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CAPITAL FLIGHT AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT: *This study investigated the effect of capital flight on economic growth in Nigeria within the periods 1990 to 2017. Time series data covering these periods of study were employed and the data analysis were conducted for both the short run and the long run using the co-integration analysis while the ADF tests was used in testing for stationarity of the time series. The researchers made use of the ordinary least square (OLS) econometrics method of data analysis. The T-test results revealed the existence of a strong relationship between the proxies of capital flight and gross domestic product serving as proxy for economic growth. Recommendations proffered include the following amongst others: Policy-makers and the relevant authorities should pay more attention than ever to the issue of capital flight and external debt servicing in order to stem its counter-productive effects on economic growth; Since the external debt servicing (EDS), which is a major leakage in the economy, has a negative relationship with the real gross domestic product (RGDP), the government and the monetary authorities should do well to have a firm grip on the type and form of debt borrowed.*

KEYWORDS: capital flight; economic growth; net foreign investment; external debt servicing; external reserves; gross domestic product.

INTRODUCTION

Overview

Capital flight either normal or abnormal is detrimental to a nation's economy. Capital flight as defined by De Boyrie (2011) is a short term private capital outflow that responds not only to political crisis but also to economic policy failure. Ajadi (2008) perceived capital flight as any typical capital outflows injected by economic agents' in developing countries (either private or public with the intent of making such flow hidden). This is abnormal since the capital arbitrage theory, product cycle theory and theory of the firm suggest that capital flows from a resource surplus country to scare countries; political pressures combined with national economic policy distortions such as capital control, heavy taxation and overvaluation of exchange rate makes such abnormal capital outflow responsive. Capital flight thus is understood to take up various forms which include currency smuggling (concealing cash or cheques within suitcases), E-transfers from private banking services, trade taking (over invoicing of imports and under invoicing of exports), declaration of un-existing foreign debts and commission and agents' fee (Njimanted, 2008). Capital flight likewise comprises overseas investment stemming from illegal activities like drug

trafficking, corruption, illicit activities mostly those linked to tax evasion and exchange rates controls (Ajayi, 2012).

Capital flight has a significantly negative effect on domestic investment due to the capital transfer out of the country resulting in a scarcity of resources to finance domestic investments (Micheal & Kolapo, 2011). Generally, it is acknowledged that African countries are challenged with shortage of funds required to bring about economic sustainability. Thus boosting of foreign capital through foreign investment cannot be over stressed in order to bridge the gap in resources within emergent nations. Most emergent nations has resorted to external borrowing as a medium of bridging their saving-investment gap, it is undeniably an enigma, conversely, this is the reason while this countries are plagued with inadequate resources, vast amount of funds are being drained off overseas by political officeholders and the wealthy residents of debtor countries. Nigeria for instance, with an annual loss of about $10billion to capital flight is a forerunner of countries in African travail by this pitfall.

Conferring to Agu (2006), more resources will be available in curbing issues regarding the economy and poverty alleviation if capital flight is efficaciously overturned. In truth, the continuous outflow of funds from this debt stricken economies only further make their external indebtedness to surge high, place their external reserves and Balance of Payment (BOP) in a worse state, lessen domestic savings and future growth potentials (Momodu, Akani & Uzobor, 2009).
Since Nigeria's independence in 1960, endeavours has been made by successful governments in enacting laudable economic reforms, policies, programmes and initiatives aimed at pulling free flow foreign investments across national frontiers with actual highest rate of returns on investments on capital. Indeed, Nigeria with profuse human and natural resources, ranked as the sixth largest oil producer with an output of over 3.5 million barrels of crude oil daily and at present with a foreign reserve exceeding $46 billion is reckoned by Transparency International (2010) as a known corrupt and amongst the poorest nations in the world. Precisely in July 2012, a survey conducted by transparency international, placed Nigeria in the 128th position as against 186 countries of corrupt nations. Nigeria is likewise part of the countries, whose oil producing communities lack basic social amenities and infrastructures such as roads, good schools, clean pipe borne water, high rate of unemployment and affordable health care facilities (Momodu, Akani & Uzobor, 2009). Correspondingly, the Nigeria economy unquestionably has experienced various changes; socio - political and economic likewise in its fiscal structure owing to disparity in government macroeconomic activities.

Over the years, the disquiet regarding capital flight in Nigeria relative to economic growth has been on the rise, and general research works have been done on this problem. Concurrently, the prospect for solving this problem remains grim. Economic growth level is stalled when the level of capital inflows is poor and is a deterrent to economic development, then again, high level of capital inflows stirs capital formation and is vital for economic growth, resulting to substantial level of investment which translates to high levels of returns. During capital outflow, money leaves the country (fleeing). In such circumstances, there is a potential lost to economic sustainability when capital outflow increases especially in countries with high dependency on external financing or either international aids or support.

In the past, the Nigerian government via different policies and programmes have tried to boost foreign capital inflows and properly exploit its contribution to the overall economy. These comprises the setting up of the Bureau of Public Enterprises (BPE), Nigerian Investment Promotion Commission (NIPC), establishing the National Council on Privatization (NCP) and likewise the Economic and Financial Crime Commission (EFCC) with other anti-regulatory agencies and economic/budgetary reforms which are likewise aimed at stimulating inflows of capital for the growth of the nations' economy. Hitherto these lofty goals have been a mirage. Today, attention is being directed towards an oil based mono-cultural economy making it more problematic. Thus regardless of several government efforts towards attracting foreign capital inflows, the impacts of these inflows towards economic transformation precisely and economic growth in general is still mired. It is against this context that this study sets to examine the macroeconomic effects of capital flight on the economic stability of Nigeria.

Objectives of the Study

The general objective of this research is to critically examine the effect of capital flight on economic growth in Nigerian. Specifically, the other objectives include;

1. To analyze the effects of net foreign investments on gross domestic products in Nigeria.
2. To examine the effects of external debt servicing on gross domestic products in Nigeria.
3. To investigate the effects of external reserves on gross domestic products in Nigeria;

REVIEW OF RELATED LITERATURE

Conceptual Framework

Concept of Capital Flight

There is no generally accepted definition of capital flight; nonetheless, its activities can be back dated to the seventeenth century. For reasons being that there are numerous definition of capital flight calculating it will yield different result. The absence of a universally acknowledged definition of capital flight has culminated in a controversy because of the way the term has been used interchangeably between developed and emerging countries. Consequently, some schools of thought consider the outflows of capital from developed countries as foreign direct investment while the same activity is referred to as capital flight when it is assumed by residents of emerging nations (Ajayi, 2003). However, it is pertinent to emphasize that what makes the difference is the use to which such inflow or outflow has been put. The premise of the above dichotomy is on the assertion that foreign investors from advanced nations are being swayed by better opportunities elsewhere, while investors from emerging countries are presumed to be evading the perceived high risk associated with investments which is a trait of some emerging nations. It is a common perception that all investors irrespective of being from a developed or developing country are rational and will accordingly base their decisions on relative returns and risks of investing despite the country.

