durbin-Watson stat	2.061939	Prob(F-statistic)	0.000000

3. Model 3 result

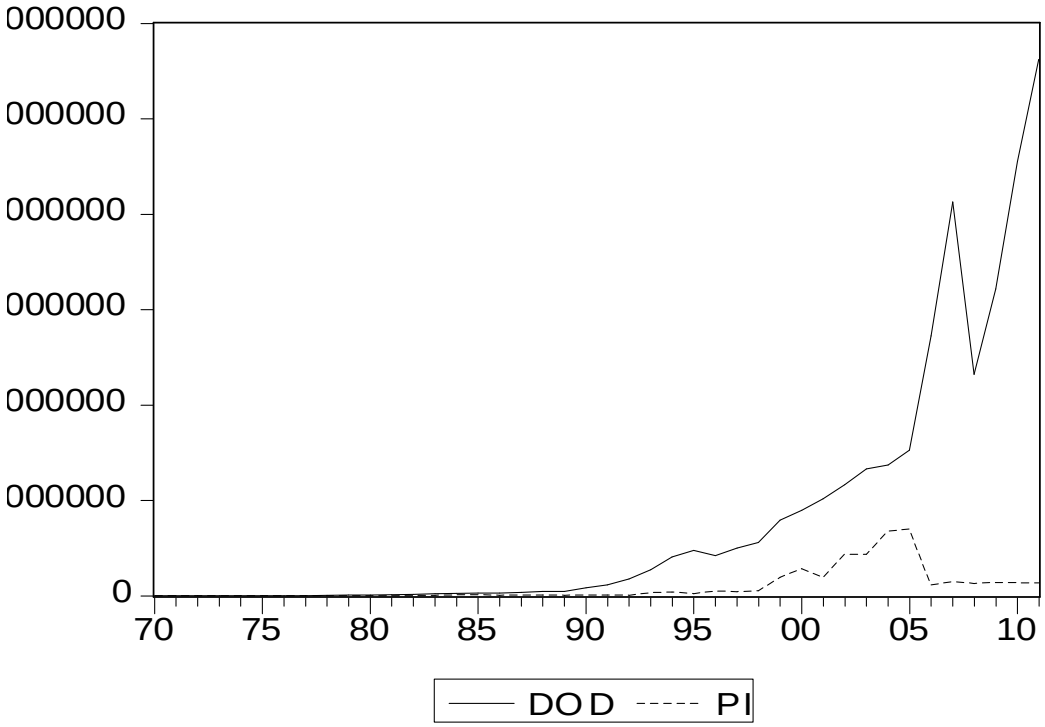
3.1 Linear trend model result

Dependent Variable: PI
Method: Least Squares
Date: 04/28/13 Time: 17:36
Sample: 1970 2011
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16511.68	31556.28	0.523246	0.6042
DOD	-0.026059	0.034066	-0.764962	0.4496
EXD	0.078220	0.025416	3.077596	0.0041
EXR	1697.078	1090.520	1.556209	0.1289
INT	-4761.864	4396.333	-1.083144	0.2864
INF	94.55928	863.5612	0.109499	0.9135
NSV	-0.011213	0.022422	-0.500087	0.6202
T	994.6575	3239.064	0.307082	0.7607

R-squared	0.836751	Mean dependent var	96541.30
Adjusted R-squared	0.803141	S.D. dependent var	172015.1
S.E. of regression	76321.00	Akaike info criterion	25.49293
Sum squared resid	1.98E+11	Schwarz criterion	25.82391
Log likelihood	-527.3515	F-statistic	24.89588
Durbin-Watson stat	1.528399	Prob(F-statistic)	0.000000

3.2 Linear trend graph between domestic debt and private investment



4. UNIT ROOT TESTS

4.1 UNIT ROOT TESTS RESULT FOR DPI

PP Test Statistic	-4.800715	1% Critical Value*	-3.6019
		5% Critical Value	-2.9358
		10% Critical Value	-2.6059

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	1.99E+08
Residual variance with correction	2.20E+08

