European Journal of Accounting, Auditing and Finance Research
Vol.12, No. 8, pp.,57-72, 2024
Print ISSN: 2053-4086(Print),
Online ISSN: 2053-4094(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

Investigating the Nexus Between Capital Flight and Private Savings in Nigeria

F.O. Chinyere Osunkwo[1] (Ph.D)
Department of Economics, Abia State University Uturu

Ndubuisi Eme Uguru[2]
Department of Economics, Abia State University Uturu

Roy Maduabuchi Okpara (Ph.D)[3]
Department of Economics, Abia State University Uturu

Ngwobia, Ebubechukwu Udo[4]
Department of Accounting, Abia State University Uturu

Uche Okoro Orji[5]
Department of Accounting, Abia State University Uturu

doi: https://doi.org/10.37745/ejaafr.2013/vol12n85772 Published August 25, 2024

Citation: Osunkwo F.O.C., Uguru N.E., Okpara R.M., Udo N.E., and Orji U.O. (2024) Investigating the Nexus Between Capital Flight and Private Savings in Nigeria, *European Journal of Accounting, Auditing and Finance Research*, Vol.12, No. 8, pp.,57-72

Abstract: *The Nigerian government has been grappling with the detrimental effects of capital flight. Given the country's low level of development, extreme economic uncertainties, and limited savings and domestic investment, the outflow of resources demands urgent attention. This study investigated the impact of capital flight on private savings in Nigeria, utilizing the World Bank residual approach to measure capital flight and analyzing data from 1981 to 2020, sourced from the CBN statistical bulletin and World Bank Development Indicator (WDI). The Autoregressive Distributed Lag (ARDL) bounds test approach was employed for the analysis. The findings revealed that capital flight adversely affects private savings in Nigeria. Consequently, the study recommends implementing appropriate monetary policy measures to minimize capital flight and enhance savings in the country.*

Key Words: capital flight, private savings, domestic investment, ARDL

INTRODUCTION

The term "capital flight" is a significant macroeconomic issue in many developing countries, particularly in Africa. Its implications for economic growth are substantial, as it is believed to deter investment due to the scarcity of capital caused by persistent capital flight. Analysts generally agree that the sluggish growth and ongoing balance of payment problems in most developing countries, including Nigeria, are largely due to capital flight. According to Ajayi and Ndikumana (2014), "Capital flight has truncating consequences; it poses severe constraints on growth and development by reducing growth potential, eroding or narrowing the productive capacities of the economy, slowing investment, and adversely redistributing income."

Economic growth can only occur when certain variables, such as savings and investment, are effectively mobilized. Economic theory posits an equilibrium between savings and investment, which is expected to accelerate economic growth. However, in reality, various factors can disrupt this equilibrium. Savings and investment are each influenced by factors that affect the supply of savings and the demand for investment. Capital flight depletes the economy's investible funds due to low savings. Since savings are the primary source of capital formation, a shortage of foreign aid and insufficient savings force the economy to resort to continuous borrowing to finance its projects.

According to Keynesian economics, "investment is regarded as a change in capital stock; this includes purchasing machines, inventories, and intermediate goods used in the production process," as opposed to financial investments, which involve acquiring existing shares. Keynes (1936) viewed investment as the purchase of new capital goods, such as plants, machinery, equipment, and new shares, which he termed real investment. Nwanne (2016) categorized investment into "gross and net investment." Gross investment represents total investment without accounting for depreciation, while net investment is gross investment minus depreciation due to wear and tear. Net investment is positive if gross investment exceeds depreciation, but there is disinvestment if depreciation exceeds gross investment. When net investment is zero, gross investment equals depreciation.

Savings are the portion of consumers' disposable income not spent on current consumption but reserved for future use, either for future investment or consumption. According to Keynes (1936), "the propensity to consume declines as a consumer's income increases, because their wants are gradually met as their income rises. Thus, the marginal propensity to consume (MPC) and the average propensity to consume (APC) fall as income increases." This means that consumers save a larger proportion of their income as it increases, widening the gap between income and consumption, which investment is intended to fill.

The Harrod-Domar model posits that countries must save a certain portion of their national income to achieve real investment and growth. Keynes added that investment is needed to bridge the gap between income and consumption to maintain equilibrium. Investment and savings are in equilibrium if the propensity to invest is consistently high. According to the Harrod-Domar model, a nation's economic growth level depends on its ability to save. Therefore, capital flight is assumed to reduce the available funds for savings and hinder investment.

The investment diversion theory suggests that capital flight occurs due to macroeconomic and political uncertainties in developing countries, combined with better investment opportunities abroad. These opportunities may include higher interest rates, a wider variety of financial instruments, political and economic stability, better tax rates, and the ability to maintain secret accounts to store wealth.

The figures below illustrate the interaction between savings and investment in Nigeria from 1991 to 2019. They show that when savings were low in 1991, investment was also minimal. However, starting in 2000, as savings began to gradually increase, investment also rose in response. Investments continued to increase as savings grew, indicating that a nation's level of investment, which is essential for economic growth, depends on its ability to save.

