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01. Illicit Financial Flows and Macroeconomic Performance in Nigeria Sa'ad Babatunde Akanbi, Hammed Agbola Yusuf and Abdulganiyu Idris Abdulrahman	26
02. A Discourse on The Views of Modern Islamic Scholars (Gulam) on Human Cloning Ishaku, Safiyau	42
03. Perception of Community on the Effect of Political Entrepreneurship of Traditional Rulers in Gombe State Nasiru Modibbo	64
04. Preliminary Observations on Religion and the Imperatives of National Cohesion in Nigeria: A Historical Appraisal Ediba, Isaac Ogbogo, Ph.D	77
05. Globalization: A Threat to African Cultures Gajere Yakubu Tula	96
06. An Empirical Investigation of Causal Link and the Impact Foreign Private Investment by Origin on the Nigerian Economy J.W.D.Somasundara, Adamu Idr and Hajara Babayo	111
07. Neo-Colonialism, Democracy And The Middle-East Crises: A Study Of Political And Economic Exploitation Of Oil Abubakar Abdullahi Arawa	120
08. Inclusion of Environmental Accounting in Nigerian Manufacturing Organization's Accounting Information Systems Iluya Garba	141
09. Implicating Poverty in Women's Health Challenges in Sub-Saharan Africa: A Case Study of Contemporary Nigeria Ele Samson	157
10. Christians, Changing The Crooked Baton In Nigeria's Democratic Relay: Lessons, Challenges and Prospects for Leadership from the Apostolic Mandate of Ephesians 4:20 Cosmos B. Wale, Victor T. Igbumand Babale Y. Kume	184
11. Cadmium Contamination in Dry Zone Farm Soils in Sri Lanka: An Investigation of Sources, Chemistry and Threats Sajane Gunadasa and Priyantha Yapa	

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Illicit Financial Flows and Macroeconomic Performance in Nigeria

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Hammed Agboola Yusuf
Abdulganiyu Idris Abdulrahman**

Abstract

Illicit financial flows, an outcome of market imperfection that arises from all sort of corruptions, has become area of concern to both researchers and policy makers. Most developing countries have become vulnerable to illicit financial activities due to global economic liberalization. This study examined the effects of illicit financial flows on macroeconomic performance in Nigeria for the period 1981 to 2013. The results of the error correction model reveals that illicit financial flows affects macroeconomic performance during the period under review. The study concludes that illicit financial flows must be curtailed to enhance macroeconomic performance.

Keywords: Illicit financial flows, saving, investment, economic growth.

Introduction

Most African countries have become vulnerable to illegal financial activities due to global economic liberalization. These illegal financial activities which often referred to as shadow or underground economy include: money laundering, corruption, racketeering, tax

evasion among others. These activities have been recognized as a major concern to both researchers and policy makers because of its negative effects on the economies of most African countries. It makes emerging economies to remain poor as resources which could have been used for poverty reduction and growth are diverted elsewhere (UNECA, 2014). Kar and Spanjers (2013) classified the movement of funds from one country to another as Illicit Financial Flows (IFFs) when such funds are illegally earned, transferred and utilized. Furthermore, IFFs is associated with the activities of wealthy citizens investing abroad with the aim of acquiring enormous stocks of foreign assets (Pastor, 1990). One of the consequences of IFFs is the deepening of the unequal distribution of political and economic power, because the beneficiaries of this illegal activities become wealthier and gain more political control. For example, a civil servant with relative income to make ends meet may not be in position to engage in illicit transfers. On the other hand, a political office holder may not be able to spend all his illegally acquired wealth, therefore transfer part of the wealth abroad illegally. This seriously affects the volume of investment, infrastructure development and economy as a whole.