In literature, another subtle peculiarity being made is that between legal and illegal transactions in trying to discern between capital flight and normal capital outflow. Since by virtue of their activity, illegal transactions are usually not reported to compilers of Balance of Payments (BOPs) statistics,

making it more problematic to know the extent to which they constitute capital flight. Cuddington (1986) in his opinion described capital flight to any short-term capital outflow usually involving money that reacts to political or financial crises, burdensome taxes, probable constrictions on capital control or devaluation of a major currency likewise actual or developing hyperinflation. Then again, Morgan Guaranty Trust Company (1986) in their view defined capital flight to involve both reported and unreported procurement of foreign assets by members of the public sector and the private sector other than a bank. Bonilla (2004) reasoned that investor's uses capital flight as a mechanism in applying for 'discipline of the market' to national economic policies. Here capital flight is every so often a means for tax evasion, or channel leaders and their close associates requisition the proceeds of corruption. Whereas Cooper and Hardt (2000) see capital flight as any flow of funds which is abnormal, having the holder looking for safe havens against financial uncertainty and levy or tries to launder profits from illegal deeds.

Murphy (2004) expresses capital flight as the movement of cash and investments out of one's country to a place in which they believe the assets will be safe for their use. Here the intent is to hide the capital from the sight of the authority. Capital flight as defined by Schneider (2003) is that part of resident capital outflow which is driven by economic and political uncertainty. In his own contribution, Mahon (1996) argues that capital flight is a way of preserving savings against the depredations of bad politicians. Otene (2010) explaining, said that capital flight is the transfer of large sums of money between countries to escape political or economic turmoil or to seek higher rates of return.

Capital flight according to Helleiner (2005) generally pertains to an outflow of capital from a country with relatively scarce capital and that is not part of normal commercial transactions. Chipalkatti and Rishi (2001), interpret capital flight to comprise of private capital outflows of any kind that result in the acquisition of foreign assets by the residents of a country. This definition is based on the motivations of the holders of capital. It rests on the assumption that an individual's control over capital is not complete, but it is subject to complex and alterable social control. According to Ramachanrann (2006), capital flight means the flight of financial and capital assets, and savings and wealth from a country.

The above conceptual literature on capital flight testifies to the fact that there are different views amongst scholars regarding the concept and definition of capital flight. Nevertheless, the generally consensus is that capital flight pertains to capital that is absconded from the domestic financial market for avoidance of losses and is in conflict with the interests, goals and objectives of the domestic society (Harringan, Mavrotas & Yusop, 2007).

Concept of Economic Growth

Economic growth conferring to Todaro and Smith (2009) means the steady process through which the productive capability of the economy is increased long term to foster a rise in the levels of national output and income. Economic development can also be defined as consistent improvement in the various aspects of the life of the entire population of a country. This improvement according to Kalu (2001), manifest in the greater ability of the people to solve their problems.Important components of economic growth with regards to Todaro and Smith (2009) are as follows;

(i) Capital accumulation, which includes a new investments in land, machineries and human resources via health improvements, education and job skills.
(ii) Population growth and thus subsequent growth in labour force.
(iii) Technological progress-new ways of tasks accomplished.

On Capital accumulation Todaro and Smith (2009) emphasized that investing in human resources can improve its quality and thereby have the same or even a more powerful effect on production as an increase in human numbers. They stressed further that formal schooling, vocational and on-the- job training programs, adult skill enhancement and other practices of informal education may all be made effective in augmenting human capital as per direct investment in buildings, machineries and materials. They further saw population growth and the associated upsurge in labour force as a factor capable of stimulating economic boom. As a larger labour force translates to more productive workers and a large overall population upturns the size of the markets. Given the aptitude of the economic system to rivet and productively employ the productive work force. Also a third component of economic growth-Technological progress accordingly results from new and improved ways of getting traditional task done such as growing crops, making cloths etc. They highlighted three basic classifications of technological process: natural, labour saving and capital-saving.

Natural technological progress ensues when higher output levels are realized using the same quantity and combinations of factor inputs. Also the application of computers, automated systems, high speed electrical drills, tractors and mechanical plough can result in labour saving. Thus these are categorized as labour saving technological progress. The indigenous less developed country development of low cost, efficient techniques of production can be categorized as capital saving. In this study, the researcher measured economic growth using the real gross domestic product (RGDP) of Nigeria. Real Gross Domestic Products takes inflation into consideration, making it possible for comparisons against other historical time periods and that the Bureau of Economic Analysis publishes its own analysis document with every GDP release, which is a great investor tool for analyzing figures and trends, and being conversant with full release.

THEORETICAL FRAMEWORK

The theoretical framework of this study is premised on two major theories of capital flight. These include;
(1) The investment diversion thesis
(2) Tax – depressing thesis

The Investment Diversion Theory

The postulation of this theory is that owing to the macroeconomic and political uncertainty in emerging nations and the simultaneous presence of better investment opportunities in developed countries i.e. high foreign interest rate, vast range of financial instruments, favourable tax climate, political and economic stability and secrecy of accounts. Some, corrupt, fraudulent leaders and bureaucrats usually cart away with scarce capital resources from their nations to advanced

countries. These funds are thus, not accessible for investment in their nation's leading to a decrease in aggregate investment, low economic boom, therefore declining the employment, increase in dependency ratio and high mortality rate. This stirs up the need for countries affected by these negative macroeconomic effects to borrow from abroad to service the domestic economy, which occasionally is still siphon thus prompting external dependency and indebtedness. Ajayi (1992) expressed that depreciation of domestic currency may arise owing to the liquidity constraint or crowding-out effect if the authorities are operating a floating exchange rate system. The exchange rate if attempted to be defended at this time would result to a loss of international reserves. The investment diversion thesis offers one of the renowned negative consequences of capital flight in the countries in concern.

The Tax-Depressing Theory

This postulates that there is a potential revenue loss owing to capital flight because the domestic government has no control over wealth held abroad and as such cannot be taxed. This drop in government revenue makes difficult the task of politico-economic engineering in promoting growth and development. This will cause the government a reduction in their debt-servicing capacity and as a consequence, increase the debt burden which will have constrains on economic sustainability. Thus, capital flight directly results to a reduction in the revenue generating potential of the government.