Phillips-Perron Test Equation
Dependent Variable: D(DPI,2)
Method: Least Squares
Date: 04/28/13 Time: 18:03
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DPI(-1))	-0.742364	0.157131	-4.724487	0.0000

C	206.9987	2291.845	0.090320	0.9285
R-squared	0.370035	Mean dependent var		-146.9595
Adjusted R-squared	0.353457	S.D. dependent var		18017.08
S.E. of regression	14487.16	Akaike info criterion		22.04862
Sum squared resid	7.98E+09	Schwarz criterion		22.13306
Log likelihood	-438.9724	F-statistic		22.32078
Durbin-Watson stat	2.054209	Prob(F-statistic)		0.000031

4.2 UNIT ROOT TESTS RESULT FOR FPI

PP Test Statistic	-3.106794	1% Critical Value*	-2.6211
		5% Critical Value	-1.9492
		10% Critical Value	-1.6201

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel:	(Newey-West suggests: 3)
3	
Residual variance with no correction	1.77E+11
Residual variance with correction	1.88E+11

Phillips-Perron Test Equation
Dependent Variable: D(FPI,2)
Method: Least Squares
Date: 05/02/13 Time: 16:17
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FPI(-1))	-0.392163	0.128750	-3.045935	0.0041
R-squared	0.191772	Mean dependent var		10458.97
Adjusted R-squared	0.191772	S.D. dependent var		474585.6
S.E. of regression	426659.7	Akaike info criterion		28.79004
Sum squared resid	7.10E+12	Schwarz criterion		28.83227
Log likelihood	-574.8009	Durbin-Watson stat		1.648006

4.3 UNIT ROOT TESTS RESULT FOR PI

PP Test Statistic	-6.911780	1% Critical Value*	-2.6211
		5% Critical Value	-1.9492
		10% Critical Value	-1.6201

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel:	(Newey-West suggests: 3)
3	
Residual variance with no correction	1.25E+10
Residual variance with correction	1.07E+10

Phillips-Perron Test Equation
Dependent Variable: D(PI,2)
Method: Least Squares
Date: 04/28/13 Time: 18:06
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PI(-1))	-1.091898	0.159451	-6.847852	0.0000

R-squared	0.545947	Mean dependent var	56.94750
Adjusted R-squared	0.545947	S.D. dependent var	168113.2
S.E. of regression	113280.5	Akaike info criterion	26.13780
Sum squared resid	5.00E+11	Schwarz criterion	26.18003
Log likelihood	-521.7561	Durbin-Watson stat	2.024948

4.4 UNIT ROOT TESTS RESULT FOR DOD

PP Test Statistic	-7.370862	1% Critical Value*	-4.2023
		5% Critical Value	-3.5247
		10% Critical Value	-3.1931

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	2.10E+11
Residual variance with correction	1.07E+11

Phillips-Perron Test Equation
Dependent Variable: D(DOD,2)
Method: Least Squares
Date: 04/28/13 Time: 18:11
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DOD(-1))	-1.142237	0.167013	-6.839215	0.0000
C	-208545.4	161331.5	-1.292652	0.2041
@TREND(1970)	16989.21	6842.665	2.482835	0.0177

R-squared	0.559498	Mean dependent var	26772.13
Adjusted R-squared	0.535687	S.D. dependent var	699931.3
S.E. of regression	476937.0	Akaike info criterion	29.06019
Sum squared resid	8.42E+12	Schwarz criterion	29.18686
Log likelihood	-578.2039	F-statistic	23.49750
Durbin-Watson stat	2.045450	Prob(F-statistic)	0.000000

4.5 UNIT ROOT TESTS RESULT FOR EXD

PP Test Statistic	-4.000804	1% Critical Value*	-2.6211
		5% Critical Value	-1.9492

		10% Critical Value	-1.6201

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	3.19E+11
Residual variance with correction	2.80E+11