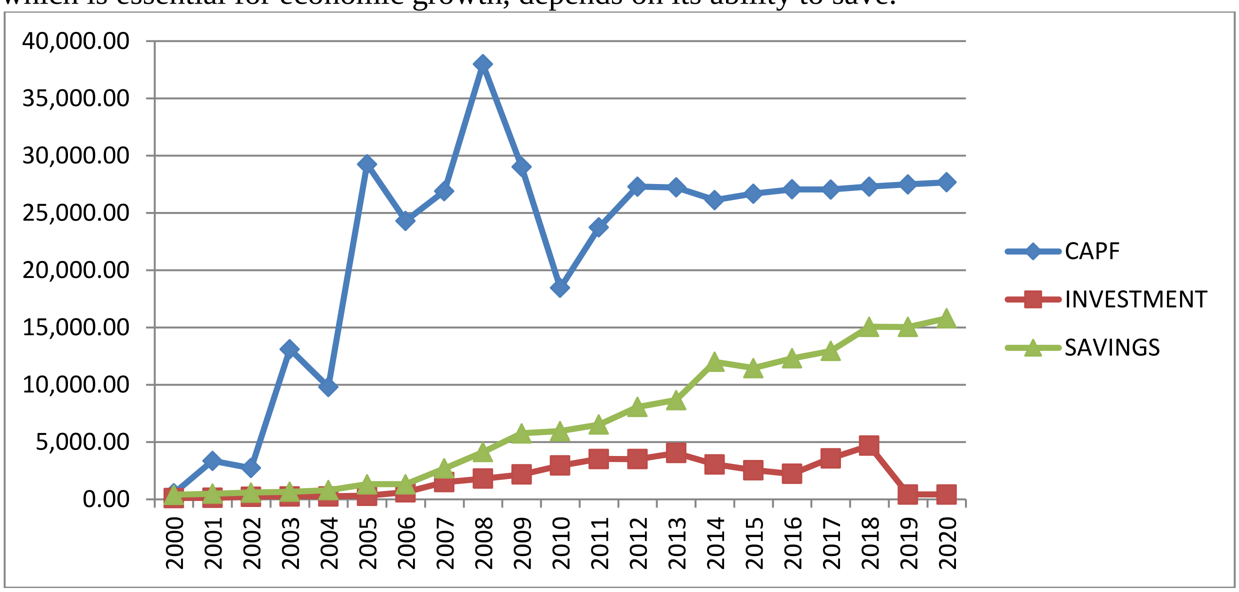

Fig.1: Capital flight, Investment and savings interactions in Nigeria.

From the graph above, private savings and domestic investment were equal from 2000 until 2007 when savings started increasing more than investment. It can be observed that both investment and savings decreased slightly between 2014 and 2016. However, while savings continued to rise, investment declined sharply in 2018 and remained stable in 2019 and 2020. The graph also shows that capital flight has been increasing rapidly, surpassing savings and investment, which confirms its negative impact on these variables. When investment and savings were low, capital flight was high. Conversely, when capital flight decreased and stabilized, savings and investment started to rise simultaneously.

There is a wealth of empirical literature on capital flight in Nigeria. Research has explored the determinants of capital flight, the mechanisms fueling it, its impact on economic growth and development, its effect on poverty and inequality, its influence on tax revenues, and its effect on external debt. Further studies have examined the impact of capital flight on agricultural productivity and the financial system. For instance, Leonard et al. (2014) studied the relationship between capital flight and exchange rate volatility in Nigeria. Usman (2014) investigated the effect of capital flight and its macroeconomic determinants on agricultural growth in Nigeria. Other studies on the determinants of capital flight and its impact on the Nigerian economy include those by Ajayi (1992, 1997), Lawanson (2007), Okoli and Akujuobi (2009), Bakere (2011), and Omviodiviokit (2002). Research on capital flight and its effects on Nigerian economic growth includes work by Gosarova (2009), Adedayo & Ayodele (2016), Igwema et al. (2018), Musibau (2017), and Orji, Ogbuabor, Kama & Orji (2020).

A study on the impact of capital flight on domestic investment was conducted by Lionel, Alfa, and Samuel (2019), while Obidike, Uma, Odionye, and Ogwuru (2015) investigated its impact on Nigeria's economic development. Effiom, Uche, Otei, and Effiong (2020) used the NARDL to test for symmetry in the response of public sector investment to capital flight in Nigeria.

This study fundamentally departs from existing research, such as that by Effiom, Uche, Otei, and Effiong (2020), Rahmon (2017), and Lionel, Alfa, and Samuel (2019), by examining the symmetric impacts of capital flight on private savings and domestic investment in Nigeria, using gross domestic product as a control variable to avoid variable omission. This paper focuses on the relationship between capital flight, private savings, and domestic investment using an autoregressive distributed lag framework for Nigeria. Section one provides the introduction, section two reviews related literature, section three details the model specification, section four presents the empirical results and discussion, and section five offers the summary and conclusion.

