Impact analysis of foreign capital inflows on Nigeria's economic growth

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Abstract

The study analysed the influence of Foreign Capital Inflow on Economic Growth in Nigeria from 1985 to 2021 with Autoregressive Distributed Lag (ARDL) model approach. The ARDL-ECM speed of adjustment suggests that around 93% of the imbalance from the previous period is corrected and brought back to equilibrium in the current period. FDI and Official Development Assistance produce significant positive effects on Economic growth in short and long-run periods. Portfolio Foreign Investment (POFI) significantly affects Economic Growth Rate (EGRR) in negative ways throughout the short-term and long-term. Both Exchange Rate (ECXR) and Inflation Rate (INFR) negatively affect Economic Growth Rate (EGRR) in the short term but whereas External Debt (EXTD)has a negligible negative impact on EGRR in both the short and long term. However, over time, ECXR has a positive but small impact on EGRR, while INFR has a negative and large impact on EGRR. The research suggests that in order to promote investment in Nigeria; the government should establish a favourable environment by refraining from imposing excessive taxes on businesses and enterprises. Additionally, any EXTD incurred by the government should be directed solely towards productive investments, particularly in infrastructure and capital projects.

Keywords: Foreign Capital Inflow, FDI, Portfolio Investment, Office Development Assistance (ODA), External Debt, Economic Growth, Nigeria and ARDL

Introduction

Foreign capital influx has become an extremely good mechanism for countries, especially developing economies, to address their funding needs. In addition to increased cross border capital input to increase domestic savings, foreign capital inflow has been proven to reduce the transfer of technology, facilitate international access to external markets, as well as improve global integration. Due to lack of funding, the government has lost the capacity to undertake public spending related to infrastructure and social services for domestic demand boosting and private sector participation as well as high rates of economic growth for transformative purposes (Agunbiade and Akomolafe, 2018; Onyeiwu, 2015).

Secondly, most developing economies have had to resort to inflows of foreign money as a substitute for restrictions on deposits and on foreign currency. Development of countries internationally particularly in Africa is essential in addressing the situation of resource gaps over extended time and disturbances in debt repayments and resource inflows, as well as anomalies in domestic assets or savings, and investment opportunities (Anyanwu, 2012). Our discussion focuses on the important roles being played by FCIs as sources of funds, cutting edge technology and innovations into developing from developed countries that play important roles in the development of such economies (Okoro *et al.* 2019, Adekunle and Sulaimon 2018, Sinha, Majra, Hutchins and Saxena 2018, Azam, Shahbaz, Kyophilavong and Abbas 2016, Fambon 2013). There are various channels of Global capital flows including FDI, ODA, and REM (remittances). Several international capital inflows converge to become Nigeria's overall receipt of international capital. Foreign capital investment results from all the funding streams which combine to form a single pool of investment.

There previous studies have revealed the fact that foreign capital inflow has the role of promoting and raising the level of economic development in Nigeria (Acquah and Ibrahim (2020); Ekwe and Inyiama (2014); Agbloyor, Abor, Adjasi, and Yawson (2014); Obiechina and Ukeje (2013); Ajide (2014)). Yet, several studies indicating that foreign capital inflow can supplement the indigenous capital of the developing economy by undertaking the required development projects for the growth and eradicating poverty among the people. (Acquah & Ibrahim, 2020; Adeola, 2017).

More than any other continent on the planet, African governments used to develop them rely on external capital. Foreign capital inflows to sub-Saharan Africa (SSA) have accumulated to an amount of about $568 billion (approx. 15% of Africa's gross domestic product (GDP)) by (Ezeaku et al., 2017). Niger, according to research, is the most prominent member country of African nations regarding international capital inflows. By 1999, 2007 and 2016 Nigeria collected 11 per cent of all African capital inflows for that year; and 70 per cent of all West African capital inflows, UNCTAD reports indicate. Niger was one of the top five African nations that attracted international investment.