Phillips-Perron Test Equation
Dependent Variable: D(EXD,2)
Method: Least Squares
Date: 04/28/13 Time: 18:12
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXD(-1))	-0.604348	0.147310	-4.102575	0.0002
R-squared	0.301424	Mean dependent var		5174.596
Adjusted R-squared	0.301424	S.D. dependent var		684084.1
S.E. of regression	571763.4	Akaike info criterion		29.37552
Sum squared resid	1.27E+13	Schwarz criterion		29.41774
Log likelihood	-586.5104	Durbin-Watson stat		1.772358

4.6 UNIT ROOT TESTS RESULT FOR EXR

PP Test Statistic	-6.150366	1% Critical Value*	-4.2023
		5% Critical Value	-3.5247
		10% Critical Value	-3.1931

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	138.4708
Residual variance with correction	137.4965

Phillips-Perron Test Equation
Dependent Variable: D(EXR,2)
Method: Least Squares
Date: 04/28/13 Time: 18:17
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXR(-1))	-1.012033	0.164533	-6.150959	0.0000
C	-1.647466	4.101949	-0.401630	0.6903
@TREND(1970)	0.259178	0.173113	1.497159	0.1428
R-squared	0.505588	Mean dependent var		0.140270
Adjusted R-squared	0.478863	S.D. dependent var		16.94855
S.E. of regression	12.23512	Akaike info criterion		7.918537

Sum squared resid	5538.834	Schwarz criterion	8.045203
Log likelihood	-155.3707	F-statistic	18.91820
Durbin-Watson stat	1.998114	Prob(F-statistic)	0.000002

4.7 UNIT ROOT TESTS RESULT FOR INT

PP Test Statistic	-8.788283	1% Critical Value*	-3.6019
		5% Critical Value	-2.9358
		10% Critical Value	-2.6059

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	9.274607
Residual variance with correction	6.694904

Phillips-Perron Test Equation
Dependent Variable: D(INT,2)
Method: Least Squares
Date: 04/28/13 Time: 18:20
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INT(-1))	-1.301748	0.156545	-8.315495	0.0000
C	0.129546	0.494074	0.262200	0.7946

R-squared	0.645349	Mean dependent var	0.076500
Adjusted R-squared	0.636016	S.D. dependent var	5.178984
S.E. of regression	3.124539	Akaike info criterion	5.165157
Sum squared resid	370.9843	Schwarz criterion	5.249601
Log likelihood	-101.3031	F-statistic	69.14745
Durbin-Watson stat	2.182507	Prob(F-statistic)	0.000000

4.7 UNIT ROOT TESTS RESULT FOR DSC

PP Test Statistic	-7.864804	1% Critical Value*	-4.2023
		5% Critical Value	-3.5247
		10% Critical Value	-3.1931

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	3.48E+09
Residual variance with correction	2.91E+09

Phillips-Perron Test Equation
Dependent Variable: D(DSC,2)

Method: Least Squares
Date: 04/28/13 Time: 18:22
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DSC(-1))	-1.252513	0.162604	-7.702817	0.0000
C	-16135.14	20571.96	-0.784327	0.4378
@TREND(1970)	1485.370	853.9384	1.739435	0.0903

R-squared	0.616530	Mean dependent var	2790.781
Adjusted R-squared	0.595802	S.D. dependent var	96535.56
S.E. of regression	61373.98	Akaike info criterion	24.95940
Sum squared resid	1.39E+11	Schwarz criterion	25.08606
Log likelihood	-496.1880	F-statistic	29.74371
Durbin-Watson stat	1.992196	Prob(F-statistic)	0.000000

4.9 UNIT ROOT TESTS RESULT FOR INF

PP Test Statistic	-6.470398	1% Critical Value*	-3.6019
		5% Critical Value	-2.9358
		10% Critical Value	-2.6059

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	222.8672
Residual variance with correction	132.9686

Phillips-Perron Test Equation
Dependent Variable: D(INF,2)
Method: Least Squares
Date: 04/28/13 Time: 18:24
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INF(-1))	-1.017273	0.162167	-6.272992	0.0000
C	-0.143364	2.421775	-0.059198	0.9531