Empirical Review

The empirical relationship between capital flight and macroeconomic variables has been the thrust of several empirical studies. Ng'eno (2000), when looking at the magnitude of capital flight in Kenya made use of different methods of estimation in placing importance on macroeconomic variables by empirically determining the causal factor of capital flight. In his conclusion, balance of payment crisis caused a spike in capital flight, signifying that capital outflow was used as a shield against the poor economic conditions. It as well advises that increase in capital flight would occur without credible reforms to economic growth. Onwioduokit (2001), by applying ordinary least square (OLS) in analysing data, predicted the determinants of capital flight from Nigeria from 1970-2000. The outcomes showed that the major determinants of capital flight in Nigeria include availability of capital, domestic inflation, parallel market premium and likewise competitive growth rate of the economy.

Agu (2006), endeavoured to evaluate the concept of risk and returns when studying capital flight and domestic macroeconomic policy in Nigeria. He presented a viewpoint on assessing their responds to capital flight by using a micro portfolio management model. The impact of political risk was also analysed and a conclusion was drawn which is principal to capital flight. The second aspect of his research suggested that a macroeconomic model through empirically evaluating the risk when moving capitals and subsequently to evaluate the efficacy of domestic fiscal and monetary policies in combating capital flight. However, no evidence was found by him to support indirect control of capital flight through using fiscal and monetary policies to control uncertainty. Ajadi (2008) examined the econometrics analysis of capital flight in developing countries. The study probed the linear causes of capital flight (with a constraint to economic growth) in Nigeria utilizing the ordinary least squares (OLS) and the error correction method (ECM) for the period of

1972 to1989. The study in addition likewise established the validity of the portfolio theory which postulates how investors whom are risk –adverse can build portfolio for the purpose of optimizing or maximizing expected returns given a level of market risk.

Njimanted (2008), by using a two-stage least squares technique estimated the determinants, measurement and impact of capital flight on real economic growth of Cameroon. This was achieved after the applying Engle and Granger (1987) cointegration error correction mechanism using time series data from 1970 to 2005. The outcome showed that political instability, interest rate inflation differential, fiscal deficit and external debt servicing GDP ratio were responsible for large capital outflows from Cameroon. Micheal & Kolapo, (2011), in their study observed the effect of the determinants of capital flight on the Nigerian economic growth between 1985 and 2010. The research adopted Exchange Rate (EXGR), Inflation Rate (INF) and Foreign Direct Investment (FDI) with Fiscal Deficit (FISD) to be the causes of capital flight variable. Gross Domestic Product (GDP) was utilized as economic growth indicator. Data were analysed using ordinary least square (OLS) and also the co-integrating analytical technique with the result indicating that the parameters and the model were both significant. Furthermore, the short run analysis revealed that inflation was commonly responsible for capital flight while both inflation rate and exchange rate to a large extent determines capital flight at the long run which subsequently has an adverse effect on economic growth.

David & Umoru, (2013), explores empirically the relative effect of capital outflows on the growth rate of GDP in Nigeria. Three GDP growth rate models were designed through dissimilar measure of capital outflow from Nigeria being integrated and examined for probable co-integration. Research outcomes exhibited that growth rate of GDP were severely impacted by capital flight with such growth rate effect of capital outflow being significant. The exchange controls were indicate to be weak, capital control was irrelevant in stimulating GDP growth rate, public expenditure positively impacted GDP growth rate, industrial output to be a actual resource of GDP growth rate and that the growth effects of domestic investment is inconsequential in Nigeria.

Henry (2013) conducted a research on the determinant, measurement and impact of capital flight on the economic growth of Nigeria by using multiple regression, descriptive statistics and ordinary least square technique by utilizing a time series data ranging from 1980 to 2011. The outcome showed that political instability, high interest rate, high fiscal deficits and high profile external debt servicing GDP ratio were accountable for huge capital outflows from the Niger Delta Region in Nigeria.

Research Hypotheses

The following hypotheses guided the researchers in this study:

Ho_1: No significant relationships exist between net foreign investments and gross domestic products in Nigeria.

Ho_2: No significant relationships exist between external debt servicing and gross domestic products in Nigeria.

Ho_3: No significant relationships exist between external reserves and gross domestic products in Nigeria.

Conceptual/Operational Framework of the Study Variables

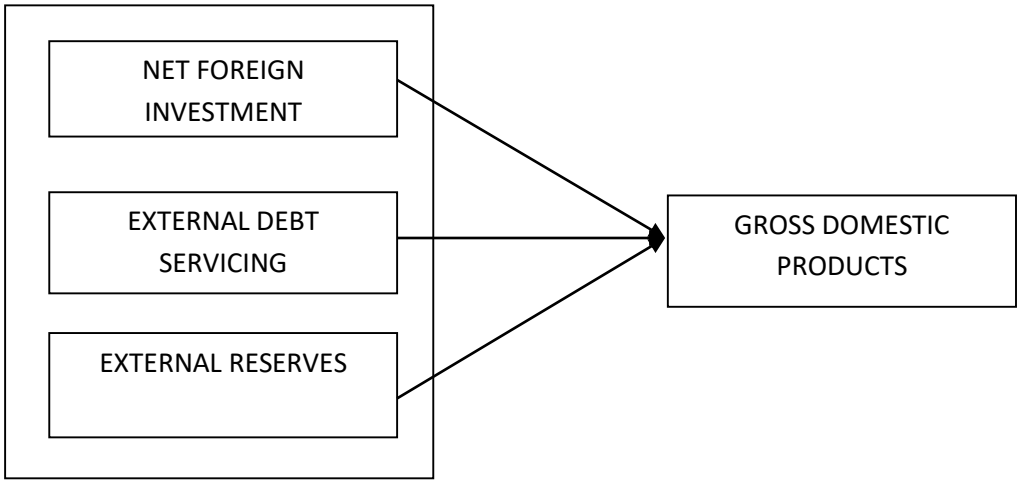

Figure 2.1: Conceptual/Operational Framework on Capital Flight and Economic Growth in Nigeria.
Source: Researcher Concept, 2019**.**

METHODOLOGY

Research Design

A research design has been described as a program, which guides the researcher in the process of collecting, analysing and interpreting observation. It also connotes the structuring of investigation aimed to identify variables and their relationships to one another. Therefore, the researchers made use of the quasi-experimental design because there are both dependent and independent variables used in the models. The dependent variables are influenced by the independent variables which make Quasi-experimental research design appropriate for the study. Further, secondary (time-series) data were used to carry out the analysis. Therefore, the research design for this work involved the following steps:

(i) Data collation from the following bodies: Nigerian Stock Exchange (NSE) fact books, Security and Exchange Commission (SEC) market Bulletins, CBN Statistical Bulletin and other relevant journals, 1990 – 2017.

