# Capital Flight versus Domestic Investment in Developing Countries:

# An Empirical Analysis from Nigeria

Adetiloye, Kehinde Adekunle

Department of Banking and Finance

School of Business, Covenant University, Ota, Nigeria

Tel: 234-802-295-9065      E-mail: Kehinde.adetiloye@covenantuniversity.edu.ng

## Abstract

Capital flight is a challenge for many developing countries of the world. The problem is more acute in a country like Nigeria where domestic investment has been severely affected. The study undertakes an empirical investigation of the problem using variables of investment, exchange rates and others in a vector error correction mechanism and the ordinary least regression analyses to test the level of significance of the impacts of each of the adopted variables. The results indicate that capital flight has negative but insignificant impact on domestic investment in Nigeria. This is as a result of the high level of capital flight or low level of investment undertaken over the years in the economy. The basic variable involved in the two is the exchange rate which is significant in investment but insignificant in capital flight. The paper recommends further floating of the exchange rate and transparency in its management. It also recommends that policies to encourage autonom*o*us investment by both private and public sector be put in place.

**Keywords:** Autonomous investment, Exchange rate, Domestic investment, Financial savings

JEL: F31, F32, E22

## 1. Introduction

Capital flight reduces the investible capital available in the domestic economy. Investments that lead to increase in capital formation for the economy and act as the foundation for infrastructure or framework for the development of the country cannot be undertaken since there is paucity or inadequacy of capital. The continuous campaign for foreign investors to invest capital in the domestic economy becomes meaningless when encouragements to domestic investors are not yielding results. This raises concern on issues of domestic investment and capital flight. Domestic investment is only possible with aggregated domestic savings which itself is a function of the level of income. However, the rate of investment *vis a vis* growth has proved to be negligible. Uchendu, (1993) found a positive but low correlation between savings and investment in Nigeria. However, other sources of investment, such as foreign inflows of capital can be used to supplement domestic investment. Capital flight is defined as the difference between total private capital outside the domestic economy and that part for which interest income is identified and reported. By non-reporting of returns, it can be said that such capital is lost to the country.

The importance of investment has been realized by successive administrations long time ago, especially of foreign direct investment (FDI). Various governments have encouraged the inflow of foreign investment through policies enunciations rather than concrete steps to implement policies formulated and establish a culture to encourage domestic investments by residents. In addition, laws have been enacted to establish institutions and special units (such as Nigeria Investment Promotion Commission) that should foster economic and investment growth among many other steps taken to encourage investments. There are various estimates of capital flight and as many definitions. There are the studies of Ajayi (1990) and Onwudoukit (2001) which cover the period between 1970 and 1989. Lawanson's (2007) study on capital flight utilised the portfolio approach. The uses of flight capital in foreign investments are many, but became noticeable when developing countries' holdings of earning assets in form of Certificate of Deposits (CDs), real estate or negotiable bonds became significant and could no longer be ignored (Cardoso and Dornbush, 1989). The major objective of this paper is to determine the impact of capital flight on domestic investment in Nigeria. The paper is divided into five sections. Following after this introduction is the review of extant literature which is followed by methodology and discussion of results respectively. Section five makes some recommendations and concludes the paper.

## 2. Review of Literature

### 2.1 Conceptual Issues on Capital flight

Cuddington (1986) defines capital flight as short-term speculative outflows out of a country. This is taken to mean outflows that would involve the acquisitions of assets overseas plus net errors and omissions in the Balance of Payments of the country. Cuddington's definition is synonymous with the term "hot money flows." and recognizes that the non-bank private sector entities are involved in capital flight. Dooley (1986) believes that this form of capital in flight often responds faster to *expected returns*, risks factors and variations in the macroeconomic conditions affect such flows. Khan and Ul Haque (1987) define it as gross private short-term capital flows in addition to net errors and omissions in the country's BOP. Yet a third definition, by Morgan Guaranty Trust Company (1986), defines it as "the reported and unreported acquisition of foreign assets by non-bank private sector and elements of the public sector". One usually acceptable definition sees it as all private capital outflows from developing countries, be they short or long term, portfolio or equity investments (Ajayi 1992, and Oloyede, 2002). Schneider (2003) defines it as that part of outflow of resident capital that is motivated by economic and political uncertainty. This implies that such political uncertainty will involve likely change of government or governmental policies as denoted by country instability and all forms of minor and major changes in the political circumstance of the country. Vu Le and Zak, (2001) concluded that no matter how capital flight is defined conceptually and (or) measured, political risk factors matter in the case where no other macroeconomic variables are taken into account.