R-squared	0.508729	Mean dependent var	-0.092500
Adjusted R-squared	0.495801	S.D. dependent var	21.57051
S.E. of regression	15.31656	Akaike info criterion	8.344453
Sum squared resid	8914.689	Schwarz criterion	8.428897
Log likelihood	-164.8891	F-statistic	39.35042
Durbin-Watson stat	1.987661	Prob(F-statistic)	0.000000

4.10 UNIT ROOT TESTS RESULT FOR NSV

PP Test Statistic	-1.903778	1% Critical Value*	-2.6211
		5% Critical Value	-1.9492

	10% Critical Value	-1.6201

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	6.75E+10
Residual variance with correction	6.03E+10

Phillips-Perron Test Equation
Dependent Variable: D(NSV,2)
Method: Least Squares
Date: 04/28/13 Time: 18:30
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NSV(-1))	-0.213750	0.105689	-2.022447	0.0500
R-squared	0.092387	Mean dependent var		14440.00
Adjusted R-squared	0.092387	S.D. dependent var		276222.7
S.E. of regression	263153.9	Akaike info criterion		27.82355
Sum squared resid	2.70E+12	Schwarz criterion		27.86577
Log likelihood	-555.4710	Durbin-Watson stat		2.098036

4.11 UNIT ROOT TESTS RESULT FOR RGDP

PP Test Statistic	-5.843173	1% Critical Value*	-4.2023
		5% Critical Value	-3.5247
		10% Critical Value	-3.1931

*MacKinnon critical values for rejection of hypothesis of a unit root.

Lag truncation for Bartlett kernel: (Newey-West suggests: 3)	
3	
Residual variance with no correction	8.90E+08
Residual variance with correction	8.09E+08

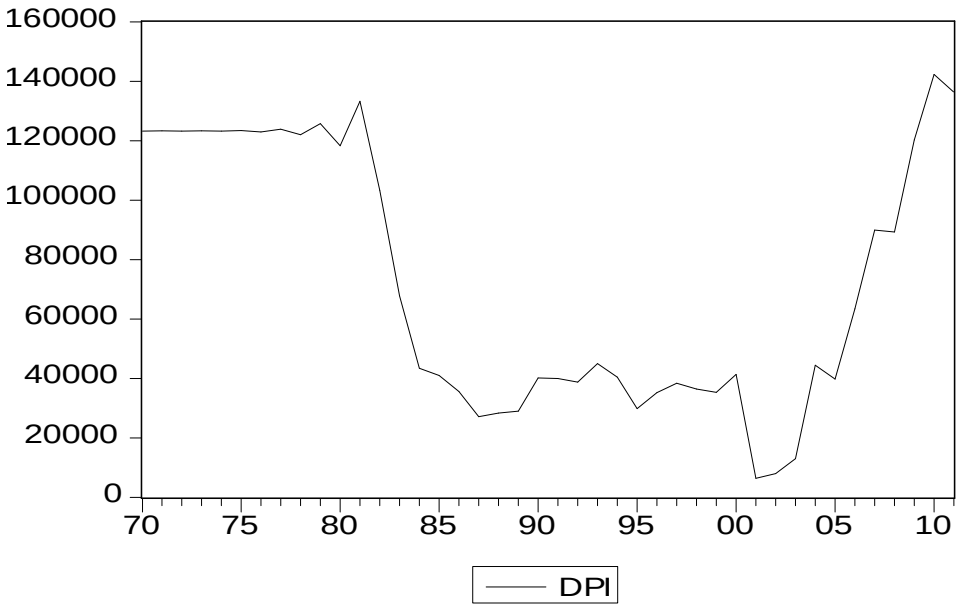
Phillips-Perron Test Equation
Dependent Variable: D(RGDP,2)
Method: Least Squares
Date: 04/28/13 Time: 18:31
Sample(adjusted): 1972 2011
Included observations: 40 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1))	-0.967435	0.165094	-5.859918	0.0000
C	-904.7143	10367.92	-0.087261	0.9309
@TREND(1970)	977.3151	452.2392	2.161058	0.0372
R-squared	0.481537	Mean dependent var		1433.328
Adjusted R-squared	0.453512	S.D. dependent var		41954.64
S.E. of regression	31014.91	Akaike info criterion		23.59436