(ii) The analysis of data collected using the EView Version 9.0.

Model Specification

The estimation involved the use of regression analysis (OLS) method due to its BLUE (Best Linear Unbiased Estimator) possession. The researcher used multiple linear regression model in the analysis.

Model, which is the simplification of complex reality, specifies the relationship between the variables used in the analysis. Therefore, the model specifies that economic growth [proxy by RGDP] is significantly influenced by the following: Net Foreign Investments by Nigerian (NFIN), External Debt Servicing (EDS), and External Reserves (ER). They represent capital flight. The model, which is expressed in their mathematical form, are formulated as follows,

Model

RGDP= f(NFIN, EDS, ER) - - - - - - - (1)

$RGDP= \alpha_0+ \alpha_1 NFIN - \alpha_2 EDS + \alpha_3 ER + U_i$ - - - - (2)

Where;

The a priori expectations are

Equ 1. $\alpha_1 > 0$, $\alpha_2 > 0$, $\alpha_3 < 0$

Where;

RGDP	=	Real Gross Domestic Product
NFIN	=	Net Foreign Investments by Nigeria
EDS	=	External Debt Servicing
ER	=	External Reserves
U_i	=	Disturbance Term
α	=	Intercept
$\alpha_1 - \alpha_3$	=	Coefficient of the independent Variables.

Sources and Method of Data Collection

The data for this research was obtained primarily from secondary sources particularly from Central Bank of Nigeria (CBN) statistical Bulletins, Security and Exchange Commission (SEC) market bulletins, Nigerian Stock Exchange (NSE) fact books and relevant journals.

Method of Data Analysis

The study is to evaluate the impact of capital flight and Economic Growth in Nigeria, 1990 – 2017. Specifically, data collected for this study were analysed with the aid of the Econometric View Software (E-view) version 9.0.

Diagnostic tests: Normality Test for the data was done by using Jaque-Berra test. For the determination of means and variances of the variables from being constant over time, heteroskedaticity test was done. Chow-Test was conducted to determine if there are any structural breakpoints in the series used.

More so, the Johansen Co-integration Test, which tests for the long-term relationship of the variables, was used to known the long-term relationship between the dependent and independent variables if the short-term analysis shows that a spurious regression result exists while the Error Correction Mechanism (ECM) was used to correct the short-term analysis of the co-integration test. Testing for the unit root or stationarity of the variables was achieved by using Augmented Dickey-Fuller (ADF). The Granger Causality Test was done to test for the direction of the cause between the variables used in the analysis. Specifically, multiple regression analysis based on the Ordinary Least Square (OLS) method, was used in determining the effect of the independent variables on the dependent variable, RGDP. The null hypotheses was tested using the student t-test (test of significance), the coefficient of determination (R^2) was used to determine the goodness-of-fit of the model while the f-test was used to ascertain how significant the variables taken together in the model are.

Further, the researcher used the (a) A prior test, (b) Statistical tests (t-tests, f-tests), and (c) the econometric test (Durbin-Watson) as the basis for economic interpretations of the results.

DATA PRESENTATION AND ANALYSIS

Table 4.1 Presentation of Study Variables Data

Year	RGDP	NFIN	EDS	ER
1990	472.6487	122.34	24,260.1	(18,498.2)
1991	545.6724	3042.01	21,756.2	(5,959.6)
1992	875.3425	112.03	36,133.1	65,271.8
1993	1089.68	1013.22	55,350.7	(13,613.9)
1994	1399.703	144.01	49.8	1.7
1995	2907.358	1613.13	179.9	1.4
1996	4032.3	923.9	237.1	4.1
1997	4189.25	781.23	250.5	7.6
1998	3989.45	882.12	183.7	7.1
1999	4679.212	1091.01	174.3	5.5
2000	6713.575	1275.02	139.3	9.9
2001	6895.198	1325.34	31.8	10.4
2002	7795.758	1255.21	233.8	7.7
2003	9913.518	1356.36	134.8	7.5
2004	11411.07	2612.38	137.6	17.0
2005	14610.88	(21,945.2)	20.5	28.3
2006	18564.59	5,529.1	3.5	42.3
2007	20657.32	8,786.7	3.6	51.3
2008	24296.33	14,772.0	3.7	53.0
2009	24794.24	(4,952.3)	3.9	42.4
2010	54612.26	(16,073.1)	4.6	32.3
2011	62980.4	(19,911.5)	5.7	32.6
2012	71713.94	(15,808.3)	6.5	43.8
2013	80092.56	(35,662.1)	8.8	42.8
2014	53493.79	(60,458.7)	9.7	34.2
2015	56309.18	(58,697.3)	11.5	30.7
2016	59901.49	(60,078.0)	11.1	37.5
2017	63105.34	(59,887.7)	11.8	39.1

Source: *Central Bank of Nigeria Statistical Bulletin, 2017*

(i) Short-run data presentation

$RGDP_t = 16631.64 – 0.379261EDS_t – 0.010884ER_t – 0.908425NFIN_t$

t-tests = (-1.42) (-0.041) (-4.74)

f-test =9.3, R^2 =0.56, DW = 0.77

Normality Test (probability) = 0; Heteroskedasticity Test: Breusch-Pagan-Godfrey = f[prob. =0.2082]
Chow Breakpoint Test: 2000 = 0.0097

(ii) Explanation of some terms

The result shows that R^2 =56% of the changes in the dependent variable are explained by the changes in the independent variables. The overall model as indicated by the F-test is statistically significant at 5% level while the DW shows there is the presence of serial autocorrelation. Specifically, the regression analysis is found to be spurious.

(iii) Diagnostic Tests

1. Normality test shows that the series are normally distributed with the probability of 0. This implies and justifies that the series can be used for the analysis.
2. The presence of multi-collinearity among the independent variables can be determined as shown by the regression results of the analysis. There is, however, a high R^2 and some insignificant t-values.
3. Heteroscedasticity test shows that the variance of the analysis is constant over time with the f-probability of 0.00.
4. The chow-tests show that there are no structural breakpoints in the series at the period chosen. We discard the alternative hypothesis which states that there is structural breakpoint if the prob. is <0.05.