LITERATURE REVIEW

Theoretical Review

The Investment Diversion Thesis:

Theories of capital flight can be attributed to the work of Pastor (1989) and Ajayi (1992). The investment diversion theory suggests that capital flight occurs due to macroeconomic and political uncertainties in developing countries, coupled with superior investment opportunities abroad. These opportunities may include higher interest rates, a wider variety of financial instruments, political and economic stability, better tax rates, and the ability to maintain secret accounts for storing wealth. It is common for dishonest and corrupt government leaders to siphon scarce capital from their countries to more advanced nations. This capital becomes unavailable for investment projects in their home countries, leading to reduced investment spending, low economic growth, increased unemployment, a higher dependency ratio, and a higher death rate. These conditions

often necessitate acquiring external funding to boost the domestic economy. Unfortunately, these borrowed funds are sometimes wasted, further increasing dependency on foreign countries.
The liquidity constraint, or crowding-out effect, can also result in the deterioration of the local currency if a floating exchange rate system is in use (Ajayi, 1992). Attempts to protect the exchange rate can lead to a loss of foreign exchange reserves. This theory highlights one of the well-known negative consequences of capital flight.

Empirical literature

Orji, Ogbuabor, Kama, and Orji (2020) examined the relationship between capital flight and economic growth in Nigeria using the ARDL approach, analyzing data from the Central Bank of Nigeria's statistical bulletin for the period 1981 to 2017. Their analysis, conducted using the ARDL bounds test approach, revealed that capital flight reduces economic growth in both the short run and long run. The study also found that money supply, credit to the private sector, and domestic investment significantly impact economic growth. They recommended implementing proactive policy measures to curb capital flight and make the economy more attractive for savings and domestic investment.

Effiom, Uche, Otei, and Effiong (2020) used the NARDL method to determine the symmetry or asymmetry in the response of Nigerian public sector investment (government investment) to capital flight. Their findings indicated that capital flight has had an asymmetric effect on Federal Government investment in Nigeria over a long period.

In Nigeria, from 1980 to 2017, Lionel, Alfa, and Samuel (2019) used the Auto Regressive Distributed Lag (ARDL) econometric methodology in their study. They found that capital flight significantly and negatively impacts domestic investment in Nigeria. They suggested that curbing capital flight and attracting investments into critical sectors would strengthen the value of the naira. While several studies have investigated the effect of capital flight on economic growth and development in Nigeria using GDP as a proxy, others have focused on sectoral impacts. For example, research on the effects of capital flight on Nigerian economic growth includes works by Gosarova (2009), Lan (2009), Ameth (2014), Adedayo & Ayodele (2016), Igwema et al. (2018), Musibau (2017), Henry (2016), and Orji, Ogbuabor, Kama & Orji (2020). These studies consistently found that capital flight negatively impacts the economy's growth potential.

The impact of capital flight on the agricultural sector in Nigeria was investigated by Usman and Arene (2014), who found an insignificant but negative impact. Similarly, Uguru (2016) found evidence of an inverse relationship between capital flight and tax revenues in Nigeria. A study of particular relevance to this present study is Rahmon (2017), who examined the impact of capital flight on domestic investment in Nigeria. Contrary to theoretical expectations, Rahmon's study found that capital flight has a statistically significant positive relationship with gross domestic investment in Nigeria. This result suggests that as capital flight increases, domestic investment also increases, which is indeed a curious finding.

European Journal of Accounting, Auditing and Finance Research
Vol.12, No. 8, pp.,57-72, 2024
Print ISSN: 2053-4086(Print),
Online ISSN: 2053-4094(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

Due to this theoretical inconsistency and the realization that, to the best of our knowledge, no study has yet examined the nexus between flight capital, private savings, and domestic investment in Nigeria, the present study aims to fill this gap. While Effiom, Uche, Otei, and Effiong (2020) studied the asymmetric impact of capital flight on domestic investment, this study seeks to address the theoretical inconsistency found in Rahmon's (2017) research. It is argued that domestic investment, as considered in this study, excludes private sector investment, given that much of the capital flight in Nigeria targets public resources but directly impacts private savings.

METHODOLOGY

Measurement of Capital Flight

For this study, we adopted the World Bank residual (broad) method to measure capital flight. This approach calculates capital flight by comparing the sources of funds with their uses. The sources of funds include all net official flows, which consist of net increases in foreign debts of the public sector and the net flow of Foreign Direct Investment (FDI). The uses of funds relate to additions to reserves and the current account deficit. Algebraically, the World Bank residual approach is measured as: Δ EXD + NFDI – (CAD + Δ FER). Data were sourced from the World Bank Development Indicator and the Central Bank of Nigeria statistical bulletin.