Despite the improvement in international laws and regulations against anti-money laundry, IFFs is still on the increase in most developing countries. For instance, the illicit financial flows out of Africa was estimated between \$854 billion and \$1.8 trillion over the period 1970-2008 (GF1, 2010). In corroboration, Kar and Spanjers (2013) observed that illicit capital flows from African countries is far in excess of the official financial assistance coming into African countries. Nigeria was among the six Sub-Saharan African countries with the highest average capital flight over the period 2000 to 2008. Other countries are: South Africa, Cote d'Ivoire, Angola, Zimbabwe and Democratic Republic of Congo (Nkurunziza, 2012). Sahadath (2014) pointed out that some African leaders like Mobutu Sese Seko (Democratic Republic of

Congo), Hosni Mubarak (Egypt) and Sani Abacha (Nigeria) siphoned billion of Dollars from their countries and save the money in Swiss and Cayman Bank accounts. For example, Mobutu Sese Seko of Zaire was said to have amassed up to \$4b during his 32 year tenure as president. The former Nigeria president, late Sani Abacha looted an estimated \$2b in which part of the money has been recovered by Jonathan administration. The reports also show that the family of Tunisian president, Ben Ali, has hidden an estimated \$18b from Tunisian authorities. Also the former ruler of Libya, Muammar Gaddafi, had assets hidden globally at a conservative estimate of \$200b.

Spanjer and Frede (2015) opined that in country where corruption allows the elites to unlawfully acquired wealth and transfer them abroad, such countries may find it difficult, if not impossible, to develop economically. On the other hand, countries that are trade-friendly, with efficiently low tariff customs regime, are likely to experience low illicit outflow when compared to countries with high levels of income inequality. Baker (2005) pointed out that laundered commercial money through corruption constitutes the least component of IFFs, followed by criminal activities, while the laundered commercial money through multinational companies constitute the largest component. However, the case of Nigeria may be different from Baker's assertion in that corruption constitutes part of the largest IFFs out of Nigeria.

The African Governance Report of 2009 for 35 African countries, including Nigeria, indicates that the major three arms of government (Executive, Legislator and Judiciary) are prone to corruption at varying degrees especially in the area of money laundering (UNECA, 2009). The report also identified private sectors and non-government organizations as major players in corruption, and attributed it to the lack of resources and ideal procedures in fighting corruption.

From the foregoing, It is evident that IFFs from Africa not only act as hurdle to state and continental development, but also pose a risk to international and regional security. It is also important to mention that the negative multiplier effects of IFFs on developing countries is alarming, as it has become one of the main challenges confronting the surge for structural transformation in most developing countries, Nigeria inclusive. Furthermore, the quest for economic transformation in most of these countries has been significantly constrained by the financial structure of IFFs (UNESCO, 2013). However, in the case of Nigeria, a nation endowed with enormous human and natural resources, huge illicit outflows by government officials and elites has been the major hindrance to the provision of basic services and thereby subjecting the country to rely on external support. It is therefore the objective of this study to examine the effects of illicit financial flows on macroeconomic performance in Nigeria for the period 1981 to 2013.

Review of Literature

Moving money from one country to another has been viewed in different ways by different scholars. For example, if an investor from advanced country such as United States of America or Britain invests capital abroad, it is called "foreign direct investment", when an investor in developing country like Nigeria invests money abroad, it is termed "capital flight". Similarly, when a company in advanced country invests 35 percent of its equity abroad, it is called "strategic diversification" and when a company in developing country invests as low as 5 percent of its equity abroad, it is called "lack of confidence" (Konitz, 2013). This implies that moving funds from advanced countries to another country is seen as a response to investment opportunities while moving funds from developing countries to abroad is seen as avoiding possible risks in the home country (Ajayi, 1997). This shows that defining or describing

capital flight lies on the circumstances surrounding the movement of the funds and the peculiarities of the economy under investigation.

However, IFFs is an aspect of capital flight, where capital flight is the movement of money from home country to another country either in pursuance of hot money, to avoid financial risk, political instability or economic volatility. The movement of capital out of the home country could be legal or illegal. The legal capital flight is movement of funds that follows normal procedures and it is recorded in the books of national account in the originating country. The illegal capital flight, which is also known as illicit financial flows is unauthorized movement of funds across boarder and thus not recorded in the book of national account. United Nations Economic and Social Council (UNESCO) (2013) defined illicit capital flows as the deliberate actions taken by the private operators who take advantage of the opaque financial system abroad to evade tax and other charges on their wealth. In this case the capital accumulation which is one of the main sources of economic growth and development is grossly undermined by activities of IFFs.