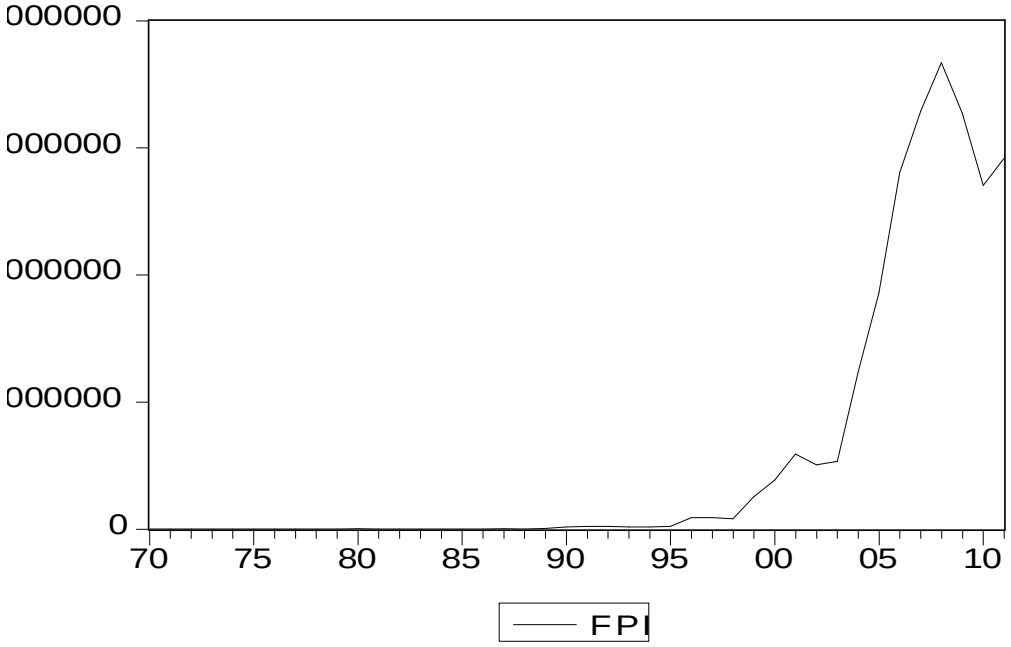
Sum squared resid	3.56E+10	Schwarz criterion	23.72103
Log likelihood	-468.8872	F-statistic	17.18236
Durbin-Watson stat	1.988120	Prob(F-statistic)	0.000005