### 2.2 Portfolio Theory in Capital Flight

One common reason for preference for overseas investment is found in portfolio theory argument. Should external portfolio diversification be taken as capital in flight? This might be so if diversified investment does not report returns or have records at home. The considerations of real effective exchange rates, possibility of foreign or home bias, impacts of the level of currency risks and real rates of return make matters to be slightly complicated (Tille and Wincoop, 2007). However, the portfolio approach to international flows and flights of capital have been accepted as the most popular (Obstefeld, 2004). In the analyses of many of the flights of capital investigated, the portfolio approach seems to have gained upper hand. This depends so much on the choice of investors as to where to hold their wealth. The choice is nevertheless influenced by risk and return trade-off and other considerations.

Therefore, the portfolio choice approach is important. Lane and Millesi-Ferretti (2004) and Obstfeld (2004) have called for its continuous use in the explanation of countries' open economy dynamics. In Deveruox and Saito (2006), it was found that the existence of nominal bonds and the portfolio composition of net foreign assets is a significant cause of capital flows between countries. When investors adjust their gross positions in each currency's bonds, countries can achieve an optimally hedged changes in their net foreign assets (or their capital account), thus facilitating international capital flows. Collier *et al* (2001 and 2002) concluded that the incidence of capital flight anywhere in the world is in response to portfolio choice and risks.

### 2.3 Political Risk and Uncertainty in Capital flight

Cerra *et al* (2005) is of the contention that researchers have started directing attention to non-macroeconomic variables such as political risk factors. For instance, Gibson and Tsakalotos (1993) had earlier concluded that political risk and expected depreciation of the currency were significant determinants of capital flight in the five European countries they studied. Similarly, Fatehi (1994) took it further by inferring that political instability often adversely influences inflows of Foreign Direct Investment into a country and argues "whatever keeps foreign investors away from a politically volatile country should influence capital flight as well". Lensink, Hermes, and Murinde (2000) also examined the relationship between political risk and capital flight for a number of developing countries.

Capital flight episodes can be country-specific and may not be fully generalized. The impact of corruption and illegal movement of resources across countries cannot be brushed aside. Collier *et al* (2003) considers one of the implications of capital flight as the brain drain that has compounded the woes of those countries as they lose out in the emigration of human capital who seek better returns for their services across the countries of the world. The political aspects of capital flight have been traced to instability and political events of countries. Vu Le and Zak (2001) adopted the Morgan Guaranty Trust definition agrees that the causes are not purely economic. In the current globalizing world, where capital movements through the capital account of the BOP is unhindered and unrestricted, a new definition for capital flight should consider the freedom of choice of the wealthholder to choose where to hold his investment and in whatever form.

The Dutch disease route, according to (Corden, 1984) has to do with the appreciation of the real effective exchange rate (REER), which affects the tradable sector and exports of the economy detrimentally. In the process much more

than the economy can absorb is available. This tends to shift available capital abroad for investment purposes. Bevan et al, (1999) believe that this is the main reason why the non-oil export and foreign private investment collapsed in Nigeria in the 1980s. The evidence that a number of countries have assets outside their shores and at the same time having a sizeable amount of foreign debt (Dooley *et al,* 1983) abounds in the literature. While capital flight, as a private concern flows in one direction, public capital flows in the other direction, both occurring simultaneously (Eaton, 1989).

As in many of the studies, the incidence of capital flight is due to increase in country risks, which has to do with the socio-political structure of the country and governance problems. Examples abound in the classic case of Brazil as found in Pinheiro (1997), and many studies involving Collier (1999, 2000, 2002 and 2003). The country risks feature prominently in the Nigerian case.

*2.4 Domestic Investment*

Domestic investment on the other hand is the total quantum of capital acquisition made in an economy at any given time, which most times come from aggregated domestic savings. Investments made by various units in the economy can come from two sources: domestic and foreign. The Keynesians term investment as additions to capital, which works to increase the level of income and production, by increasing production and the purchase of capital goods (Jhingan, 2003). Investment is the purchase of goods that are not consumed today but are used to create further capital (wealth). Investment can also be referred to as the production of capital goods (Heim, 2008). Expected return in the future determines the level of investment that can be made in the current period. The expectation here refers to the interest rate, according to Heim (2007), the price of borrowed funds, which determines investment is an important determinant affecting the GDP. Investment is an addition to real capital and capital stock in the economy. Investment, in finance, is the process of acquisition of financial assets (securities) for purpose of earning a return, (Stiglitz, 1993), which can be made either domestically or abroad.