Nigeria's capital March 2021 inflow data was recorded as 52,654,783.6 USD. This is as

opposed to a value from the previous month of 39,787,970.860 USD. Data on FDI is updated on a monthly basis. Over the period from January 2007 to March 2021 there were in total 178 recorded cases, and the average value was 86,265,175.570 USD. The data peaked at 824,311,383.680 USD in July 2007, the same greatest number, repeating it again in August 2009 at 1,245,422.000 USD (CBN, 2021). Based on the realisation that in 2013 Nigeria had FPI and FDI (US$6.4 billion) which is the second after South Africa, the report of African Economic Outlook of Abel and Nikki (2017) was reviewed.

The NBS in 2017 stated that the capital inflows into Nigeria in 2017 stood at $12.2 billion, a 138.6 increase from 2016. NBS (2017) indicates that as at the fourth quarter of 2017, the country's investment capital was $5, 382.9 million. Other than that, in short hand, this is a yearly increase of 247.5%, and a quarterly increase of 29.9%. In 2017, Nigeria's capital import stood at $12,228.6 million, which was $7,104.4 million or 138.7 percent above 2016. However, Nigeria is the second country whose recipient of foreign capital inflows is affected well but with less impact on the economy. The country has all necessary resources for attracting foreign investment through capital inflow yet manages to establish unending obstacles for its effective adoption (CBN, 2019). Investigating whether foreign capital inflow via FDI, foreign loans and official development interest has any effect on the Nigerian economy? There are still rising figures to this day. For example, foreign debt rose from $60.04 billion in 2019, $70.52 billion in 2020 and $76.21 billion in 2021. For example, even though the FDI has increased from $23.05 billion to $23.85 billion to $33.13 billion for the years 2019, 2020, 2021 respectively, and ODA from $3.28 billion and $3.38 billion for 2019 to 2020 (Word Bank Development Indicators, 2021). Else, can Nigeria live without foreign capital inflow and her exact influence on Nigeria times?

Several economic studies have been conducted to investigate foreign capital inflows' impact on the Nigeria economy. Citizens of Nigeria need to address capital inflows' influence on economic expansion according to studies by Okoro *et al.* (2019), Leonard & Ihensekhien (2022), Belke & Volz (2018), and Chigbu, Ubah & Chigbu (2015). Portfolio investment together with official development assistance and foreign direct investment and external debt made up the capital inflow components that received attention in this study. In their previous research, Chigbu *et al*. (2015), Chukwu, Chimarume, & Ezeaku (2021), and Chude & Chude (2023) did not involve inflation, EXRT, foreign reserves. Nevertheless, this study did include, acknowledge, and empirically investigate these control elements. Several studies conducted by Okoro et al. (2019) and Arawoma (2014) together with Ogbonna (2015) and Azebi and Dein (2020) present evidence that capital inflows remarkably affect economic growth rates. The results shown by Olusanya (2013), Okeke (2018), Azeez, Dada and Aluko (2014) together with Ogunkola *et al*. (2006) diverged from the initial findings. Amongst the many recommendations derived from the research work was that capital flows were to be reevaluated, as to their role in economic growth in Nigeria. This investigation examines the impact of foreign capital inflows

on economic growth in Nigeria from 1985 to 2021.

Literature Review

Foreign Capital Inflow

Through the years, the definition of foreign capital inflow has been by scientists and researchers. Mwilima (2003) explains that foreign capital inflow stands as an investment process that acquires substantial ownership control through acquiring 10 percent minimum shares or voting stock in foreign territories. Foreign direct investors investments in different economies are referred to as foreign capital inflows. Usually, any investment made by the citizens of a foreign country is directed towards developing one and is usually made while investing into these countries. It involves a large amount of transfer of resources from industrialised nations to developing nations (IMF 1999; Githaiga 2020, Williams 2016, Sobiech 2019). Foreign Capital Influx is defined in (Chigbu *et al*,2015) as involving the introduction of foreign financial resources into a nation with the aim of investment, import (trade) and enhance firm production. Four primary sources of international capital flow into Nigeria include Foreign Direct Investment (FDI) in conjunction with Foreign Aid (government development assistance) alongside remittance payment and external debt and external revenue (Okoro *et al*, 2019).