Organization of Economic Cooperation and Development (OECD) (2014) described IFFs as an outcome of market imperfection which arises from: bribery, drug trafficking, counterfeiting, terrorist financing, tax evasion, trade mispricing and activities of multinational cooperation. All these activities are often supported by tax haven and noncompliance of countries on anti-money laundering (OECD, 2014). Thus, IFFs activities are classified into three forms; i) the money acquired through theft, bribery and other forms of corruption by government officials; ii) the gains acquired from the criminal activities such as terrorist financing, counterfeiting and drug trading; and iii) the proceeds from tax evasion and unlawful commercial transactions (UNITED, 2013). Available evidences show that corruption comprises about 5 percent of the total outflow of illicit funds, 35 percent of criminal

activities, and about 60 percent of commercial transactions through multinational cooperation (Baker (2005), Kar and Carthwright-Smith (2008), Kar and Curcio (2011)).

However, the origin of IFFs has been traced to the late 19th century when African was seen as the target for resource exploitation by the explorers (Le Billion, 2011). This was due to the availability of abundant resources such as: diamonds, minerals, rubber, cocoa, and crude oil. Le Billion further argued that extractive industries are often associated with high levels of IFFs and gave four factors that make extractive industries prone to IFFs in Africa. Firstly, extractive industries are under the discretionary control of political executives. Secondly, unclear distinction between private and public interests on extractive sectors. Thirdly, fewer corporate checks and balances due to limited competition in extractive sectors and lastly, extractive sectors require high degree of technical expertise and make mispricing, and falsifying reports easier (Le Billion, 2011).

Another cause of IFFs in Africa is the inability of state to enforce taxation. This is evident in the loss of revenue in foreign trade through the illicit practice of trade mispricing. Three West African countries – Ivory Coast, Ghana, and Nigeria lost \$260m, \$121m and \$821m respectively through trade mispricing, especially to the Europe and America (Aid, 2009). Africa Development Bank (AfDB) and Global Financial Integrity (GFI) (2013) identified Nigeria, South Africa, and Egypt as the largest exporters of illicit capital, based on the volume of outflow. The two institutions (AfDB and GFI) also identified largest regional players in illicit capital flows in Africa. In the West region, Nigeria, Ivory Coast, and Republic of Congo were the leading players; Algeria, Egypt, and Libya were the leading players in the north region, while in the South region, Angola, Mauritius, and South Africa were the leading players.

Empirical Evidences

Several studies have investigated the effect of capital flight on economic growth. For instance, Guseva (2009) carried out a study for 139 developing countries using pooled OLS, Fixed effect, and Random effect estimates for the period 2002 – 2006. His results revealed a negative effect of capital flight on economic growth. Ajayi (2012) and Umoru (2013) also found negative and significant effects of capital flight on economic growth in Nigeria. In the same vein, Alkhatlan (2013) examined the nexus between remittance outflows and economic growth in Saudi Arabia for the period 1970 – 2010. He found a negative and significant relationship in the short-run, whereas in the long-run the relationship was not significant. Adaramola and Obalade (2013) also examined the impact of capital flight on economic growth in Nigeria over the period 1981-2010. The results revealed that capital flight has a negative impact on economic growth only in the short-run.

Dev Kar and Sarah Freitas (2012) carried out research on illicit financial flows from developing countries for the period 2001 – 2010. They discovered that on average, developing countries lost between \$586.96 billion to \$918.6 billion per year. It was also revealed that in 2010, developing countries lost a minimum of \$858.8 billion. Similarly, AfDB and GFI (2013) carried out research on illicit financial flows and the problem of net resources transfer from Africa between 1970 and 2009. They found that Africa provided net resources to the world of about \$1.4 trillion which is far more than inflows to Africa over the period under review. They concluded that the illicit resources from Africa was four times current Africa's external debt. The research carried out by Kar and Spanjers (2014) for Global Financial Integrity, revealed that illicit financial flows from developing countries between 2003 and 2012 stood at \$6.6 trillion with an average increase rate of 9.4 percent per annum.