5. LINE GRAPHS

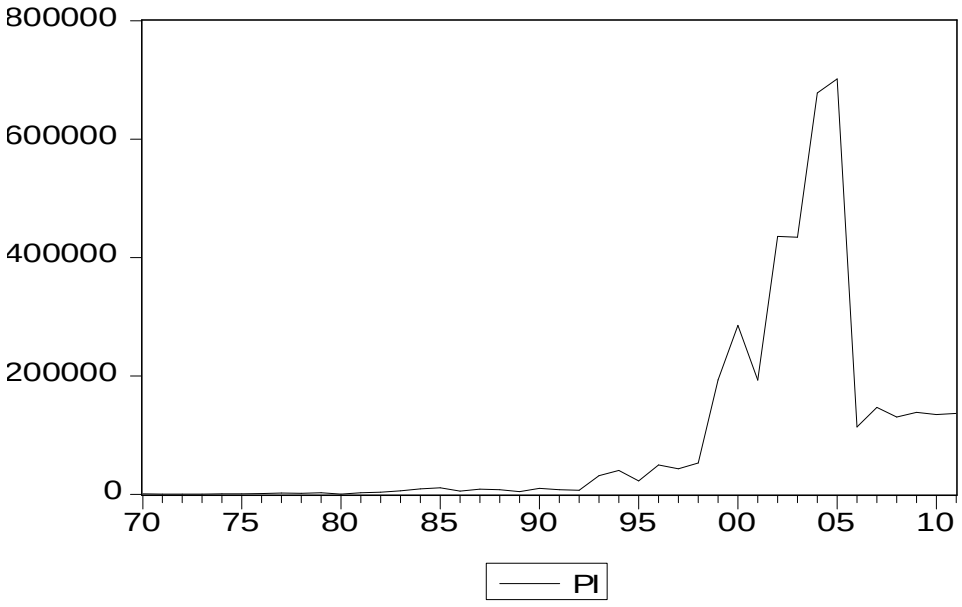
5.1 LINE GRAPH FOR DPI



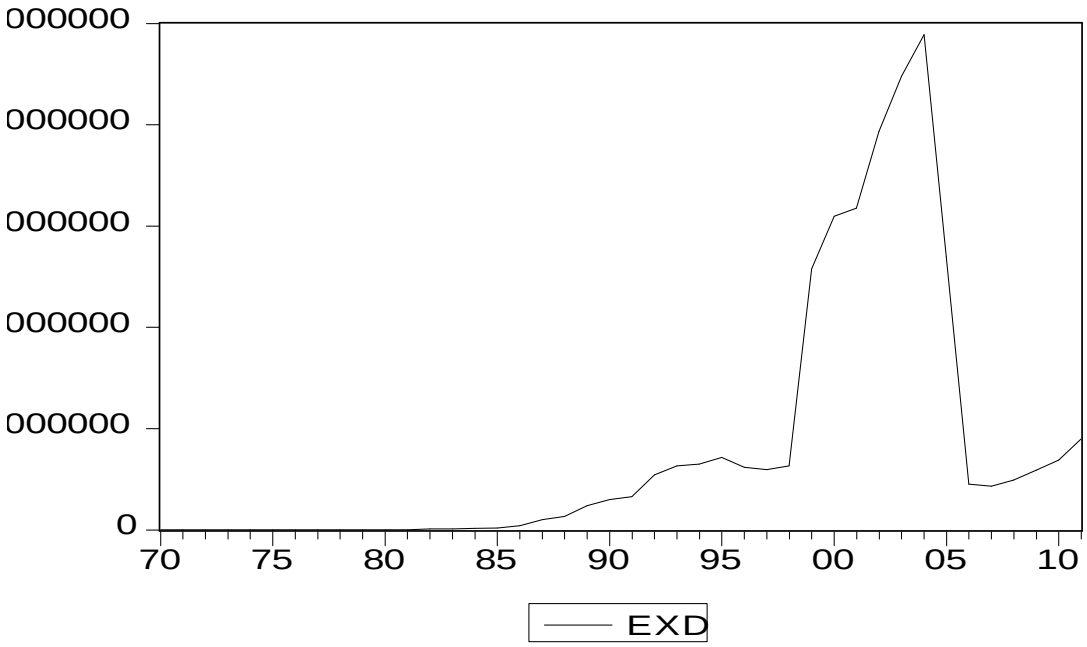
5.2 LINE GRAPH FOR FPI