Just like the definition of foreign capital inflow by Yakubu (2019), foreign capital inflow encompasses investment in a country by a firm or a government that requires a physical presence of the assets. The definition of foreign capital influx indicates how multinational corporations purchase ownership interests in foreign assets and direct production operations (Mallampally and Sauvant, 2019). Ayanwale (2017) explains that a direct investment link requires investors to own at least 10% of ordinary shares or voting stock to operate as an investment requirement.

Economic Growth

In simple term, economic growth refers to an economy's ongoing increase in the production of goods and services. The assessment of general economic growth relies primarily on the gross national product (GNP) together with the gross domestic product (GDP). Jhingan (2005) states that economic growth equates to increased expressions of real gross domestic product (GDP) and total income measures where annual percentage changes form the basic measurement foundation. Most measurements evaluating economic growth feature the Gross Domestic Product (GDP) and the Human Development Index (HDI). The HDI is a measure which to define a nation's level of development is considered, based on factors like literacy rate, per capita income and life expectancy at birth (Jhingan 2005). Aggregate product is the increase in an economy's aggregate product. An increase in aggregate output is not always, but is frequently related to an increase in average marginal productivity. This trend leads to improved quality of life or material well being because an increase in personal income stimulate people to spend more (Chikalipah, 2021).

Theoretical Framework

The theoretical ground work for profit from the utilisation of foreign capital is established by Chenery and Strout in the two-gaps in model in 1966. According to theory developing countries require inbound foreign investments to resolve savings-investment shortages along with foreign exchange deficits. Less developed countries according to the theory should overcome two limiting obstacles known as saving gap and foreign exchange gap to achieve an optimal growth pace. The (M X) and (I S) anomalies are identified as the accounting procedures. The obvious reason that a country has a balance of payments deficit is that its additions to reserves fall short of its expenditures. On the flipside, an import surplus over exports means that the resources being used to produce goods are being utilised more than they are produced. As suggested by Chenery and Strout (1956), foreign aid is employed to cover the two deficits so as to achieve the target rate of economic growth. Chenery and Bruno (1962) and Chenery and Adelman (1966) conducted research which showed that a savings gap would remain fixed provided the domestic savings rate falls short of investment requirements for achieving growth targets.

Foreign assistance can be used to plug in the missing gap of savings to realize the desired economy growth rate. Also, there is a suggested approach in which foreign exchange needs, on projected basis, are made to be linked with the earnings from net exports on a permanent basis. In the event when the revenues from the goods and services exported do not satiate the requirements for foreign currency, a foreign exchange gap is said to occur. It can be fixed by getting help in this form of foreign aid. The identities of national income accounting in the technique where aggregate expenditure equals aggregate income is adhered to by the fundamental expression of the two gaps.

$$E - Y \equiv I - S \equiv M - X \equiv F \quad (1)]$$

In this context we observe seven variables which include E, Y, I, S, M, X and F. The economic model links the national expenditure E to national income Y and it incorporates components such as investment I and savings S and imports M and exports X together with net capital inflow F.

The economy needs foreign capital through F as well as F to balance the income difference between total output Y and aggregate expenditure E.

The deficit occurs because savings do not match the required investment level which creates a savings gap (I S) alongside export revenues being lower than import payments which results in a foreign exchange deficit (M X). Foreign aid requirements depend entirely on the current level of the shortage that needs to be solved. According to economists the economy faces a savings constraint when the savings deficit surpasses foreign exchange gap level. The economy encounters foreign exchange limitations whenever the savings deficit exceeds the domain of foreign exchange earnings.