Heim (2008) finds that that capacity utilization has no significance with government investment (which leads to crowding out or in of other investments), which is the most important variable of the eight Keynes hypothesised. These can generally be divided into autonomous and induced investment. Investment in any form, according to Arrow (1968) is considered reversible and irreversible. Autonomous investment is service-based and may not induced by demand as it is not directly influenced by returns of factors of production while induced investment is largely profit motivated. Autonomous investment is in the purview of the public sector and therefore more propelled by the government due to the quantum of required resources. It leads to capital formation and increases the productive capacity of the economy, and is the most stressed and significant (Malinvaud, 1982 and Snessens, 1987).

Domestic investment is made to increase the total capital stock in the domestic economy. This is done by acquiring capital-producing assets and assets that can generate income within the domestic economy rather than abroad. The role of savings in the investment process is positive. Countries with higher propensity to save have greater savings at every level of income and interest leading to a higher equilibrium level of savings and eventually a lower level of interest. Savings ordinarily is accumulated income and abstention from current expenditure. One of the five ways of increasing savings domestically is the reduction in capital outflows from a country (World Bank, 2007). The others are the control of demographic factors (population, etc), reforming the tax sector, financial sector reforms and increasing investment opportunities. Of the five, the control of capital outflows may not be easily achieved since it is out of domestic control and can be induced by external factors while the others can be controlled within the domestic environment. Capital flight in the economy is then seen as both a cause and consequence of a country's poor investment performance. Investment therefore is not constrained by aggregate savings but more by domestic interest rates (Monetary Policy Rates) as set by the Central Bank who have other objectives apart from maintenance of low inflation in conjunction with increase in savings within the domestic economy (Moore, 2006). Therefore the new equation of investment is: Investment = (Savings) + (newly created money available to Deposit Money Banks).

While savings rates have doubled in South East Asian countries and increased in Latin America countries, it has stagnated in sub-Saharan Africa, according to Loayza, Schmidt-Hebbel and Serven (2000). Since savings, investment and economic growth are linked, unsatisfactory and poor performance of one affects the other and often leads to stagnated growth that affects the viability of the Balance of Payments (Chete, 1999). Attempts at reducing expenditure have affected investment rates that led to poor and sluggish growth and eventually affecting savings performance (Khan and Villanueva, 1991). Capital formation refers to the process of accretion or stocking of assets of value, which increases wealth or the creation of further wealth. Capital formation can be differentiated from savings because accumulation deals with the increase in stock of investments and not necessarily all savings are invested.

With Nigeria's low level of savings and investment profile, Nwachkwu and Odigie (2009) recommend the increase in the production base of the economy in order to increase the two variables by encouraging the increased funding for the diversification efforts away from oil. The use of National Economic Empowerment and Development Strategy (NEEDS) to improve the productive base of the economy is mentioned. Specific sectors that should be of interest are the agricultural and Micro, Small and Medium Enterprises (MSMEs) scale sub-sector, to encourage savings and investments rates in the Nigerian economy.

The spread between deposit and lending rates have remained high ranging between 15% to 20%, depending on the bank [(The fairly older banks have a regime of lower interest rates than the younger banks) CBN, 2009)]. Outrageously high interest rates cannot aid the investment process. To encourage investment in long term assets (which increases the capital stock in the economy), the Small and Medium Scale Enterprises can be deepened as enunciated in the Financial System and Strategy 2020 document (Oyelaran–Oyeyinka, 2008) and replicate the recapitalisation episodes in the banking and telecommunication sectors.

The relationship between real investment and GDP is considered the most important of the factors antecedent to growth (Levine and Renelt, 1992). Liquidity preference is one of the main reasons why an investor would prefer to invest in financial instruments rather than physical or real investment, some of which are irreversible. The law of diminishing returns ensures that the continuous additions of an input (for example, capital) relative to the others can lead to reduction in marginal growth or negative real growth, and therefore there is the need to consider a place for other factors. From the investment climate point, the attractiveness of the acquisition of foreign assets depends on the exchange rate-adjusted return. This should be consistently higher than what obtains in domestic market given the stability of the environment.

A positive relationship has been established between investment and economic growth (Chenery and Strout, 1966) and Iyoha (1998). Iyoha (1998) used investment-income ratio with data between 1970-1994 to establish that a 10% per cent rise in investment in Nigeria income ratio will lead to a 3% rise in per capital Gross National Product in the short run and 26% in the long run. This led to the conclusion that the Gross National Product is highly investment elastic in Nigeria. Aggregate investment, comprising of both private and public investment, is needed for rapid growth and the development of the economy. Investment in growth yielding sectors of the economy in the short run may be good but at a cost of real sector growth in the country. The investment made in people and infrastructure is seen to be the best as it produces multiplier effect on the economy in the long run.