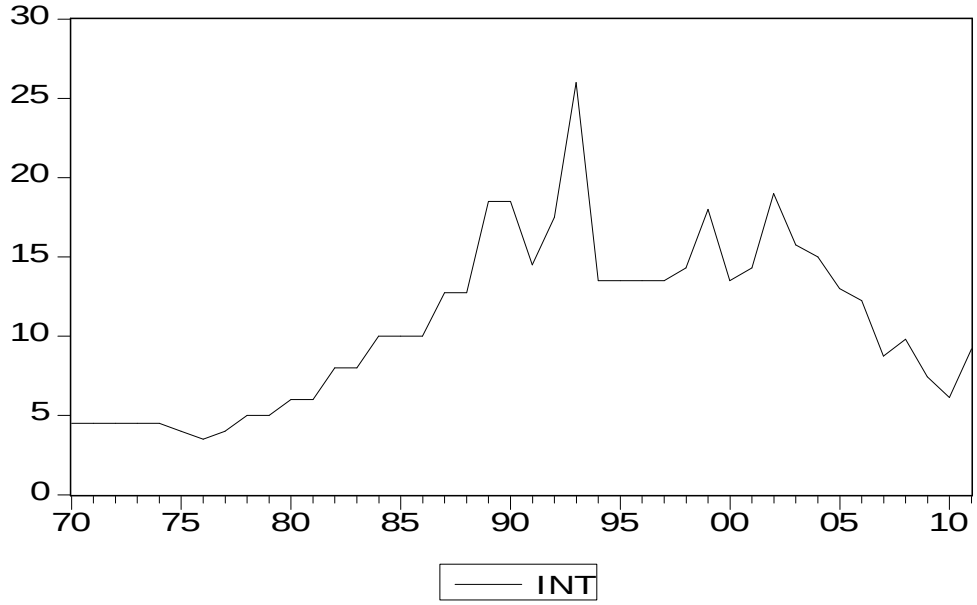
5.3 LINE GRAPH FOR PI



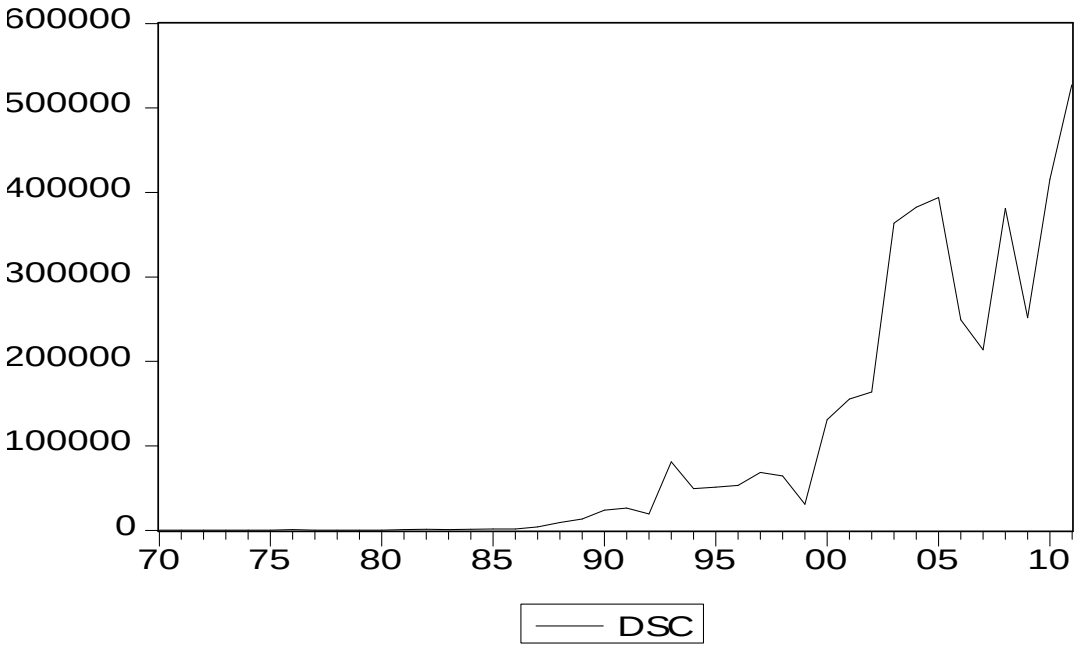
5.4 LINE GRAPH FOR EXR



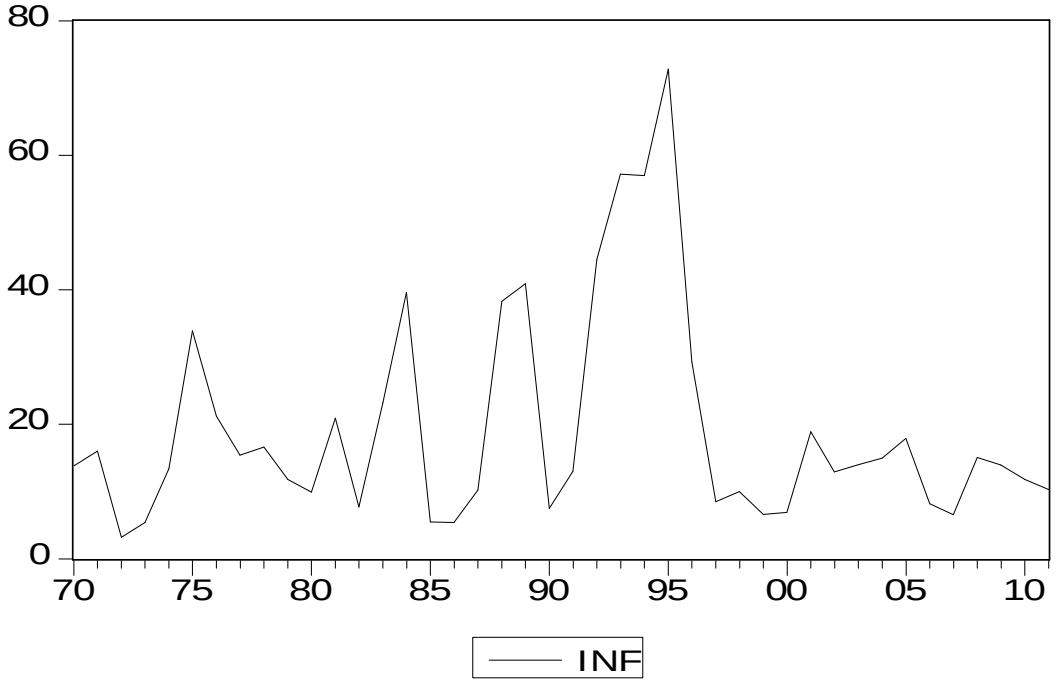