Short Run Analysis

The apriori signs for the explanatory variables NFIN and ER were violated as it showed a different sign while that of EDS showed the expected apriori sign. The result shows that only NFIN is statistically significant at 5% level of significance.

Econometric Tests
Granger Causality

Null Hypothesis:	Obs	F-Statistic	Prob.
EDS does not Granger Cause RGDP	24	0.17384	0.8418
RGDP does not Granger Cause EDS		0.09186	0.9126
ER does not Granger Cause RGDP	24	0.04117	0.9598
RGDP does not Granger Cause ER		0.54883	0.5865
NFIN does not Granger Cause RGDP	24	0.75117	0.4853
RGDP does not Granger Cause NFIN		6.52479	0.0070
ER does not Granger Cause EDS	24	240340.	1.E-42
EDS does not Granger Cause ER		40815.8	3.E-35
NFIN does not Granger Cause EDS	24	0.04339	0.9576
EDS does not Granger Cause NFIN		0.09805	0.9071

NFIN does not Granger Cause ER	24	0.18650	0.8314
ER does not Granger Cause NFIN		0.03053	0.9700

Granger Causality Test: The test shows there is only a unidirectional cause between the dependent variable and the NFIN and the RGDP. This shows that RGDP granger causes NFIN at f = 6.52, at 2nd differencing. This gives credence to the use of the variable in the model.

ADF Tests: The unit root tests show that all the variables are not stationary at levels but at first differencing. However, this stationarity does not show if there is a long run relationship amid the variables or not. Nonetheless, the tests met the criteria for the conduct of co-integration test using Johansen method due to its applicability in known breakpoint test results.

Long Run Analysis

Johansen Co-integration Test: This reveals whether there is a long-term relationship among the variables used.

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.999960	451.7819	47.85613	0.0001
At most 1 *	0.999674	208.6951	29.79707	0.0001
At most 2 *	0.441248	16.01449	15.49471	0.0417
At most 3	0.081691	2.045318	3.841466	0.1527

Trace test indicates 3 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The outcome shows, with the trace statistics, there is a long-term relationship among the variables used. There are at least 2 co-integrating equations in the analysis to necessitate for the analysis of the Error Correction Mechanism (ECM).

ECM Test: Error Correction Mechanism corrects the short-term errors of the long-term relationships found using the co-integration analysis. The ECM shows that the apriori signs of the variables were met while the ECM is properly signed. The analysis will be based on the second-order derivative of the parsimonious ECM due to its agreeability with the apriori, statistical expectations. The ECM is also properly signed. More so, the ECM shows that the error is being corrected at the rate of 69% annually. This also shows a good sign.

ECM Regression analysis
ECM – Model
Parsimonious Error Correction Mechanism

Dependent Variable: D(RGDP)
Method: Least Squares
Date: 01/08/18 Time: 03:48
Sample (adjusted): 1990 2017
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.990012	0.027835	1.522733	0.1399
D(RGDP(-1))	0.988328	0.326593	4.012178	0.0000
D(RGDP(-2))	1.042737	0.324291	3.237722	0.0015
D(NFIN(-1))	0.206337	0.122299	3.122661	0.0035
D(NFIN(-2))	0.502906	0.121815	3.694029	0.0118
D(EDS(-1))	-5.187837	6.187739	3.727221	0.0005
D(EDS(-2))	-5.298806	6.198335	2.933689	0.0078
D(ER(-1))	7.110037	3.866321	2.755387	0.0071
D(ER(-2))	5.202906	2.120015	2.110689	0.0001
ECM(-1)	-1.344574	0.378498	-3.552390	0.0015

R-squared	0.728304	Mean dependent var	-0.017812
Adjusted R-squared	0.669132	S.D. dependent var	0.138210
S.E. of regression	2.123686	Akaike info criterion	-1.174782
Sum squared resid	1.397753	Schwarz criterion	-0.899957
Log likelihood	24.79652	Hannan-Quinn criter.	-1.083686
F-statistic	2.012602	Durbin-Watson stat	3.892210
Prob(F-statistic)	0.053169		

Source: Computed from EView 7.0 (2019)

$RGDP_t = 0.99 + 0.2NFIN_t - 5.18EDS_t + 7.1ER_t$
t-tests = (3.12) (3.72) (2.75)
f-test =2.0, R^2 =0.73, DW = 3.8, ECM (-1)

Explanation of some terms, tests and discussions of hypotheses

The result shows that R^2 =73% which means that 73 per cent of the changes in the dependent variable are explained by the changes in the independent variables. F-test shows that the overall model is statistically significant at 5% level while the DW shows there is no presence of serial autocorrelation.

H_{01}: the result shows that net foreign investment is positively related to the RGDP over the period. As net foreign investment increases by a unit or percentage, the real gross domestic product (RGDP) increases by 0.2 units and vice versa. Again, the result shows that net foreign investment

is statistically significant at 5% level of significance. Thus the null hypothesis is discarded and the alternative be accepted by concluding that the relation between net foreign investment and real gross domestic product is significant over the period under study.

H_{02}: Again, external debt servicing (EDS) as shown by the result is negatively related to the real gross domestic product (RGDP) over the period as expected apriori. As the cost for external debt servicing increases by a unit or percentage, the real gross domestic product decreases by 5.2 percent and vice versa. Further, the result displays that external debt servicing (EDS) is statistically significant at 5% level of significance using the t-value. Thus the null hypothesis is discarded and the alternative be accepted by concluding that the relation between external debt servicing and real gross domestic product is significant over the period under study.

H_{03}: The result for hypothesis three also revealed that External Reserves (ER) has a positive and significant relationship with real gross domestic product (RGDP). The result shows that as external reserves increases by a percent, real gross domestic product increases by 7.1% and vice versa. As shown in the result, the t-value is statistically significant at 5%. Thus the null hypothesis is discarded and the alternative be accepted by concluding that the relation between external reserve and real gross domestic product is significant.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The findings revealed that not all capital flights impacts negatively on economic growth and this negates most studies (see David 2012, Ajayi 2012 and De Boyrie 2011). While the external debt servicing is found to have a negative effect on the economy, the net foreign investment and the external reserves were found to have positive effects on the economy as they also serve as sources of foreign exchange revenue to the country. Results of the study also revealed that capital flight with external debt servicing has a significant negative impact on economic growth. This is in line with the a priori expectation.