The attitude of Nigerian banks in the savings and investment analysis of Soyibo (1994) causes great concern as the findings prove that the lack of interest in investment is basically for profit motive. Income theory justifies their lending behaviour after the financial market deregulation of 1987. (The banks were forced to lend to specific sectors before deregulation.) At that time Ojo (1976), had mentioned the unwillingness of the banks to aid investment by their lending activities. In addition, Soyibo shows that borrowers' ability to repay was significant, followed by the profitability of the sector in their lending decisions. While Uchendu (1993) agrees that the low level interest rate encouraged direct private borrowing for investment purposes, it was blamed for retardation in the development of the financial system which encouraged capital flight and poor loan discipline. Bogunjoko (1998) surmises that though financial savings increased this did not translate to investments. The subsequent latitude by financial institutions to determine the interest rates given some bounds have produced poor results. Reasons for this are not farfetched as banks avoided long term loans and become risk-averse, preferring short-term loans with good liquidity prospects to loans for development oriented projects and real investments.

Ige (2008) mentions the irreducible role of the government in the process of governance and public financial management. Where the government has made investment, it is in projects that do not crowd in other investments though the government may have borrowed from the financial system to execute such investment. The contention is that the government should provide necessary infrastructure for the enhancement of the life of the individual members of the society and encourage private entrepreneurship. This would pave the way for entrepreneurs to venture successfully into various production outlets. Obadan (1994) tends to support this view with the recommendations for a freely floating exchange rate for the domestic currency. On the same issue Uremadu (2008) recommends the reduction in exchange rate distortions and misalignments. This would most likely increase the inflow of foreign funds into the economy and increase capital formation through the increase in real investment in the industrial sector of the economy. Domestic sources of capital to finance investments in Nigeria have been empirically determined to be public and private and any unit may borrow or save to meet their investments requirements since the immediate source of investments is savings (Nnanna, 2004). The other determinants include savings, consumption of fixed capital and capital transfers from the rest of the world. Uchendu (1993), Soyibo (1994), and recently Nwachkwu and Odigie (2009) believes that domestic savings have not metamorphosed into

domestic investment in the country for reasons adduced to preference for liquidity and type of balance sheet structure preferred by the domestic deposit money banks (DMBs).

## 3 Methodology and Sources of Data

The study adopts a modified version of the Heim (2008) model mentioned in the literature as the variables that affect domestic investment the most in Nigeria. For lack of data and short span of the available ones, some variables are omitted. Reasons and justification for the inclusion of the variables (and some other ones for capital flight) adopted in this study are set out below.

Investment is a function of:

$$Invt = f \ (\alpha_0 t \ \beta_i \ Xi \ \beta_2 X_2 \ \beta_3 \ X_3...\beta_n X_n) \tag{1}$$

$$INVT = (AVEXRATE, \ FSAVS, \ PSBR, \ RGDP, \ ALSI) \tag{2}$$

$$INVT = \alpha + \beta_1 AVEXRATE + \beta_2 FSAVS + \beta_3 PSBR + \beta_4 RGDP + \beta_5 ALSI... + \mu \tag{3}$$

Domestic investment *is* a function of *average exchange rates, financial savings*, *public sector borrowing requirements, real gross domestic product* and s*tock exchange market index respectively.* The original variables determining domestic investment in Nigeria can now be taken to include the investment done on the capital market as it has assumed a proportion that is hard to ignore.

Capital flight regression is thus modelled as follows

$$CAPF \ (WB) \quad f \ (\alpha_0 t \ \beta_i \ Xi \ \beta_2 X_2 \ \beta_3 \ X_3...\beta_n X_n) \tag{1}$$

The regression notations is substituted to read

$$CAPF \ (WB) \ f \ \alpha_0 + \beta Avexrate + \beta Kaopen + \beta Invest + \beta IntDiff + \beta Fsavs + \beta Reserv + \mu \tag{2}$$

The logged version of the model is as follow

$$LogCAPF = \alpha_0 + \beta_1 LogAvexrate + \beta_2 LogKaopen + \beta_3 LogInIntdiff + \beta_4 LogInvt + \beta_5 LogFsavs + \beta_6 LogReserves + \mu \tag{3}$$

Where *CAPF (WB)* is total capital flight by World Bank estimates, *Avexrate* is the average nominal exchange rate, *Invest* is the investment per year *Intdiff* is the interest rate differential *Fsavs* is the financial savings *Reserv* is foreign reserves *μ* is error term. The *Log* represents the log transformation of the variables.