However, majority of these studies focused only on effect of capital flight/illicit financial flows on economic growth, this study intends to take a step ahead by examining the effect of illicit financial flows on macroeconomic performance in which economic growth is inclusive.

Methodology

In order to achieve the objective of this study, three models were specified in which three variables were used to capture macroeconomic performances. The variables are: saving, investment, and economic growth.

Saving Function

Theoretically, saving is a function of level of income and interest rate. Saving is expected to respond to changes in level of income and interest rate positively. Government expenditure and money supply are also expected to influence saving positively.

$$sav_t = f(y, intrdr_t, govexp, m2) \dots (4.1)$$

If illicit financial flows variable is introduced into equation 4.1 to capture its effect on saving, equation 4.1 becomes:

$$sav_t = \alpha_0 + \alpha_1 y_t + \alpha_2 intrdr_t + \alpha_3 govexp_t + \alpha_4 m2_t + \alpha_5 iffs_t + u_t \dots (4.2)$$

Where sav_t is saving at time t , y_t is level of income at time t , $intrdr_t$ is the deposit rate of interest at time t , government expenditure at time t , $m2$ is broad money supply at time t , $iffs_t$ is the illicit financial flows at time t , and u_t is the error term. While illicit financial flows is expected to have negative effect on the level of savings, other independent variables are expected to have positive effects.

Investment Function

Investment in any given country is influenced by many factors. But for the purpose of this study, level of income proxy by real GDP, interest rate proxy by monetary policy rate, and national saving were considered as the factors that influence investment.

$$inv_t = f(rgdp_t, mpr_t, sav_t) \dots (4.3)$$

Funds moving out of the country illegally affects the available funds for investment within the domestic economy. Including illicit financial flow variable in equation 4.3 gives:

$$inv_t = \beta_0 + \beta_1 rgdp_t + \beta_2 mpr_t + \beta_3 sav_t + \beta_4 iffs_t + \varepsilon_t \dots (4.4)$$

Where inv_t is investment at time t , $rgdp_t$ is real level of income, mpr_t is monetary policy rate at time t , is national saving at time t , others were as defined earlier. While real level of income and saving are expected to have positive effects on investment, monetary policy rate and illicit financial flows are expected to have negative effects.

Growth Function

On the effect of illicit financial flows on economic growth, augmented Solow growth model was adopted with modification. The model suggested four determinants of economic growth – previous income, investment, population growth and human capital (Hoeffler, 2002). In this study population growth is dropped and openness of the economy was included. Government expenditure is also expected to influence economic growth. Expressing economic growth as a function of the above mentioned variables gives:

$$y_t = f(y_{t-1}, gfcf, govexp, humcap, open_t) \dots (4.5)$$

Including the targeted variable (illicit financial flows) into equation 4.5, we have

$$y_t = \delta_0 + \delta_1 y_{t-1} + \delta_2 g/cf_t + \delta_3 govexp_t + \delta_4 humcap_t + \delta_5 open_t + \delta_6 iff_t + \omega_t \quad (4.6)$$

Where y_t is economic growth proxy by GDP at time t , is the gross capital formation at time t , is human capital at time t , is openness of the economy. Others were as defined earlier. It is expected that

Descriptive and econometrics analyses were employed to achieved the objectives of this study. Charts and graphs were used to show the trend of illicit financial flows. In the econometric analysis, Augmented Dickey Fuller and Phillip Perron tests were used to test the stationarity of all the variables employed in this study. The study also employed Johansen Cointegration technique to test the existence of long-run relationship between dependent variable and independent variables for the three specified equations. Having established the existence of long-run relationship among the variables, error correction model of estimation were used to determine the significance of each independent variable on the dependent variable.