Each gap possesses its distinctive character so the necessary foreign assistance should be tailored to match these unique characteristics. A mechanism exists for domestic commercial banks to enable their local investor clients to participate in global financial markets while using HIC savings to bridge both savings and

forex gaps in their economies. Excess domestic investment becomes possible to fund through arriving capital. Bender and Lowenstein (2005) explain that FDI and POFIby foreigners and official development aid (ODA) serve as examples of capital inflows.

Thus, this study adopted the two gaps model because it believed that a gap had to be filled by foreign aid. In a way, foreign capital inflows are necessary for emerging economies to grow. Capital inflows from this study include FDI, ODA and foreign loans. Specifically, EGRR is mathematically described as f(FDI, ODA, EXTD, POFI).

Where

EGRR = GDP Growth rate as proxy for economic growth

FDI = Foreign Direct Investment

ODA = Official Development Assistance

EXTD = External Debt

POFI = Portfolio Investment

Finally, as shown in section three, these are the factors investigated and also tested in this work as sources of foreign capital inflows into the Nigerian economy, and the EXRT and INFR as control variables.

Empirical Review

Chude and Chude (2023) conducted a study of foreign capital inflow effects on Niger's economic growth during the period from 1981 to 2021. The researchers employed two analysis methods which were Ordinary Least Squares (OLS) and Error Correction Model (ECM). Research findings indicate a statistically significant impact of foreign aid on the results. Statistical and favorable relationships exist between economic growth and foreign direct investment levels. The statistical evidence shows no significant association between workers' remittances yet a negative relationship does exist. Research results show Niger's economy benefits strongly from foreign capital entering the country.

Ejelonu and Okafor (2022) conduct a new analysis of N capital inflows affecting developing nations' manufacturing sector and their outcomes for Nigeria's domestic manufacturing industries. Empirical results from this research study show that the involved variables demonstrate temporary linkages. The assessment focuses on determining how effective the Nigerian industrial sector value remains in relation to exchange rates (EXRT) and foreign direct investment (FDI). A positive correlation was observed. However, Relationship Exists Between INTR and PFI(FPI) both reducing manufacturing productivity (MANU). A rise in PFI leads to a manufacturing capacity reduction of the local industry by 2.50 percent.

The examination of International capital inflows on Nigeria's economic growth used the Harrod-domar growth model according to Leonard and Ihensekhien (2020). The study examines the growth patterns between real GDP expansion, FDI, ODA, personal remittances (REM) EXTD and. Worldwide capital transfers show an extremely strong

relationship that directly contributes toward economic development.

Okoro *et al*. (2019) applied VAR model for understanding the effect of foreign capital inflows on Niger's economic growth between 1986 and 2016. The flow of foreign capital into Nigeria through FDI and ODA and REM and EXTDS represented the principal channels during the observation period. The main dependent measure in this analysis consisted of evaluating gross domestic product (GDP) growth rates. The research used Harrod Domar growth model as its theoretical basis to apply Johansen co integration together with ordinary least square (OLS) methods as testing approaches. Strong evidence revealed how extended foreign investment in Niger led to improved economic performance within the nation. The OLS investigation demonstrates that REM and FDI are playing an extremely vital role which supports beneficial economic growth. The EXTDS and ODA initiative failed to have any measurable impact on economic growth rates in the country. The document demonstrates foreign investment operates as a crucial instrument to enhance Niger's economic growth rate.

Ikpesu (2019) conducted analysis of capital movement effects on investment in Niger. The investigation conducted its analysis through application of the two gap method proposed by Chenery and Strout. The financial inflows demonstrate a massive impact on economic expansion levels. Adekunle and Suliamon (2018) researched the economic growth and foreign capital inflows relationship in Niger through their latest investigation. The research drew its results from applying the ARDL estimating methodologies between 1986 and 2015. The research findings reveal a weak permanent relationship does not exist between economic development and foreign capital incoming amounts. Net FDI inflows proved to be beneficial for economic growth while net remittances together with net portfolio flows had a negative effect on growth. Both decreases in net EXTD and net foreign assistance levels led to positive growth effects while rises in their values produced negative economic growth results. Economic growth in Nigeria from 1980 through 2017 received attention from Ewubare and Nwabueze (2019) in their research. Data collected by the World Bank were used as secondary source information. The study utilized OLS with bias together with a regression analysis through an ARDL regression model. The study demonstrates that both public private partnership (PFI) and Foreign Direct Investment (FDI) influence the gross domestic product negatively at high levels. The study confirms that EMR demonstrates a positive correlation with GDP and ODA as well as EL.