Model Specification

The functional form of the models is specified thus;

For model one

$$INVE = f(CAPF, \text{SAV}, GDP) \quad (1)$$

For model two

$$SAV = f(CAPF, \text{INVE}, GDP) \quad (2)$$

CAPF represents capital flight, calculated as the sum of the net increase in external debt, net inflow of foreign direct investment, current account balance, and net foreign reserves. INVE denotes domestic investment, SAV stands for private savings, and GDP represents gross domestic product, which is used as a control variable to prevent omitted variable bias in the model. The econometric expression of equations (1 and 2) is assumed to take a linear form:

$$\text{INVE} = \psi_0 + \psi_1\text{CAPF} + \psi_2\text{SAV} + \psi_3\text{GDP} + \mu_1 \quad (3)$$

$$\text{SAV} = \delta_0 + \delta_1\text{CAPF} + \delta_2\text{INVE} + \delta_3\text{GDP} + \mu_2 \quad (4)$$

The log-linear forms of equations (3 and 4) are represented as:

$$LOG(INVE) = \delta_0 + \delta_1 LOG(CAPF) + \delta_2 LOG(SAV) + \delta_3 LOG(GDP) + \mu_1 \quad (5)$$

$$LOG(SAV) = \delta_0 + \delta_1 LOG(CAPF) + \delta_2 LOG(INVE) + \delta_3 LOG(GDP) + \mu_2 \quad (6)$$

In equations 3 through 6 above, ψ_0 and δ_0 represent the intercepts indicating domestic investment and savings when the explanatory variables are zero. Coefficients ψ1 to ψ3 and δ1 to δ3 correspond to the explanatory variables, reflecting their impact on the dependent variable. μ1 and μ2 denote independently and identically distributed (iid) stochastic error terms, included to account for the influence of variables not present in the models. Consequently, the generalized form of the ARDL (p,q) models is specified as the following equations:

$$InINVE_t = \sum_{i=1}^{p} \alpha_i InINVE_{t-1} + \sum_{j=0}^{q} \beta_j \ln CAPF_{t-j} + \sum_{j=0}^{q} \varphi_j GDP_{t-j} + \sum_{j=0}^{q} \gamma_j SAV_{t-j} + \varepsilon_{1t} \text{.............(7)}$$

$$InSAV_t = \sum_{i=1}^{p} \alpha_i InSAV_{t-1} + \sum_{j=0}^{q} \beta_j \ln CAPF_{t-j} + \sum_{j=0}^{q} \varphi_j GDP_{t-j} + \sum_{j=0}^{q} \gamma_j INVE_{t-j} + \varepsilon_{2t} \text{.............(8)}$$

Unit Root Test

To thoroughly investigate the data generating process, we initially assessed the time series properties of the model variables using the Phillip-Perron (PP) unit root test.

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{j=1}^{k} \alpha_j \Delta Y_{t-1} + \mu_t \text{...................(9)}$$

Where Δ denotes the first difference operator and is a random error term that is iid, k represents the number of variables. The unit root test is performed under the null hypothesis $\alpha = 0$ against the alternative hypothesis $\alpha < 0$. After computing a value for the test statistics, we compare it with the critical values for the Dickey-Fuller Test and the Phillip-Perron (PP) test. If the test statistic exceeds the critical value (in absolute terms) at the 5% or 1% significance level, the null hypothesis of $\alpha = 0$ is rejected, indicating no unit root is present. If the variables are non-stationary at their level form and are integrated of the same order, this suggests evidence of co-integration in the model.

Co Integrated Equation The bounds test for co integration, we specify the conditional ARDL (p, q) for model1 and 2 as follows:

$$\Delta INVE_t = \sum_{i=1}^{p} \alpha_i INVE_{t-1} + \sum_{j=0}^{q} \beta_j CAPF_{t-j} + \sum_{j=0}^{q} \beta_j SAV_{t-j} + \sum_{j=0}^{q} \beta_j GDP_{t-j}$$

$$\sum_{i=1}^{p} \alpha_i \Delta INVE_{t-1} + \sum_{j=0}^{q} \beta_j \Delta CAPF_{t-j} + \sum_{j=0}^{q} \beta_j \Delta SAV_{t-j} \sum_{j=0}^{q} \beta_j \Delta GDP_{t-j} + \varepsilon_{1t} ....(10)$$

$$\Delta SAV_t = \sum_{i=1}^{p} \alpha_i SAV_{t-1} + \sum_{j=0}^{q} \beta_j CAPF_{t-j} + \sum_{j=0}^{q} \beta_j INVE_{t-j} + \sum_{j=0}^{q} \beta_j GDP_{t-j}$$

$$\sum_{i=1}^{p} \alpha_i \Delta SAV_{t-1} + \sum_{j=0}^{q} \beta_j \Delta CAPF_{t-j} + \sum_{j=0}^{q} \beta_j \Delta INVE_{t-j} \sum_{j=0}^{q} \beta_j \Delta GDP_{t-j} + \varepsilon_{2t} ....(11)$$

The bound test hypothesis asserts that "in the long run, the coefficient equation is equal to zero, whereas the alternative hypothesis posits the opposite." We can only specify the short-run model if we accept the null hypothesis as stated in the equations for objectives 1 and 2 above. However, if the null hypothesis is rejected, we state the error correction models (ECM) as outlined in the following equations for objectives 1 and 2, respectively.