5.5 LINE GRAPH FOR INT



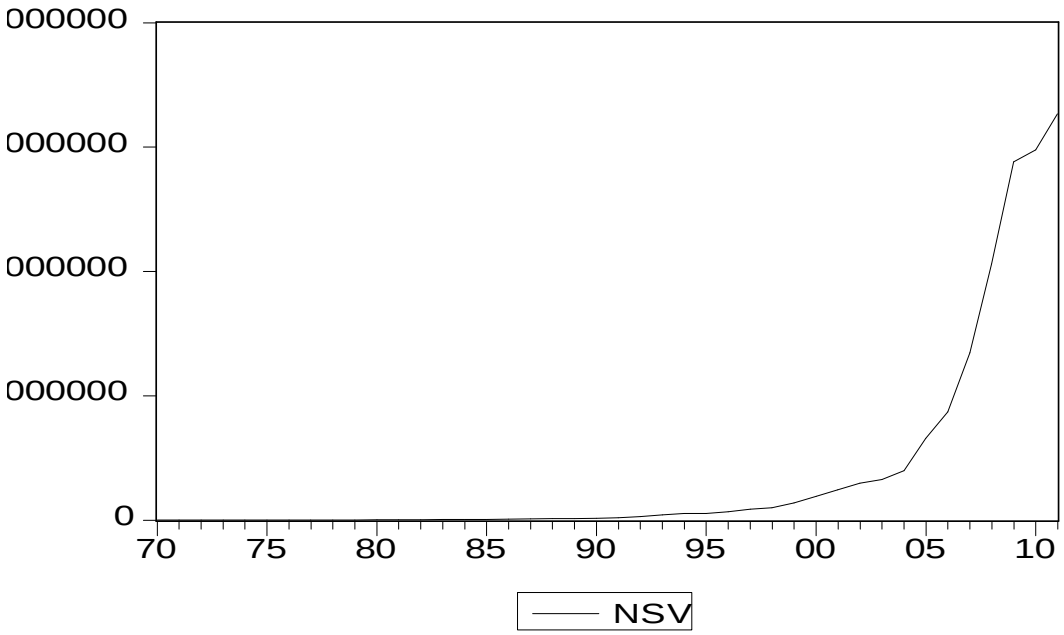
5.6 LINE GRAPH FOR DSC



5.7 LINE GRAPH FOR INF



5.8 LINE GRAPH FOR NSV



5.9 LINE GRAPH FOR RGDP