Developing countries venture into borrowing to enhance economic development and this is done by bridging savings and investment gap. The empirical result shows that an increase in external debt will bring about a decrease in gross domestic product as this consequently increases the debt servicing stock of the country besides puts pressure on the foreign reserves and foreign exchanges. The negative relationship among external debt and economic growth implies that increase in external borrowing by the Nigerian government fails to transform into increase in the level of economic growth. This is an indication that the borrowed funds were diverted to other uses that do not translate to economic growth.

These findings infer that debt relief stratagems will bring a lasting benefit to Nigeria simply if complemented by measures to thwart a new cycle of external borrowing and capital flight. This will warrant substantial restructurings on the part of both creditors and debtors in promoting responsible lending with liable debt management. In regards to the aforementioned, we conclude that;

(i) The relationship amid net foreign investment and economic growth in Nigeria is significantly positive.
(ii) There exists a negatively significant relationship amid external debt servicing and economic growth in Nigeria.
(iii) The relationship between external reserves and economic growth in Nigeria is significantly positive.

Recommendations

(i) Policy-makers and the relevant authorities should heed more attention than ever to the issue of capital flight of external debt servicing in order to stem its counter-productive effects on economic growth
(ii) Basically, since the External Debt Servicing (EDS), which is a major leakage in the economy, has a negative relationship with the RGDP, the government and the monetary authorities should do well to have a firm grip on the type and form of debt borrowed. Specifically, unproductive debts should be avoided in its entirety whether foreign or local as they lead to high debt servicing profile that jeopardises the chances of a country in making meaningful economic progress.
(iii) The study recommends a fiscal discipline so that deficit as a proportion of the gross domestic product is kept in check because this is crucial to the maintenance of macroeconomic stability and appropriation of interest rate. If for any reason, there is need to borrow from an external body, the money must be channelled into productive ventures that actually service the loans besides contributing to the GDP.
(iv) Since unproductive utilization of loans is reflected in misappropriation by political officeholders and later transfer to foreign private account, efforts should be made to certify strict monitoring of public projects, liability and transparency.
(v) The study also discovered that not all capital flights are negative to the economy. The country has series of investments in other countries and these investments yield foreign exchange to the country. Therefore, efforts to increase these investments both in the short and long runs should be encouraged as they have a positively significant effect on the economic growth of Nigeria.
(vi) The external reserves is also seen, priory, to have a positive and significant effect on the GDP. This positivity is in the form of interests the money yields to the economy. This has also helped the country to off-set some of the loans borrowed. In addition, the external reserves also go to prove that the country/economy is relatively stable for business and this attracts the required investors to the country. It is highly recommended that the government and the monetary authorities should strive to increase the foreign reserves as this has the required impetus to increase the economic growth of the country. This attitudinal change involves seriousness and commitment on the part of government and its functionaries.
(vii) The study also recommend that government bureaucrats should place their public duties ahead of their personal gains, by so doing the economy will experience a boost as enough funds will be available to execute developmental projects such as power generation and opening of new vibrant sectors.
(viii) Of utmost prominence is the provision of suitable atmosphere for business to thrive. It is more important to make the domestic economy more attractive for the investors by creating a wider

menu of domestic financial assets on which domestic capital can be assessed and invested at lower rate comparable to foreign financial instruments.

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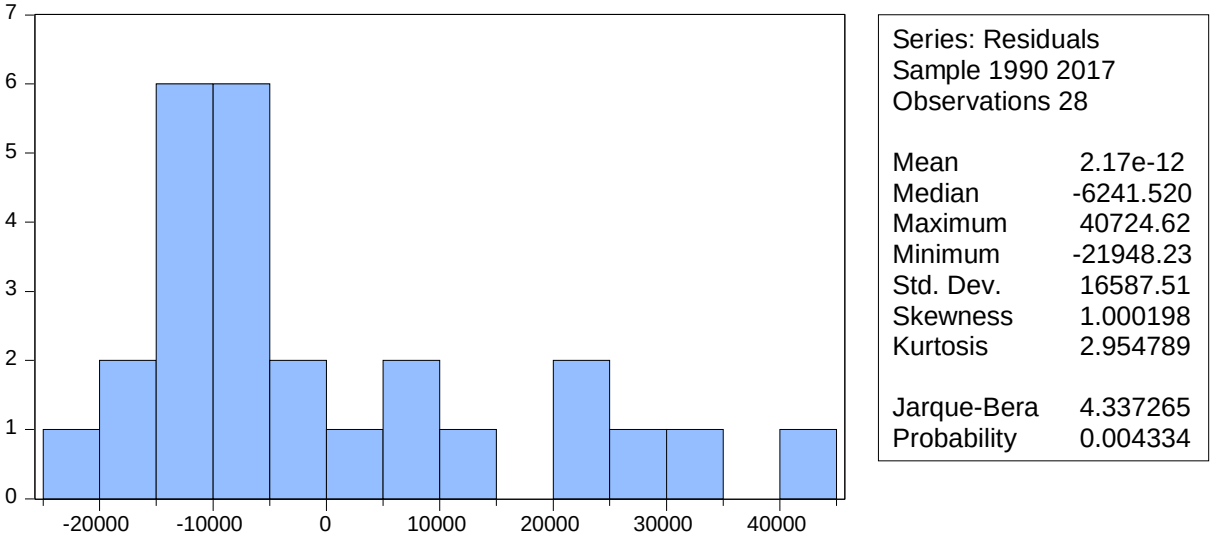
APPENDIX

Dependent Variable: RGDP
Method: Least Squares
Date: 01/09/19 Time: 11:00
Sample: 1990 2017
Included observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16631.64	4071.941	4.084450	0.0005
EDS	-0.379261	0.266987	-1.420520	0.1695
ER	-0.010884	0.259890	-0.041879	0.9670
NFIN	-0.908425	0.191535	-4.742857	0.0001

R-squared	0.559105	Mean dependent var	21116.74
Adjusted R-squared	0.498983	S.D. dependent var	24981.20
S.E. of regression	17682.34	Akaike info criterion	22.53916
Sum squared resid	6.88E+09	Schwarz criterion	22.73271
Log likelihood	-289.0091	Hannan-Quinn criter.	22.59489
F-statistic	9.299489	Durbin-Watson stat	0.765082
Prob(F-statistic)	0.000365		

Normality Test



Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.643653	Prob. F(3,22)	0.2082
Obs*R-squared	4.760503	Prob. Chi-Square(3)	0.1902
Scaled explained SS	3.331359	Prob. Chi-Square(3)	0.3433