Materials and Methods

The analysis of foreign capital investment effects on Niger state's economic growth depends on Ex Post Facto Design to assess time series data. The bound test of co integration which goes by the name of ARDL co integration reveals the long-term connections between nonstationary series. The Pesaran-Shin method from 1999 received improvement through Pesaran et al, 2001 during 2001. The ARDL cointegration method differs from previous methods because it eliminates the necessity for unit

root pretests. When the variables having different orders (I(0), I(1), or a combination) in levels are being dealt with and small sample sizes as well are encountered, then the ARDL co-integration method is valid. Furthermore, it is also robust when the underlying variables are related for only one long term. In the research, various aspects were evaluated with use of a variety of statistical tests on the model. To check for autocorrelation in the residuals at the specified delayed order, the instantiation of the Breusch-Godfrey Serial Correlation LM test was implemented. To check whether the residuals were homoscedastic, the White's heteroskedasticity test was performed. For testing normal distribution within the model variables the Jarque–Bera test was employed. The CUSUM test was performed to evaluate if the model would prove useful as a strategic decision-making instrument.

An analysis of EXRT foreign debt, perpetual reserve and more used secondary data obtained from the Statistical Bulletin of Central Bank of Nigeria along with the INFR method. FDI, ODA, portfolio investment and GDP growth received evaluation through World Bank development indicators.

Model Specification

The study adapted the model of Chude & Chude (2023).The model for this study is stated mathematically with modification to accommodate the presence of control variables such as INFR and external reserve (EXRT) that were omitted in Chude and Chude (2023) as: EGRR= f((LOG(FDI), LOG(ODA), POFI, LOG(EXTD), ECXR, INFR - - - 3.1

Econometric form of the model is presented as:

$EGRR = \beta_0 + \beta_1(LOG\ (FDI) + \beta_2\ Log(ODA) + \beta_3 POFI + \beta_4 log(EXTD) + \beta_5 INFR + \beta_6 ECXR + \mu$- 3.2

The ARDL-Model is expressed to be:

$$\Delta EGRR_t = \emptyset 0 + \sum_{j=1}^{m} \emptyset_{1j} \Delta EGRR_{t-j} + \sum_{j=1}^{m} \emptyset_{2j} \Delta FDI_{t-j} + \sum_{j=1}^{m} \emptyset_{3j} \Delta ODA + \sum_{j=1}^{m} \emptyset_{4j} \Delta POFI_{t-j}$$

$$+ \sum_{j=1}^{m} \emptyset_{5j} \Delta EXTD_{t-j} + \sum_{j=1}^{m} \emptyset_{6j} \Delta INFR_{t-j} + \sum_{j=1}^{m} \emptyset_{7j} \Delta ECXR_{t-j} + \theta_1 EGRR_{t-1} + \theta_2 FDI_{t-1}$$
$$+ \theta_3 ODA_{t-1} + +\theta_4 POFI_{t-1} + \theta_5 EXTD_{t-1} + \theta_6 INFR_{t-1} + \theta_7 ECXR_{t-1} + \theta_8 ECM_{t-1}$$
$$+ U_t - -3.3$$

Where:

EGRR = GDP growth rate as proxy to Nigeria's economic growth

Log(FDI) = log of FDI

Log(ODA) = log of ODA

POFI = POFI

Log(EXTD)= log of EXTD

EXCR = EXRT

INFR = INFR

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β_0 = Intercept

β_1, β_2, β_1…..β_6= Partial Slopes of the Linear regression model

ϕ_1- ϕ_7 = Long run Coefficients of ARDL Model

θ_1 - θ_7 = short run coefficients of ARDL_ECM

θ_8 = ECM Coefficients that measures the speed of adjustment

μt = Stochastic error term

A priori Expectation

This indicates the theoretical prediction for the positive or negative value of the parameters in the given model. The economic laws governing the interaction of variables being studied establish the a priori assumptions as follows: β1>0, β2>0, β3>0, β4>0, β5<0, and β6<0.

Variable Measurement and Discussion

In the proxy form of measurement of N Nigeria's economic growth, i.e. the GDP Growth Rate (EGRR), is used in percentage terms. Foreign debt of a nation is the total money it borrows or borrows from a country and with the agreement to repay at a later date. Their value is in the millions of dollars. Foreign direct investment (FDI) consists of capital investment which multinational corporations make in foreign country to acquire ownership and control industrial operation. Their value is in the millions of dollars. The EXRT is expressed as a percentage in relation to the US currency. POFI is measured in billions of dollars. INFR is measured in percentage.

Results & Discussion

The data are collected for the period of 1985 to 2021 on EGRR, FDI, ODA, POFI, EXTD, INFR and ECXR. They are analyzed as follows:

Descriptive Statistics

Table 1 Descriptive Statistics

	EGRR	FDI	ODA	EXTD	ECXR	INFR	POFI
Mean	4.233195	2.76E+09	1.61E+09	3.28E+10	119.7868	19.22265	-1.49E+09
Median	4.230061	1.88E+09	3.44E+08	3.03E+10	120.9700	12.00000	-1.83E+08
Maximum	15.32916	8.84E+09	1.14E+10	7.62E+10	399.9600	76.75887	3.69E+09
Minimum	-2.035119	1.93E+08	31709999	1.30E+10	0.890000	0.223606	-1.50E+10
Std. Dev.	3.861445	2.56E+09	2.22E+09	1.40E+10	109.5465	18.19040	3.58E+09
Skewness	0.460052	1.034822	2.669024	1.437611	0.875882	1.799650	-2.215228
Kurtosis	3.397218	2.902774	11.78699	5.158311	3.029695	5.190742	8.187796

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Jarque-Bera	1.548409	6.618189	162.9634	19.92637	4.732241	27.37124	71.75251
Probability	0.461070	0.036549	0.000000	0.000047	0.093844	0.000001	0.000000
Sum	156.6282	1.02E+11	5.95E+10	1.21E+12	4432.110	711.2382	-5.52E+10
Sum Sq. Dev.	536.7874	2.37E+20	1.77E+20	7.02E+21	432015.7	11912.07	4.62E+20
Observations	**37**	**37**	**37**	**37**	**37**	**37**	**37**

Source: E-view Output, 2023

Table 1 shows the descriptive statistics for EGRR, FDI, ODA, EXTD, ECXR, INFR and POFI for mean, media, minimum, maximum, standard deviation, Skewness, kurtosis and Jarque-Bera. The maximum value of 15.32916, 8.84E+09, 1.14E+10, 7.62E+10, 399.9600, 76.75887 and 3.69E+09 while the minimum value of -2.035119, 1.93E+08, 31709999, 1.30E+10, 0.890000, 0.223606 and -1.50E+10 for EGRR, FDI, ODA, EXTD, ECXR, INFR and POFI respectively. The average value for EGRR, FDI, ODA, EXTD, ECXR, INFR and POFI are; 4.233195, 2.76E+09, 1.61E+09, 3.28E+10, 119.7868, 19.22265 and -1.49E+09 respectively.

Table 1 presents the results of the Jarque-Bera statistical test, which assesses whether a series follows a normal distribution. The test indicates that the EGRR and ECXR variables exhibit a normal distribution, but the FDI, ODA, EXTD, INFR, and POFI variables do not. The central limit theorem invalidates the assumption of normality in data when considering the mean value. All of the variables exhibit a positive skewness.