The variables in equations 12 and 13 are defined as earlier mentioned. The ECT in these equations represent the respective error correction terms for models 1 and 2, while the coefficient of ECT (Ψ) indicates the speed of adjustment, and Δ denotes the first difference operator.

$$\Delta INVE_t = \sum_{i=1}^{p} \alpha_i INVE_{t-1} + \sum_{j=0}^{q} \beta_j CAPF_{t-j} + \sum_{j=0}^{q} \beta_j SAV_{t-j} + \sum_{j=0}^{q} \beta_j GDP_{t-j}$$

$$\sum_{i=1}^{p} \alpha_i \Delta INVE_{t-1} + \sum_{j=0}^{q} \beta_j \Delta CAPF_{t-j} + \sum_{j=0}^{q} \beta_j \Delta SAV_{t-j} \sum_{j=0}^{q} \beta_j \Delta GDP_{t-j} + \Psi ECT_{j-1} + \varepsilon_{1t} ....(12)$$

$$\Delta SAV_t = \sum_{i=1}^{p} \alpha_i SAV_{t-1} + \sum_{j=0}^{q} \beta_j CAPF_{t-j} + \sum_{j=0}^{q} \beta_j INVE_{t-j} + \sum_{j=0}^{q} \beta_j GDP_{t-j}$$

$$\sum_{i=1}^{p} \alpha_i \Delta SAV_{t-1} + \sum_{j=0}^{q} \beta_j \Delta CAPF_{t-j} + \sum_{j=0}^{q} \beta_j \Delta INVE_{t-j} \sum_{j=0}^{q} \beta_j \Delta GDP_{t-j} + \Psi ECT_{j-1} + \varepsilon_{2t} ....(13)$$

RESULTS AND DISCUSSIONS

Pre-estimation Tests

The pre-estimation tests conducted include the Phillip Perron (PP) unit root test, which was performed to assess the stationarity of the variables in the series. A bound test for cointegration

European Journal of Accounting, Auditing and Finance Research
Vol.12, No. 8, pp.,57-72, 2024
Print ISSN: 2053-4086(Print),
Online ISSN: 2053-4094(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

was also carried out to determine if there is a long-run relationship between the variables in the series. The optimal lag selection was determined using the Akaike information criterion.

Unit Root Test

In this study, the Phillip Perron (PP) unit root test was utilized to examine the time series properties of the model variables. The null hypothesis posits that the variable under investigation has a unit root, while the alternative hypothesis suggests it does not. The decision rule is to reject the null hypothesis if the PP statistic value exceeds the critical value at the selected level of significance (in absolute terms). These results are presented in Table 4.1 below.

Table 4.1: Philip Perron unit root test

Philip Perron statistic						
Variables	**Level**	**1st Difference**	**Critical Values**	**Order of Integration**	**Prop Value**	**Decision**
lnINVE	-3.388865*		1% -2.627238 5% -1.949856* 10% -1.611469	*I*(0)	0.0012	Reject H_0
lnCAPF	-1.499512	-7.616274*	1% -3.67322 5% -2.967767* 10% -2.622989	*I*(1)	0.0000	Reject H_0
lnSAV	-0.701278	-4.342959*	1% -3.615588 5% -2.971145** 10% -2.607932	*I*(1)	0.0014	Reject H_0
lnGDP	-1.834706	-3.124393*	1% -3.615588 5% -2.941145* 10% -2.609066	*I*(1)	0.0331	Reject H_0

*Author's computation (*shows the variable is stationary at 5% level of significant)*

The results presented in Table 4.1 show that the variables exhibit stationarity at different orders (i.e., *I*(0) and *I*(1)). From the table, the log of investment (lnINVE) is stationary at the level I(0) since its PP value is less than the critical value at the 5% level of significance. However, the log of savings (lnSAV), log of capital flight (lnCAPF), and log of Gross Domestic Product (lnGDP) were found to be stationary after the first difference, as their PP values were less than the critical values at the 5% level of significance. The null hypothesis of no unit root was accepted for lnINVE at the level form but was rejected after the first difference. Conversely, the null hypothesis of no unit root was rejected for lnCAPF, lnSAV, and lnGDP at the level. Therefore, we conclude that the variables under investigation are integrated at the level (*I*(0)) and after the first difference (*I*(1)), indicating a combination of orders of integration.

Bound Testing Results for Model One

The bound test results in Table 4.2 indicate that the F-statistic value exceeds the upper bound value of the Pesaran test statistic. This implies rejection of the null hypothesis, which states that "there is no long-run relationship." Therefore, there is a cointegration relationship between the explained variable (INVE) and the regressors (CAPF, SAV, GDP).