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/09/19 Time: 11:01
Sample: 1990 2017
Included observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.42E+08	83695334	2.894547	0.0084
EDS	-5158.592	5487.702	-0.940028	0.3574
ER	-607.1278	5341.830	-0.113655	0.9105
NFIN	-7039.430	3936.849	-1.788087	0.0875

R-squared	0.183096	Mean dependent var	2.65E+08
Adjusted R-squared	0.071700	S.D. dependent var	3.77E+08
S.E. of regression	3.63E+08	Akaike info criterion	42.40080
Sum squared resid	2.91E+18	Schwarz criterion	42.59435
Log likelihood	-547.2104	Hannan-Quinn criter.	42.45653
F-statistic	1.643653	Durbin-Watson stat	1.051312
Prob(F-statistic)	0.208163		

Chow Breakpoint Test: 2000
Null Hypothesis: No breaks at specified breakpoints
Varying regressors: All equation variables
Equation Sample: 1990 2017

F-statistic	4.618193	Prob. F(4,18)	0.0097
Log likelihood ratio	18.36105	Prob. Chi-Square(4)	0.0010
Wald Statistic	18.47277	Prob. Chi-Square(4)	0.0010

Unit Root at Levels

Null Hypothesis: RGDP has a unit root
Exogenous: Constant
Lag Length: 5 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.417284	0.9999
Test critical values:	1% level	-3.808546	
	5% level	-3.020686	
	10% level	-2.650413	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDP)
Method: Least Squares
Date: 01/09/19 Time: 11:03
Sample (adjusted): 1996 2017
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP(-1)	2.333127	0.965185	2.417284	0.0311
D(RGDP(-1))	-2.768660	1.250560	-2.213935	0.0453
D(RGDP(-2))	-2.989166	1.369119	-2.183276	0.0479
D(RGDP(-3))	-3.205538	1.350540	-2.373523	0.0337
D(RGDP(-4))	-4.484790	1.441069	-3.112128	0.0083
D(RGDP(-5))	-3.445723	1.658095	-2.078121	0.0581
C	-597.4211	2609.244	-0.228963	0.8225

R-squared	0.652479	Mean dependent var	2670.091
Adjusted R-squared	0.492085	S.D. dependent var	9557.875
S.E. of regression	6811.724	Akaike info criterion	20.75990
Sum squared resid	6.03E+08	Schwarz criterion	21.10840
Log likelihood	-200.5990	Hannan-Quinn criter.	20.82793
F-statistic	4.067967	Durbin-Watson stat	2.118837
Prob(F-statistic)	0.016218		

Null Hypothesis: EDS has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.641070	0.0984
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EDS)
Method: Least Squares
Date: 01/09/19 Time: 11:05
Sample (adjusted): 1991 2017
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EDS(-1)	-0.425219	0.161002	-2.641070	0.0146
C	1399.773	2373.138	0.589841	0.5610

R-squared	0.232700	Mean dependent var	-969.9425
Adjusted R-squared	0.199339	S.D. dependent var	12276.42
S.E. of regression	10984.89	Akaike info criterion	21.52305
Sum squared resid	2.78E+09	Schwarz criterion	21.62056
Log likelihood	-267.0381	Hannan-Quinn criter.	21.55009
F-statistic	6.975251	Durbin-Watson stat	2.086509
Prob(F-statistic)	0.014600		

Null Hypothesis: NFIN has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.081923	0.9412
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(NFIN)
Method: Least Squares
Date: 01/09/19 Time: 11:05
Sample (adjusted): 1991 2017
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NFIN(-1)	-0.011726	0.143135	-0.081923	0.9354
C	-2412.904	2342.140	-1.030213	0.3136

R-squared	0.000292	Mean dependent var	-2352.785
Adjusted R-squared	-0.043174	S.D. dependent var	10888.46
S.E. of regression	11121.03	Akaike info criterion	21.54768
Sum squared resid	2.84E+09	Schwarz criterion	21.64519
Log likelihood	-267.3460	Hannan-Quinn criter.	21.57473
F-statistic	0.006711	Durbin-Watson stat	2.149379
Prob(F-statistic)	0.935416		

Unit Root At First Differencing
Null Hypothesis: D(RGDP) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.709058	0.0119
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDP,2)
Method: Least Squares
Date: 01/10/19 Time: 05:43
Sample (adjusted): 1995 2017
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1))	-1.547592	0.417246	-3.709058	0.0019
D(RGDP(-1),2)	0.549202	0.381374	1.440061	0.1691
D(RGDP(-2),2)	0.886302	0.366101	2.420920	0.0277
D(RGDP(-3),2)	1.011230	0.284923	3.549129	0.0027
C	3925.703	2174.128	1.805644	0.0898

R-squared	0.718276	Mean dependent var	119.3034
Adjusted R-squared	0.647846	S.D. dependent var	13112.18
S.E. of regression	7781.112	Akaike info criterion	20.96104
Sum squared resid	9.69E+08	Schwarz criterion	21.20974
Log likelihood	-215.0909	Hannan-Quinn criter.	21.01502
F-statistic	10.19831	Durbin-Watson stat	1.602669
Prob(F-statistic)	0.000268		

Null Hypothesis: D(EDS) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.964114	0.0001
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EDS,2)
Method: Least Squares
Date: 01/10/19 Time: 05:45
Sample (adjusted): 1992 2017
Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EDS(-1))	-1.235519	0.207159	-5.964114	0.0000
C	-1144.004	2551.423	-0.448379	0.6583

R-squared	0.617861	Mean dependent var	104.4053
Adjusted R-squared	0.600491	S.D. dependent var	19708.72
S.E. of regression	12457.24	Akaike info criterion	21.77765
Sum squared resid	3.41E+09	Schwarz criterion	21.87582
Log likelihood	-259.3318	Hannan-Quinn criter.	21.80369
F-statistic	35.57066	Durbin-Watson stat	2.069630

Null Hypothesis: D(ER) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-15.94445	0.0000
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(ER,2)
Method: Least Squares
Date: 01/10/19 Time: 05:45
Sample (adjusted): 1993 20117
Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ER(-1))	-2.160633	0.135510	-15.94445	0.0000
D(ER(-1),2)	0.384636	0.077929	4.935747	0.0001
C	-2324.275	1516.571	-1.532585	0.1410

R-squared	0.966017	Mean dependent var	-3097.171
Adjusted R-squared	0.962619	S.D. dependent var	37571.99
S.E. of regression	7264.276	Akaike info criterion	20.74043
Sum squared resid	1.06E+09	Schwarz criterion	20.88854
Log likelihood	-235.5150	Hannan-Quinn criter.	20.77768
F-statistic	284.2635	Durbin-Watson stat	0.620994
Prob(F-statistic)	0.000000		