Results and Discussion

Trend Analysis

The trends of IFFs from Nigeria between 1970 and 2013 is revealed in figure 5.1. It shows that Nigeria experienced high IFFs in 1977, 1980, 1983, 1987 and 1990. The trends show declining of IFFs from 1991 up till 1998 and rise again reaching the highest in 2008 with about \$51.7m. Thereafter, it began declining till 2013. The decline could be attributed to the global financial crisis which affects the source of funds relative to the use of funds which reduces the IFFs.

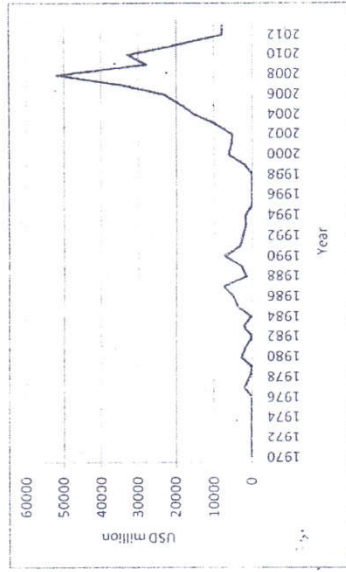


Figure 5.1: Illicit Financial Flows out of Nigeria

Source: Authors' computation

When the trend was divided into four segments as shown in figure 5.2: 1970-1979 (military regime); 1980-1983 (civilian regime); 1984-1998 (military regime); and 1999-2013 (civilian regime), it was discovered that the growth rate of IFFs during civilian regimes were more than that of military regimes. For example, during military regime, the growth rate between 1970 to 1979 averaged 505.3 and between 1984 to 1998 it averaged 134.9, while during civilian regime, it averaged 2789.1 and 810.8 between 1980 to 1983 and between 1999 to 2013 respectively. This indicates that the fiscal sustainability policies under military regimes were more accomplished when compared to civilian regime. High IFFs during civilian regimes could be ascribed to the lack of rule of law which gives room for political allied to move money out of the country illegally. A typical example was what happened in the last quarter of 2014, when the sum of \$9.3m was found in a jet with two Nigerians and an Israeliite in South Africa.

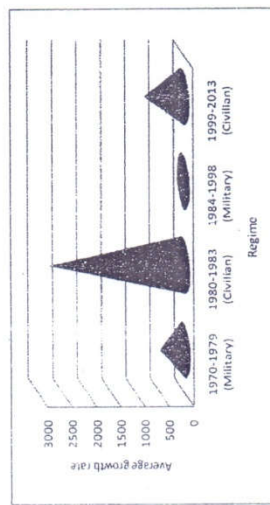


Figure 5.2: Growth rate of Nigeria's IFFs by regimes

Source: Authors' computation

The study also compared the status of Nigeria with other countries across the globe in terms of largest average illicit financial flows, it was found that Nigeria is among the top ten countries with largest average IFFs. As shown in figure 5.3, China top the list with \$139,228m average IFFs, followed by Russia with \$104,477m average IFFs. In Africa, South Africa has the highest average IFFs with \$20,922m followed by Nigeria with average IFFs of \$17,804m.

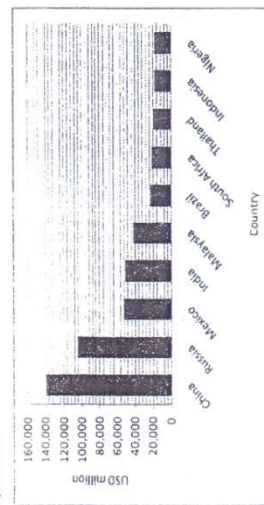


Figure 5.3: Top ten countries with largest average IFFs (2004-2013)

Source: Authors' computation using data from Kar and Spanjers 2015

Regression Analysis

Unit root test

It is necessary to conduct unit root test since time series data are often assume to have unit root at levels. Augmented Dickey Fuller (ADF) and Philip Perron (PP) tests were used to determine the order of integration of all the variables used in this study. The results in table 1 show the stationarity status of all the variables.