Table 4.2: ARDL Bound test result for Model One

Null hypothesis: No long run relationship exists			
f- statistic	12.44295		K = 3
Critical Value Bounds			
Significance	I0 Bound	I1 Bound	Decision
1%	2.72	3.77	cointegrated
5%	3.23	4.35	cointegrated
2.5%	3.69	4.89	cointegrated
10%	4.29	5.61	cointegrated

Authors computation using E-view

For model two the bound test result is presented below

Table 4.3: ARDL Bound test result for Model One

Null hypothesis: No long run relationship exists			
f- statistic	6.177563		K = 3
Critical Value Bounds			
Significance	I0 Bound	I1 Bound	Decision
1%	2.72	3.77	cointegrated
5%	3.23	4.35	cointegrated
2.5%	3.69	4.89	cointegrated
10%	4.29	5.61	cointegrated

Authors computation using E-view

As shown in the bound test results in Table 4.2, the F-statistic value is above the upper bound value of the Pesaran test statistic. This implies the rejection of the null hypothesis, which states that "there is no long-run relationship." Thus, there is cointegration between the explained variable (SAV) and the explanatory variables (CAPF, INVE, GDP).

Result of Model Estimation

The Autoregressive Distributed Lag model was used to estimate the model, as shown in Table 4.4. The table presents the short-run and long-run coefficients for model one (1). The first column of the cointegrating form of the results below indicates that a 1% increase in capital flight will decrease domestic investment by 0.13% in both the short run and the long run..

European Journal of Accounting, Auditing and Finance Research
Vol.12, No. 8, pp.,57-72, 2024
Print ISSN: 2053-4086(Print),
Online ISSN: 2053-4094(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

Table 4.4: Result of ARDL cointegration (short-run) and long-run form for model one

Cointegrating Form				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LNCAPF)	-0.126211	0.143930	-0.876889	0.3880
D(LNGDP)	3309.96	9965.3640.332146		0.7423
D(LNGDP(-1))	24312.88111075.10		2.195274	0.0366
D(LNSAV)	13573.31	4657.69	2.914173	0.0069
CointEq(-1)	-0.967796	0.172686	-5.604379	0.0000
Cointeq = INVE - (-0.1304*CAPF -15309.3891*LNGDP + 14024.9899 *LNSAV + 45372.3813)				
Long Run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LNCAPF	-0.130411	0.145459	-0.896546	0.3776
LNGDP	15309.38908	4481.621499	-3.416038	0.0020
LNSAV	14024.98994	4347.653199	3.225876	0.0032
C	45372.38139	13343.749675	3.400272	0.0020

Author's computation

This result aligns with economic theory, which suggests that capital flight reduces investable capital by lowering savings, thereby hindering investment. Keynes noted that investment is necessary to bridge the gap between income and consumption for equilibrium. The result supports Effiong et al. (2020), who also found an inverse relationship between capital flight and domestic investment in Nigeria. Additionally, the study shows a positive and significant relationship between private savings, economic growth, and domestic investment in Nigeria during the study period. The coefficient of the co-integrating equation (represented by ECT in the model) is correctly signed at -0.967796, indicating that about 97% of any disequilibrium caused by capital flight is corrected within one period. The probability value is 0.0000, proving the coefficient is highly significant. Table 4.5 shows the regression results for the short-run and long-run coefficients for model two (2) below.

Table 4.5: Result of ARDL cointegration (short-run) and long-run form for model Two

Cointegrating Form				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LNCPF)	-0.000008	0.000002	-4.676920	0.0000
D(LNGDP)	0.271795	0.048076	5.653496	0.0000
D(LNINVE)	0.000013	0.000003	4.252147	0.0002
CointEq(-1)	-0.269546	0.044354	-6.077097	0.0000
Cointeq = LNSAV - (-0.0000*LNCPF + 1.0083*LNGDP + 0.0000*LNINVE -2.6052)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNCPF	-0.000030	0.000006	-4.716601	0.0000
LNGDP	1.008343	0.032463	31.061482	0.0000
LNINVE	0.000050	0.000012	4.167386	0.0002
C	-2.605196	0.298867	-8.716909	0.0000

Author's computation

The cointegrating form of the results presented above shows that a 1% increase in capital flight decreases private savings by 0.008% in the short run and by 0.0003% in the long run. This finding aligns with the Harrod-Domar model, which posits that savings are essential for achieving real investment and growth. Savings stimulate investment, accelerating economic growth; however, when capital exits a country through various channels, it diminishes the ability and desire to save. The results also indicate that domestic investment and gross domestic product are positively related to private savings.

The error correction term (ECT) indicates the speed at which the relationship returns to equilibrium. The ECT coefficient is expected to be negative and significant. A highly significant ECT (-1) confirms a stable long-run relationship. Table 4.5 shows that the ECT (-1) coefficient is -0.27 and highly significant, suggesting that 27% of any deviation from the long-run path is corrected within a year. This implies that the adjustment happens rapidly.