The model below tests the long run relationship and the equilibrium of the variables. This follows Ayadi (2008).

$$\Delta CAPF \ (WB) = \alpha_0 + \beta_1 \Delta Avexrate_{t-1} + \beta_2 \Delta Kaopen_{t-1} + \beta_3 \Delta Inves_3 + \beta_4 \Delta Intdiff + \beta_4 \Delta Fsavs + \beta_5 \Delta Reserv + \beta_6 \Delta ECM_{t-1} + \varepsilon_t \tag{3a}$$

and the error correction mechanism is as below:

$$ECM_{t-1} = [CAPF_{t-1} - \beta_0 - \beta_1 Avexrate_{t-2} - \beta_2 Kaopen_{t-1} - \beta_3 Intdiff_{t-1} - \beta_4 invest_{t-1} - \beta_5 Fsavs_{t-1} - \beta_6 Reserv] \tag{4a}$$

where *INVT, Avexrate, FSAVS, PSBR, RGDP* and *ALSI* represent Investment, average exchange rate, financial savings, Public sector borrowing requirement and All Share Price index, respectively. The variables were subjected to Augmented Dickey Fuller (ADF) and Hadri panel unit roots analyses to test their stationary. OLS regressions were initially employed.

The following are the sources of the data used in this study which encompasses the period from1970 to 2007:

a. From *International Financial Statistics* CD-ROM (May 2008), Average Exchange rate (*avexrate*) is obtained, which is supported by other sources such as *Central Bank of Nigeria's Statistical Bulletin* of various issues.

b. From the IMF's International Balance of Payments, External Assets and liabilities position were obtained.

c. From *World Economic Information* database WEOI of the IMF, data on Real Gross Domestic Product per capita was obtained.

d. *Kaopen* for all countries including Nigeria was made available with permission to use from Professors H. Ito and M. Chinn of the Portland State University and University of Wisconsin and National Bureau of Economic Research (NBER) of the United States.

e. Other variables are from *Central Bank of Nigeria Statistical Bulletin* (2008), and where needed were translated into foreign currency.

### 3.1 The Rate of Exchange

The divergence between official and parallel rates leads to premium and is the element of risk that is most discussed in capital flight. Parallel market rate is the unofficial rate which is more market-driven and more expensive than the official rate, but more freely available. The Parallel Market Rate presents a ready market price to exchange naira to currency at a higher rate than the official rate, which exercises more control through documentations. The average rate of exchange (*Avexrate)* is used in its absolute form in the various estimations for compatibility with other variables in the study. Also as a determinant of investment, its stability helps in reducing the risks in the macroeconomic variables of the country. Nigeria foreign exchange market moved from fixed to floating exchange rate regime in September 1986. The Central Bank of Nigeria at various times had changed the mode of operation of the market and adopted different auction methods and processes aimed at arriving at the rate of exchange to be used in the economy. This has changed from autonomous, interbank, Dutch auction to Modified or Wholesale Dutch auction.

### 3.2 Public Sector Borrowing Requirements

This has often constituted a major problem for the Central bank of Nigeria to manage each time the government overshoots its budget by borrowing from the Deposit Money Banks to meet its expenditure requirements. Sources of deficits include borrowings from the banking sector and financing from the financial system. Its effects on crowding out other of investments borrowing makes it important in the functions and drivers of investment in Nigeria. The expected sign of the variable is negative with the understanding that other alternative investment is crowded out by the resort to the use of resources from the financial system to power government expenditure. The variable is engaged only in domestic investment regression.

### 3.3 Financial Savings

The savings accumulated by economic units in the country do help in the investment made by the various units. *FSAVS* is the resources deposited by the units and this is available through financial intermediation for the various needs of these differing units. It is one of Tobin's fundamental determinants of investment. This is the total quantum of all the savings in the bank and non-bank financial institutions in the financial system. The institutions range from the deposit money banks, primary mortgage institutions, and others financial institutions.

### 3.4 Gross Domestic Product

The use of the GDP is premised on the fact that it is the figure that gives the total value of services and products produced by the economy over a particular period. Many measurements of the variable include the *current* which measures in an inflated manner. The deflated *Real Gross Domestic Product* (*RGDP*) is preferred because it is the annual percentage of constant price GDP at year-on-year changes.

### 3.5 All Share Price Index

The investment in capital market is the purchase or sale of securities. It does not add to the structures on ground for further production but allows some investors who take positions to make returns. However, it is included in the regression because it is used in financing and a source of income for speculating investors. The index measures the level of capitalization of the market and it shows the level of wealth and investment in the market. The index took off with the base of 100 in 1985 and went up to reach 60,000 before the global financial crises in June 2008. It is now somewhere around 20,000.