Table 5.1: Augmented Dickey Fuller (ADF) & Philip Perron (PP) Tests

Variable	ADF		PP	
	Levels	First Difference	Levels	First Difference
sa _{vt}	6.5704	-4.0869	1.5953	-3.6548*
y _t	0.14485	-5.2893	2.3837	-5.1568
intrd _t	-2.6707	-5.4674	-2.5883	-7.3729
govexp _t	3.0284	-3.2539*	0.7082	-7.1455
m2 _t	4.8062	-9.7232	2.6037	-4.2967
iff _t	-1.4951	-5.5692	-1.8849	-5.6124
inv _t	-1.3718	-4.9430	-1.3942	-4.9453
rgdp _t	2.5509	-3.3649	2.5509	-3.3649
mpri _t	-2.9367	-6.0192	-2.7957	-7.7251
gfcf _t	-2.0621	-4.5584	-2.9069	-4.5079
humcap _t	4.3496	-4.4163	-1.7588	-7.0929
open _t	-2.0078	-6.2005	0.7082	-6.8313

* Significant at 5%, others were significant at 1% level of significance

The results reveal that all the variables were stationary at first difference. In other words, the variables were integrated of order one I(1). The study went further to test whether the variables have long-run relationship in each of the equation specified (Equations 4.2, 4.4 and 4.6).

Saving Function

The cointegration test conducted for saving function (equation 2.2) reveals that dependent variable and independent variables were cointegrated. Both Trace test and max-eigenvalue test indicate 3 cointegrating equations at 5% level of significance. This implies that the null hypothesis of no cointegration is rejected. Thus, long-run relationship exist between savings and its independent variables. The results are presented in Tables 5.2 and 5.3.

Table 5.2: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value	Prob.**
None *	0.913081	172.1556	95.75366	0.0000
At most 1 *	0.852155	98.87233	69.81889	0.0001
At most 2	0.424191	41.52454	47.85613	0.1725
At most 3	0.385079	24.96516	29.79707	0.1627
At most 4	0.291686	10.37731	15.49471	0.2528
At most 5	0.001043	0.031296	3.841466	0.8595

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

Table 5.3: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	Critical Value	Prob.**
None *	0.913081	73.28329	40.07757	0.0000
At most 1 *	0.852155	57.34779	33.87687	0.0000
At most 2	0.424191	16.55938	27.58434	0.6179
At most 3	0.385079	14.58785	21.13162	0.3188
At most 4	0.291686	10.34601	14.26460	0.1902
At most 5	0.001043	0.031296	3.841466	0.8595

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

On the basis of the cointegration results, the long-run (static) regression results are presented in Table 5.4. The results reveal that level of income is significant but came out with opposite sign. The interest rate measured as the deposit rate was not significant. This implies that people do not save because of interest rate in Nigeria. This could be attributed to in-attractive interest on deposit.

Table 5.4: Long-run Estimation Results for Equation 4.2.

Variable	Coefficient	Standard Error
c	8.9460	72.4095
y _t	-0.0075	0.0059
intrd _t	0.3139	4.5258
govexp _t	-0.1921	0.0983***
m2 _t	0.6209	0.0277*
iff _t	-0.0099	0.0036**

$$R^2 = 0.99$$

*, **, ***, represent significant at 1%, 5% & 10% respectively

Government expenditure did not appear with expected sign, but statistically significant at 5% level. Money supply came out with expected sign and statistically significant at 1% level. This implies that a unit increase in money supply will lead to 0.62 unit increase in saving. The targeted variable (iff) also came out with expected sign and statistically significant at 5% level. The short-run regression results are presented in Table 5.5. The results reveal that level of income came out with expected sign but insignificant. The sign of interest rate proxy by deposit rate did not conform with a-priori expectation and also not significant.

Table 5.5: Short-run Estimation Results for Equation 4.2

Variable	Coefficient	Standard Error
c	-0.1416	20.2727
Δy_t	0.0036	0.0041
Δintrd_t	0.6233	4.2969
Δgovexp_t	-0.0869	0.1040
$\Delta m2_t$	0.5412	0.0259*
Δiffr_t	-0.0131	0.0026*
ect_{t-1}	-1.2689	0.1701*
$R^2 = 0.97$		

Money supply, illicit financial flows and error correction term came out with expected signs and all are significant at 1% level. An increase in money supply by a unit will lead to 0.05 unit increase in saving. The targeted variable, illicit financial flows, has a significant impact on saving. A unit increase in illicit financial flows will lead to 0.01 decrease in national savings. The error correction term (ect_{t-1}) is statistically significant. This indicates that there is speed of adjustment in the long-run which is measured by the coefficient of error correction term.