Post Estimation Test

The diagnostic tests results show that the regression models passed all checks for serial correlation (Breusch-Godfrey LM test), heteroskedasticity (Breusch-Pagan-Godfrey test), and normality of errors (Jarque-Bera test), as presented in Table 4.6 below.

Table 4.6A: Coefficients Diagnostic Test Results for model one

Diagnostic Test	X^2 statistics	probability
Breusch-Godfrey Serial Correlation LM Test	0.682338	0.5146
Breusch-Pagan-Godfrey Heteroskedasticity Test	1.127652	0.3730
Jarque–Bera test	1.702950	0.4248

Author's computation

Table 4.6B:Coefficients Diagnostic Test Results for model one

Diagnostic Test	X^2 statistics	probability
Breusch-Godfrey Serial Correlation LM Test	0.552264	0.5818
Breusch-Pagan-Godfrey Heteroskedasticity Test	0.283439	0.7550
Jarque–Bera test	1.769499	0.4128

Author's computation

The results in Tables 4.5 and 4.6 show that the F-statistics have a probability greater than 0.05. Thus, we reject H0 and conclude that there is no serial correlation in the models. The null hypothesis of homoscedasticity is accepted since the P-value of the Obs*R-square is higher than 0.05, indicating that the variance of the error term is constant. The Jarque-Bera statistic shows that the error term is normally distributed because it is not significant at the 5% level. Therefore, we conclude that the residuals are normally distributed.

Figures 3 and 4 depict the Cumulative Sum of Squares (CUSUMSQ) test, which assesses the stability of long-run dynamic estimates over time. The results show that the coefficients are stable, as the CUSUMSQ statistic plots fall within the critical bands at a 5% confidence interval for parameter stability.