## 4. Results and Discussions

Table 1 shows the negative constant figure is pronounced as the years go by. Investment during the later years was much less, as it tapered off. It equally shows that the public sector borrowing requirement intended to direct investment of the autonomous sector into particular areas is significant with *t* of 3.4406 beyond 0.01 levels. By this, the government often borrow to make necessary investment from the financial system, but should be better directed to finance autonomous investment, and would be best utilised in real investments. Further to Table 1 above, yearly ratio of investment to Gross Domestic Product for each of the broken period as represented graphically reveals that there has been a higher level of capital flight relative to investment in the economy in recent times. Figure 1 reveals that except for the year 1974 when capital flight ratio was higher than investment ratio, all the other years had a

higher level of domestic investment. Investment (*DINVT*: dollar translated investment) committed over the years are higher up to 1988, which subsequently reduced from 1992 till in the year 2006, when there was a higher level of capital flight.

The role of the *avexrate* is instructive as the rate of exchange is a significant inducement for investment in the domestic economy. The relationship between the rates of exchange and investment is positive and significant with $t$ of 4.531. The lead and lag factor is a good reason for investors to take positions on domestic investment while the stable rates of exchange induces foreign investment into the economy. The all share index *ALSI* variable indicates the importance of financial investment in the economy and is significant at $t$ of 2.2606, which is beyond 0.05 level of significance. Financial investment in the economy is not directly a form of capital formation though its impact on the wealth of the investor cannot be ignored.

*Financial savings* is significant beyond 0.01 with the $t$ of 2.7900 which conforms to theory that the available savings propel growth of domestic investment in the economy in the financial system. The relationship is positive as well. The estimation result for *PSBR* is negative beyond 0.05, which indicates the higher level of borrowing from the financial system by the government had resulted in less investment during the period. It equally proves the theory that *PBSR* crowds out private investment right. It also indicates that less autonomous investments were made in the economy while the exchange rate shows a direct relationship, indicating that a higher the rate of exchange could increase domestic investment made during the period. The figure of 2.7034 is significant beyond 0.05. With the test, the *PSBR* is highly significant beyond 0.01 with a $t$ of 3.324. The results discussed above adequately explain the investment scenario where the $R^2$ is 97% and less than 3% of the investment can be adduced to external factors. The overall statistic reliability shows $F$ test figure of 150.999.

Investment in the domestic economy has low coefficients was not significant at any level. The logged variables performed better as the coefficients were higher. The $t$s are low at -0.505 to -0.210. The logged capital flight independent variables indicate a negative relationship in the regression showing the domestic investment reduces as capital flight increases. The co-integrating equations show that the $t$s are low as well, but negative. The results are more exemplified by the Paired Sample tests (Table 2). Capital flight and investment in comparison clearly show a negative sign with a highly significant $t$ statistic at -3.021, which is significant beyond 0.01 level.

The overall implication of the results of the hypotheses is that outflows of capital indicate that the environment is not suitable for accommodating domestic investment and sustaining it. Since domestic savings is negatively related to capital flight, the root of investment is impaired and there is difficulty in sourcing capital for investment. The effect of the real gross domestic product in the investment process indicates that inverse relationship exists between the two variables. This shows that Nigerian investment process is not significantly benefitting the *RGDP* or there is insufficient investment to significantly impact the *RGDP*. This shows that investment dwindled over the years. The inference drawn from this is that few individuals and institutions carry out actual capital flight activities in the economy. While it is established that the premium on the parallel market rate is a significant cause of capital flight: this implies that a policy to depreciate the rate of exchange below the equilibrium level may increase capital flight and may be hurtful to the economy generally. Since market determined exchange rate is positively related to increase in investment rate in the economy, the exchange rate management process is important to the resolution of the problem.

The correction term shows that capital flight out of the country is not significantly influenced by the exchange rate. This calls for the need to provide a good and conducive investment environment for both foreign and domestic investors. The relationship between investment and capital flight is interesting in the correction mechanism estimates, as *a priori* expectation was a high $t$. This is an indication that higher investment may result in decrease in capital flight, and vice versa. This should be expected with the increase in foreign investment in the economy and further globalisation. The significance of this is that the more the investment undertaken in the economy, the less the capital available to transfer abroad. The issue here is the total factor productivity (TFP) allow free mobility of capital to be of benefit to the economy. The resolution of the problem here is continuous undertaking of autonomous investment in the domestic economy to crowd in other investment and make the environment more investment friendly for both foreign and domestic investors. This is required in the short to medium term.