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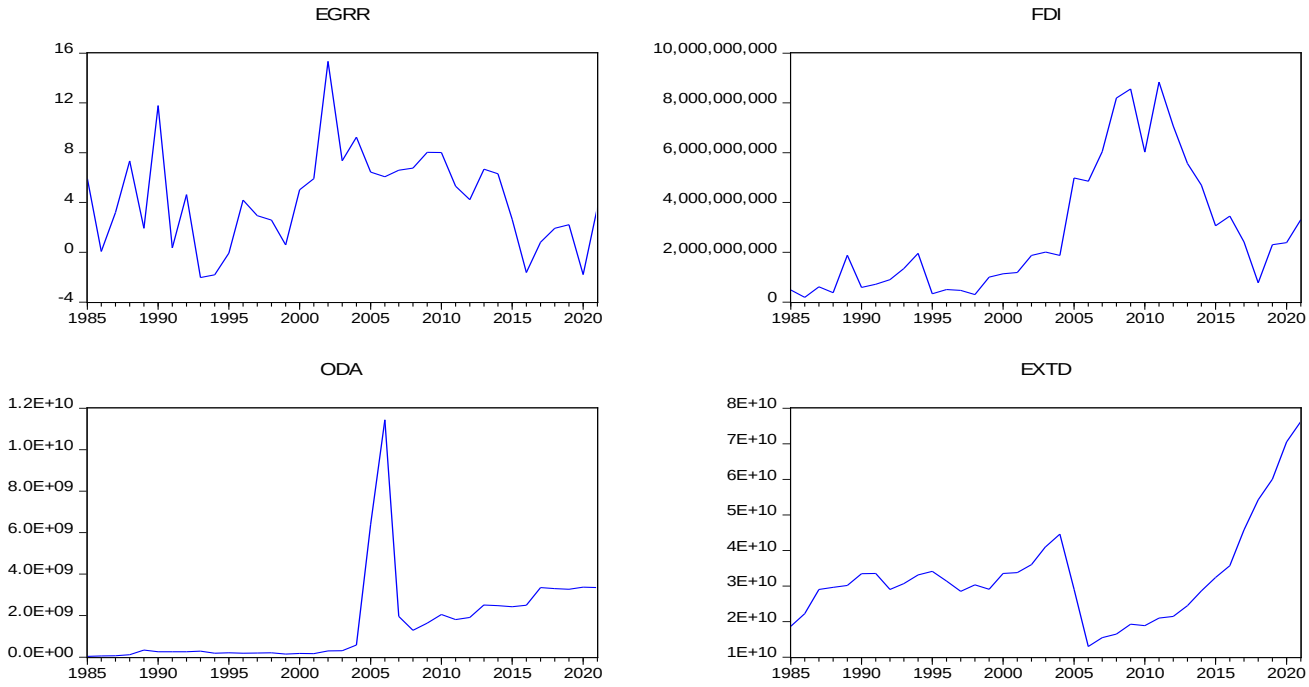
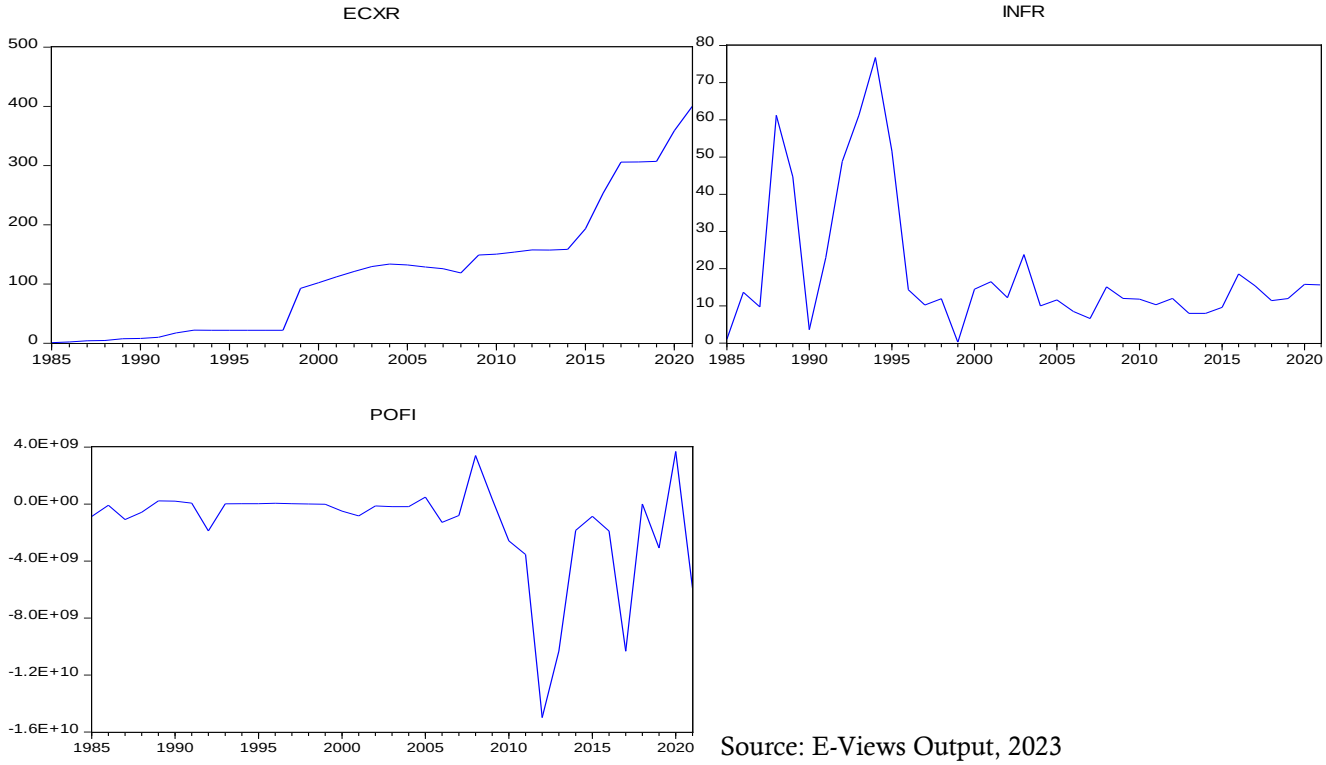
Trend Analysis