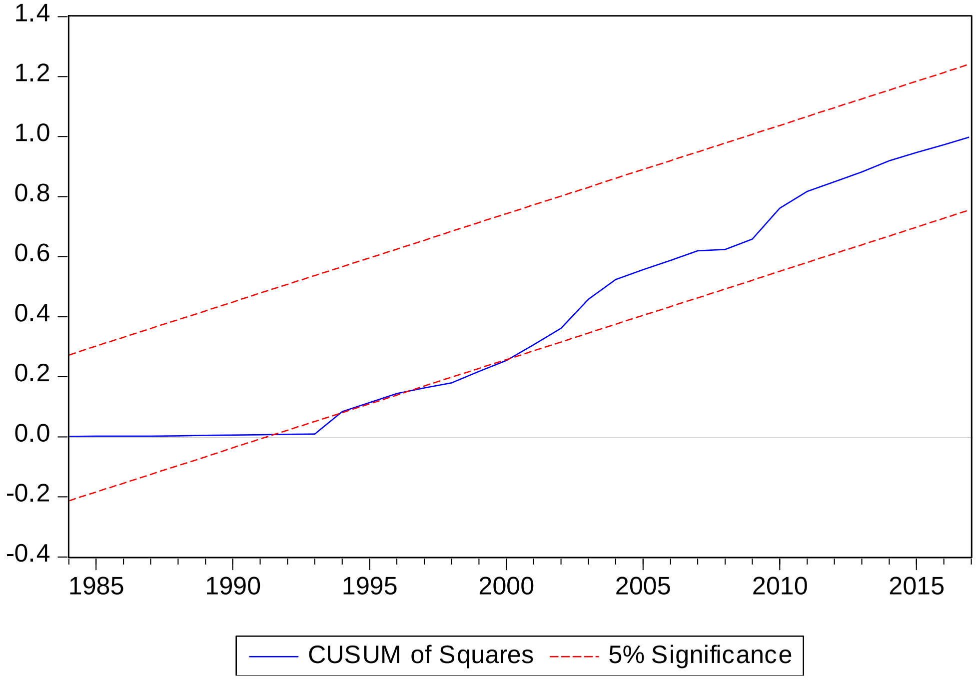

Fig. 3A Graphical show of result

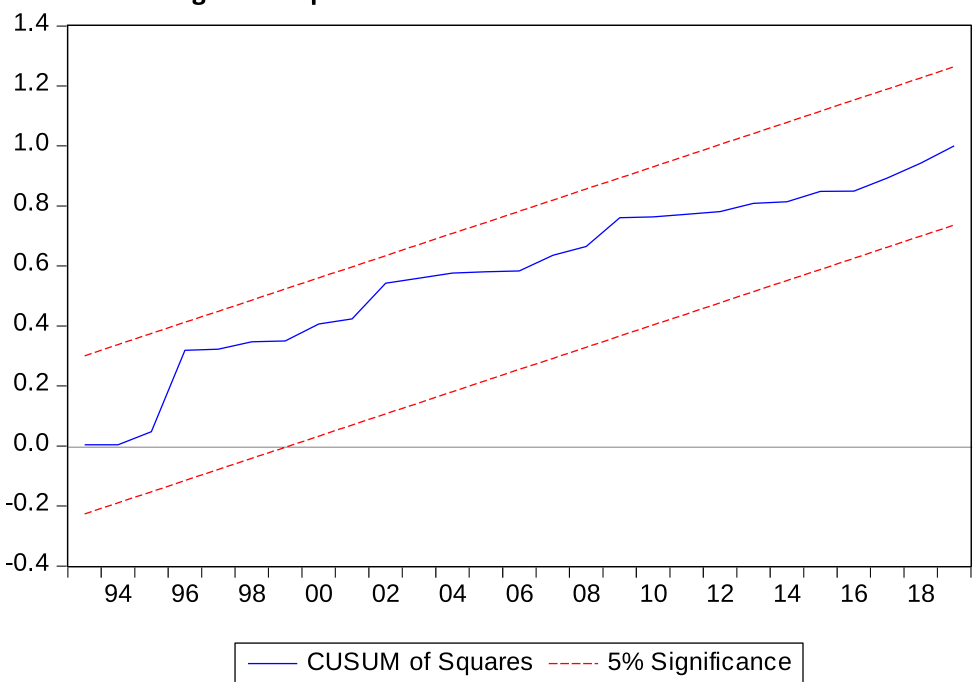

Fig. 3B Graphical show of result

CONCLUSION AND RECOMMENDATION

The study sought to assess the distinct effects of capital flight on private savings and domestic investment in Nigeria. It utilized variables such as capital flight, measured by the World Bank residual approach. The behavior of these variables justified the use of the ARDL model. Results from the bound test showed a long-term relationship among the model's variables. The findings indicated that capital flight has a negative impact on private savings and domestic investment in Nigeria. The study suggests that implementing suitable monetary policy measures to reduce capital flight will enhance savings and domestic investment in the country.

REFERENCES

Adedayo O. C and Ayodele, S.O (2016). An empirical analysis of the impact of capital flight on iNigeria economy: *International Journal of Academic Research in Economics andManagement Sciences.*

Alfa, C, Lionel, E & Samuel E.E (2019). Capital flight and domestic investment in Nigeria. Evidence from ardl methodology, *International Journal of Financial Research*

Ajayi. S. I. (1997). capital flight and external debt in Nigeria. *Research Paper 35, African Economic Research Consortium (AERC), Nairobi, Kenya*.

Ajayi, S. I., &Ndikumana, L. (2014). capital flight from Africa: causes, effects and policy issues. *Oxford: Oxford University Press.*

Anthony, O., Jonathan, O., Kenneth, K., Onyinye A.O., (2020). capital flight and economic growth in Nigeria: Evidence from ardl approach. *Asian Development Policy Review*, DOI: 10.18488/journal.

Bakare, A.S (2011). the determinants and roles of capital flight in the growth process of Nigerian economy. vector autoregressive model approach. *British Journal Management Economics1(2);100-113,2011*

Effiom,L., Uche, E., Otei A. and Effiong, A.F (2020).Asymmetric effects of capital flight on domestic investment in Nigeria: evidence from non-linear autoregressive distributed Lag Model Review 15(1) 15e80. https://doi.org/10.21203/rs.3.rs-113386/v1

Gusarova, V. (2009). The impact of capital flight on economic growth. Unpublished Masters Thesis of the KYIV School of `Economics.

Henry, A.W. (2016). Analysis of the effects of capital flight on economic growth: Evidence from Nigerian Economy (1980–2011). *European Journal of Business and Management,*

Igwemma, A.A, Egbuluonu, K &Nneji, A.C (2018). capital flight and Nigerian economy*; internationalJournal of Development and Economic* Sustainability.

Keynes, J. M. (1936). The general theory of employment, interest and money. London: Macmillan.

Musibau, H. O.(2017). The capital flight from Nigeria: An empirical analysis. *Journal of Indonesian Applied Economics*, Vol.7 No.2, 2017: 131-145

Nwanne, T. F. (2016). Implications of savings and investment on economic growth in Nigeria. European Journal of Accounting Auditing and Finance Research, 4(2), 20–32

Okoli, M.N &Akujuobi, A.B.C(2009). Determinants and roles of capital flight; the case of Nigeria. *International Journal Development and Management Review*.

Onwioduokit, E. (2001). Capital Flight from Nigeria: An Empirical Reexamination. Accra. *West African Monetary Institute*. Ghana.

Paul, C. O., Kalu, E. U., Joseph, C. O. and Hyacinth, O. R. (2015). "The impact of capital flight on economic development: Nigeria in focus." British Journal of Economics, Management and Trade 10(3): 1-13. doi:10.9734/ BJEMT/ 2015/20122.

Pastor, M, Jr. (1989). Capital flight and the Latin American debt crisis. *Economic Policy Institute. Washington, DC.*

Rahmon, A. B. (2017). An empirical investigation of capital flight and domestic investment in Nigeria (1980-2015). Journal of Economics and Sustainable Development, 8(24), 8–16