Investment Function

Since all the variables in the investment function (equation 4.4) are cointegrated of order one $I(1)$, which suggests possibility of a long-run relationship among the variables, Johansen cointegration

tests were conducted and the results are presented in Table 5.6 and 5.7.

Table 5.6: Unrestricted Cointegration Rank Test (Trace)

Hypothesized	No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value	Prob.**
None *	0	0.865669	132.7753	69.81889	0.0000
At most 1 *	1	0.675460	70.54436	47.85613	0.0001
At most 2 *	2	0.545369	35.85864	29.79707	0.0094
At most 3	3	0.277011	11.22230	15.49471	0.1982
At most 4	4	0.036948	1.167087	3.841466	0.2800

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

Table 5.7: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized	No. of CE(s)	Eigenvalue	Max-Eigen Statistic	Critical Value	Prob.**
None *	0	0.865669	62.23092	33.87687	0.0000
At most 1 *	1	0.675460	34.88571	27.58434	0.0048
At most 2 *	2	0.545369	24.43634	21.13162	0.0165
At most 3	3	0.277011	10.05521	14.26460	0.2083
At most 4	4	0.036948	1.167087	3.841466	0.2800

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

The cointegration results show that the investment and independent variables included in the function are cointegrated. Both the Trace test and Max-eigenvalue tests indicate 3 cointegrating equations at 5% level of significance.

On the basis of the cointegration results, error correction mechanism was applied and the long-run (static) model and short-

run (dynamic) model were estimated. The results were presented as follows.

Table 5.8: Long-run Estimation Results for Equation 4.4

Variable	Coefficient	Standard Error
c	-5613.7	1033.11*
rgdp _t	27.9412	3.5502*
mpri _t	-190.1399	58.9612*
sav _t	0.3657	0.2707
iffs _t	0.1168	0.0222
R ² = 0.98		

* Significant At 1% level of significance

The estimated coefficients of the long-run relationship show that level of income proxy by real GDP came out with expected sign and statistically significant at 1% level of significance. The interest rate measured as monetary policy rate appeared with negative sign which is in line with a-priori expectation and statistically significant at 1% level. This implied that an increase in interest rate will lead to decrease in investment and vice versa. Although the coefficient of saving came out with expected sign but does not have significant impact on investment. The illicit financial flows did not comply with a-priori expectation but statistically significant in the long-run. The value of R² (0.98) suggests that the model is in good fit, since 98% variation in investment is accounted for by the independent variables included in the model.

The results for the short-run dynamic coefficients associated with long-run relationship are presented in table 5.9. The signs of the short-run dynamic impact are maintained to the long-run except

for the saving which came out with negative sign. The results reveal that an increase in income will lead to increase in investment.

Table 5.9: Short-run Estimation Results for Equation 4.4

Variable	Coefficient	Standard Error
c	-73.1593	259.5851
Δrgdp _t	43.4732	11.4274*
Δmpri _t	-102.424	48.0978**
Δsav _t	-0.6489	0.4910
Δiffs _t	0.0776	0.0264*
ect _{t-1}	-0.9232	0.1877*
R ² = 0.59		

*, **, Significant At 1% level of significance

The interest rate proxy by monetary policy rate also have negative impact on investment. This implies that an increase in interest rate will lead to decrease in investment which is in line with a-priori expectation. The targeted variable, illicit financial flows although did not come out with expected sign but statistically significant. The error correction term (ect_{t-1}) is statistically significant with correct sign, suggesting a moderate speed of convergence to equilibrium in the long-run.