The results are more exemplified by the Paired Sample tests. Capital flight and investment when compared, clearly shows a negative sign with a highly significant $t$ statistic. At -3.021 the variable is highly significant beyond 0.01 level. The indication that capital flight increases with negative effect on the domestic investment is proved with the result. Since the model is anchored on the regression and the VECM estimates, it is difficult to reject the null hypothesis that capital flight has insignificant negative impact on domestic investment in Nigeria.

Investment in the domestic economy has low coefficients in the regressions that was run and was not significant at any level. The logged variables performed better as the coefficients were higher. The *t*s are low at -0.505 to -0.210. The logged capital flight independent variables indicate a negative relationship in the regression showing the domestic investment reduces as capital flight increases. The co-integrating equations show that the *t*s are low as well but negative for capital flight.

The essence of cointegration test is to find a long run relationship between the variables in the regressions after ensuring that the variables are of the same order to avoid spurious regression. The regressions that have been estimated employed variables that had been tested for stationarity, though some have very low coefficients but are nonetheless not plagued with the stationarity problems..

*4.2 Vector Error Correction Estimates*

The study here assumes a year lag in the variables. The vector error correction (VEC) process helps to observe the convergence in the long run as earlier revealed by the co-integration test. The error correction term has the expected negative sign and is significant. The general significance of the independent variables is shown by the $R^2$ 0.80 with other factors accounting for the 0.20. The sum square of errors is low signifying that the errors are minimized. From the above independent variables of *avexrate*, interest differentials become less significant. Reserves and financial savings are significant at 1% level as the *t*s are all above 3. Finally, the rate or speed of adjustment is high at 69.8 or 70% among the variables. The effect of this is that the rate of adjustment will enable capital flight the variables to realign. The roles of the variables are reduced over the years as capital flight reduces. However, the most affected of the endogenous variables is the domestic savings and external reserves in the economy. The reality is that the significant independent variables determine the long run relationship between them and capital flight. Investment is not significant with the negative *t* statistic of -0.378 but the external reserves is at 4.327 (0.01 percent), same as financial savings at 7.41. External reserve is negative in the long-run, implying that capital flight has a significant negative impact on external reserves and also negative with aggregate savings in the country. The implication of this is that these are the variables of interest for the policymakers to deal with in order to put an end to capital flight and encourage investment.

## 5. Recommendations and Conclusions

The first point to address is to encourage domestic investment by commitment to autonomous investment (e.g. public sector borrowing, directed at infrastructural development). This will induce and power the domestic investment process in order to encourage and retain capital that would otherwise flee out of the country. This would then encourage domestic savings, which in due course will promote further domestic investment. Since autonomous investments have dwindled sharply and domestic investment is insufficient to match up capital flight, it becomes important to bring the policy-makers to encourage the increase of autonomous investment in the economy. In the current era of reduced investment of the government on infrastructure (the main situate of autonomous investment), it is important that the government through Public Private Partnership (PPP) encourage further investment in the various sectors. Such investment expected for the country should be made in the areas that encourage further development of the economy (those areas that improve the country's collateral benefits).

Encouraging long-term savings in an economy where income is low is a challenge. A short-term measure is the pension funds, which may be used as guarantee for the funding of investments in the economy. The government is currently using this to meet its fiscal deficits. A reliable method of encouraging foreign direct investment is through good environment, which is lacking in the country. Another way covered in this study is the use of market determined exchange rates and optimal management of the exchange regime. The efficient management of the external reserves will guarantee liquidity and confidence in the environment by foreign investors.

If the government must borrow, it must be used for the purpose of investment capable of inducing other investments. The public sector borrowing requirement was significant but and would become less so. This source of funding public expenditure has reduced considerably. Banks see a form of guarantee in government borrowings. This has twofold effects on the financial system. Firstly, the possibility of default by the government is real, as it may not respond swiftly as occasion demands to pay back borrowed money. This has its attendant effects on liquidity in the banking system. Secondly, the entrance of the government into the banking system to borrow crowds out and out-competes the private sector, which needs the funds a lot more.

Encouraging the banks to provide other investment outlets that yield higher than money market returns and a guarantee fund or insurance by the government to investors of a significant value would be welcome in reducing the rate of resident capital flight out of Nigeria. Further deepening of the banking system to be more innovative in creation of products that meet the desires of high profile clients would assist in ensuring that capital is invested

domestically rather than taken out of the economy. This calls for improvement in deposit guarantee management of the Nigerian Deposit Insurance Corporation (NDIC) to act promptly.

This paper has attempted to investigate the impact of capital flight on domestic investment in Nigeria. It goes through the literature to discover that capital flight and domestic investment are financial flows that flow in unrelated directions. It discovers that capital flight does not significantly affect investment, though the relationship is negative. This shows that there has been little domestic investment done through the years or much capital flight has taken place. The paper recommends the increase in commitment to autonomous domestic investment.