Null Hypothesis: D(NFIN) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.174147	0.0003
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(NFIN,2)
Method: Least Squares
Date: 01/10/19 Time: 05:46
Sample (adjusted): 1992 2017
Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NFIN(-1))	-1.095833	0.211790	-5.174147	0.0000
C	-2814.373	2360.254	-1.192403	0.2458

R-squared	0.548920	Mean dependent var	-48.25933
Adjusted R-squared	0.528416	S.D. dependent var	16400.18
S.E. of regression	11262.33	Akaike info criterion	21.57597
Sum squared resid	2.79E+09	Schwarz criterion	21.67414
Log likelihood	-256.9116	Hannan-Quinn criter.	21.60201
F-statistic	26.77179	Durbin-Watson stat	2.008933
Prob(F-statistic)	0.000035		

Granger Causality
Pairwise Granger Causality Tests
Date: 01/09/19 Time: 11:06
Sample: 1990 2017
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
EDS does not Granger Cause RGDP	24	0.17384	0.8418
RGDP does not Granger Cause EDS		0.09186	0.9126
ER does not Granger Cause RGDP	24	0.04117	0.9598
RGDP does not Granger Cause ER		0.54883	0.5865
NFIN does not Granger Cause RGDP	24	0.75117	0.4853
RGDP does not Granger Cause NFIN		6.52479	0.0070
ER does not Granger Cause EDS	24	240340.	1.E-42
EDS does not Granger Cause ER		40815.8	3.E-35
NFIN does not Granger Cause EDS	24	0.04339	0.9576
EDS does not Granger Cause NFIN		0.09805	0.9071
NFIN does not Granger Cause ER	24	0.18650	0.8314
ER does not Granger Cause NFIN		0.03053	0.9700

Cointegration
Date: 01/09/19 Time: 11:07
Sample (adjusted): 1992 2017
Included observations: 26 after adjustments
Trend assumption: Linear deterministic trend
Series: RGDP EDS ER NFIN
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.999960	451.7819	47.85613	0.0001
At most 1 *	0.999674	208.6951	29.79707	0.0001
At most 2 *	0.441248	16.01449	15.49471	0.0417
At most 3	0.081691	2.045318	3.841466	0.1527

Trace test indicates 3 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.999960	243.0868	27.58434	0.0001
At most 1 *	0.999674	192.6807	21.13162	0.0001
At most 2	0.441248	13.96918	14.26460	0.0556
At most 3	0.081691	2.045318	3.841466	0.1527

Max-eigenvalue test indicates 2 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

RGDP	EDS	ER	NFIN
6.54E-07	8.22E-05	-0.000210	5.85E-07
-8.76E-08	-9.30E-05	2.09E-05	9.71E-08
8.83E-05	3.17E-05	-7.50E-06	0.000136
5.86E-07	-1.60E-05	6.69E-07	9.69E-05

Unrestricted Adjustment Coefficients (alpha):

D(RGDP)	-81.43291	751.8666	672.0329	2411.025
D(EDS)	3636.146	3272.439	-14.18493	1.465798
D(ER)	17938.01	758.0047	-40.08640	12.92701
D(NFIN)	-552.1839	-867.3005	-6730.590	882.5411

1 Cointegrating Equation(s): Log likelihood-882.0414

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	EDS	ER	NFIN
1.000000	125.6980	-321.7021	0.894364
	(0.28465)	(0.48132)	(0.21862)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-5.33E-05
	(0.00131)
D(EDS)	0.002378
	(0.00050)
D(ER)	0.011732
	(0.00012)
D(NFIN)	-0.000361
	(0.00164)

2 Cointegrating Equation(s): Log likelihood-785.7011

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	EDS	ER	NFIN
1.000000	0.000000	-332.8427	1.163302
		(1.01942)	(0.66769)
0.000000	1.000000	0.088629	-0.002140
		(0.00755)	(0.00494)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.000119	-0.076620
	(0.00132)	(0.24857)
D(EDS)	0.002092	-0.005422
	(1.0E-05)	(0.00196)
D(ER)	0.011665	1.404166
	(2.1E-05)	(0.00400)
D(NFIN)	-0.000285	0.035267
	(0.00165)	(0.30991)

3 Cointegrating Equation(s): Log likelihood-778.7165

Normalized cointegrating coefficients (standard error in parentheses)

RGDP	EDS	ER	NFIN
1.000000	0.000000	0.000000	1.546268
			(0.28337)
0.000000	1.000000	0.000000	-0.002242
			(0.00474)
0.000000	0.000000	1.000000	0.001151
			(0.00216)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	0.059225	-0.055289	0.027808
	(0.17629)	(0.25576)	(0.42234)
D(EDS)	0.000839	-0.005873	-0.696536
	(0.00137)	(0.00198)	(0.00327)
D(ER)	0.008126	1.402893	-3.757997
	(0.00272)	(0.00395)	(0.00652)
D(NFIN)	-0.594633	-0.178371	0.148539
	(0.17024)	(0.24700)	(0.40787)

ECM – Model
Parsimonious Error Correction Mechanism
Dependent Variable: D(RGDP)
Method: Least Squares
Date: 01/08/19 Time: 03:48
Sample (adjusted): 1990 2017
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.990012	0.027835	1.522733	0.1399
D(RGDP(-1))	0.988328	0.326593	4.012178	0.0000
D(RGDP(-2))	1.042737	0.324291	3.237722	0.0015
D(NFIN(-1))	0.206337	0.122299	3.122661	0.0035
D(NFIN(-2))	0.502906	0.121815	3.694029	0.0118
D(EDS(-1))	-5.187837	6.187739	3.727221	0.0005
D(EDS(-2))	-5.298806	6.198335	2.933689	0.0078
D(ER(-1))	7.110037	3.866321	2.755387	0.0071
D(ER(-2))	5.202906	2.120015	2.110689	0.0001
ECM(-1)	-1.344574	0.378498	-3.552390	0.0015

R-squared	0.728304	Mean dependent var	-0.017812
Adjusted R-squared	0.669132	S.D. dependent var	0.138210
S.E. of regression	2.123686	Akaike info criterion	-1.174782
Sum squared resid	1.397753	Schwarz criterion	-0.899957
Log likelihood	24.79652	Hannan-Quinn criter.	-1.083686
F-statistic	2.012602	Durbin-Watson stat	3.892210
Prob(F-statistic)	0.053169		

Source: Computed from EView 9.0 (2019)