Economic Growth Function

The Johanson cointegration test conducted for the economic growth equation variables shows that the dependent and independent variables were cointegrated. The Trace test indicates 4 cointegration equations, while max-eigenvalue test indicates 2

cointegrating equations at 5% level (Table 5.10 & 5.11). Based on the cointegration results, the study went further to examine the individual significance of the independent variables on the dependent variables. The results of the long-run and the short-run regressions were presented in Tables 5.12 and 5.13 respectively.

Table 5.10: Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Trace	Statistic	Critical Value	Prob.**
No. of CE(s)	Eigenvalue			
None*	0.959580	230.8973	117.7082	0.0000
At most 1*	0.834801	131.4357	88.80380	0.0000
At most 2*	0.636239	75.61697	63.87610	0.0038
At most 3*	0.464645	44.26793	42.91525	0.0364
At most 4	0.411431	24.89636	25.87211	0.0657
At most 5	0.238992	8.466471	12.51798	0.2159

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

Table 5.11: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized	Max-Eigen	Statistic	Critical Value	Prob.**
No. of CE(s)	Eigenvalue			
None*	0.959580	99.46161	44.49720	0.0000
At most 1*	0.834801	55.81874	38.33101	0.0002
At most 2	0.636239	31.34904	32.11832	0.0618
At most 3	0.464645	19.36957	25.82321	0.2811
At most 4	0.411431	16.43189	19.38704	0.1277
At most 5	0.238992	8.466471	12.51798	0.2159

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

Table 5.12: Long-run Estimation Results for Equation 4.6

Variable	Coefficient	Standard Error
c	-2512.346	1457.153***
y _{t-1}	0.4580	0.2560***
gfcft	53.8633	31.9874
govexpt	7.7774	3.5224**
humcap _t	1.3185	19.3882
open _t	109.5766	422.3251
iffts _t	-0.2876	0.1279
R ² = 0.98		

*, **, *** Significant At 1%, 5%, 10% level of significance

The long-run results, as shown in Table 5.12 reveal that previous income is statistically significant and came out with correct sign. The gross fixed capital formation though satisfied the a-priori expectation but insignificant. Government expenditure has the current sign and significant at 5% level. This implies that a unit increase in government expenditure will lead to about 7.8 units increase in economic growth. Human capital has positive relationship with economic growth but does not have significant impact. This could be attributed to mismanagement and diversification of funds meant for human capital development. The targeted variable, illicit financial flows came out with expected sign and statistically significant at 5% level. This implies that a unit increase in illicit financial flows will lead to about 0.29 unit decrease in economic growth. The value of $R^2 = 0.98$ indicates that the model is in good fit.

Table 5.13: Short-run Estimation Results for Equation 4.6

Variable	Coefficient	Standard Error
c	-139.449	646.2457
Δy_{t-1}	0.8789	0.2363*
$\Delta gfcf_t$	38.6801	33.8222
$\Delta govexp_t$	1.3887	3.2610
$\Delta humcap_t$	-21.489	14.9950
$\Delta open_t$	933.4891	404.1905**
$\Delta iffs_t$	-0.1961	0.1096***
ect_{t-1}	-1.3272	0.2242*
$R^2 = 0.80$		

* Significant At 1% level of significance

The short-run results, as shown in Table 5.13 reveal that gross fixed capital formation, government expenditure and human capital are not significant. Previous income, openness of the economy and illicit financial flows are significant at 1%, 5% and 10% levels respectively. The error correction term (ect_{t-1}) came out with correct sign and statistically significant at 1% level, which implies moderate speed of adjustment towards equilibrium in the long run. The value of R^2 indicates that about 80% variation in GDP is accounted for by the dependent variables included in the model.

Concluding Remarks

This study has examined the effects of illicit financial flows on macroeconomic performance using Error Correction Model (ECM). Out of the three variables (saving, investment, and

economic growth) used to proxy macroeconomic performance, IFFs affects saving and economic growth negatively. The policy implication is that increase in IFFs reduces the amount of funds in the country which in-turn reduces saving and economic growth. It is evident from the results that illicit financial flows is inimical to macroeconomic performance. It is therefore imperative to curtail illicit financial flows in order to boost saving and growth since more fund would be available for financing, hence growth and development.

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