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Table 1. Regression Results on Investment

|  | Coefficients | Std Errors |
|---|---|---|
| Varaibles | -82330.45 | (-1.18975) |
|  |  |  |
| Finsavings | 162.517 | (37.18)** |
| Avexrate | 2052.25 | (195.072)*** |
| PSBR | 1.239 | (0.488)** |
| Kaopen | 11410.40 | (18531.18) |
| RGDP | -0.0379 | (0.0208)** |
| ALSI | 0.0360 | (2.2606)** |
| Caputili | -583.302 | (930.29) |
|  |  |  |
| R Squared | .976 |  |
| Adjus. R Squared | .970 |  |
| F Statistics | 276.72 |  |
| Durbin Watson | 2.22 |  |
| Observations | 37 |  |

**Note:** OLS estimates. Standard errors are in parentheses. ***, **, * denote significance at 1, 5 and 10 percent levels respectively.

Table 2.

| Paired samples | 95% Confidence Interval of the Difference | | | |
|---|---|---|---|---|
|  | Lower | Upper | *T* | Sig (2 tailed) |
| Capflit – Dfsavs | -1112.0380 | -5037.5432 | -3.174*** | .003 |
| Capflit – Dinvt | -1097.5378 | --5569.8981 | -3.021*** | .005 |

Paired Sample Results

Table 3. Johansen Multivariate Cointegration Results

| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| None* | 0.895600 | 81.34285 | 46.23142 | 0.0000 |
| ≤ 1* | 0.787186 | 55.70412 | 40.07757 | 0.0004 |
| ≤ 2* | 0.677641 | 40.75527 | 33.87687 | 0.0065 |
| ≤ 3 | 0.472975 | 23.05824 | 27.58434 | 0.1710 |
| ≤ 4 | 0.404902 | 18.68503 | 21.13162 | 0.1063 |
| ≤ 5 | 0.281111 | 11.88174 | 14.26460 | 0.1152 |
| ≤ 6 | 0.006022 | 0.217458 | 3.841466 | 0.6410 |

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) *p*-values

*(**) denotes the rejection the Null Hypothesizes at 5% (1%) significance level.

VAR is the order of 1 and is computed on the assumption of linear deterministic trend in the cointegrating equations with no trend.

Normalized CE     at 1% is:

CAPFT=-5994.07  -60.22Avexrate  +56.13fsavs  -0.849reserves  +821.70Kaopen  (5.6)  ***  (1.45)  (7.08)  ***                    (4.323)  ***
(0.88)

-0.0067invt -541.2intdiff

        (0.375)                (0.77)

Table 4. Vector Error Correction Estimates for Capital Flight in Nigeria

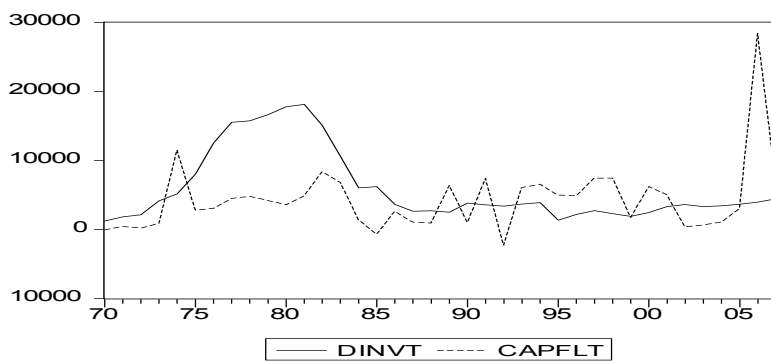| Variables | Coefficients | *t* statistics |
|---|---|---|
| Constant | -5994.07 | 5.61 |
| EC(1) term | 0.698 | 5.614 |
| D(LACPF (-1) | 0.198 | 1.131 |
| D(LAVEXRATE0 (-1) | -60.22 | -1.45. |
| D(KAOPEN) -1) | 821.70 | 0.88 |
| D(LFASV)-1) | 56.13 | 7.087*** |
| D(LRES) -1) | -0.8498 | -4.327*** |
| D(LINVT)-1) | -0.064 | -0.378 |
| D(INTDIFF)-1) | -541.21 | -0.776 |
| | | |
| R Squared | 0.80 | |
| Adj. R square | 0.74 | |
| F Statistics | 13.5 | |
| Akaike Inf. Criterion | 19.4 | |
| Schwarz criterion | 19.8 | |

**Source:** Author's Results



Figure 1. Domestic Investment and Capital Flight Ratios to Gross Domestic Product

Source: Author's Estimations