Fig 1: Trend Analysis for EGRR, FDI, ODA and EXTD.



Source: E-Views Output, 2023.

Fig 2: Trend Analysis for ECXR, INFR and POFI



Source: E-Views Output, 2023

The trend analysis for EGRR, FDI, ODA and EXTD is revealed in Fig 4.1 and trend analysis for ECXR, INFR and POFI is revealed in Fig 4.2 for the period of 1985-2021. The Fig 4.1 notes that all the variables witness both upward and downward movement. The EGRR and FDI move in the same direction, both variables witness upward and downward trend within the period under review. From 1985- 1992, both variables have the same pattern of movement with upward trend but with stable fluctuation. Also, from 1993-1995 the Nigerian economy witnessed economic recession with negative values of GDP growth rate (EGRR). The GDP growth rate from 1996 to 2015 was positive indicating that the economy was relatively performing well but with upward and downward trends within the period under review. There was a significant improvement in the GDP growth rate in 2002, 2004, 2009 and 2010 with GDP growth rate of 15.3%, 9.25%, 8.3% and 8.0%. respectively. Several austerity measures have really produced favourable outcomes, as evidenced by the significant increase in GDP. Additionally, this indicates that the economy was already progressing towards recovery, as evidenced by the increased production of products and services.

In 2016 the Nigerian economy experienced recession with a negative value of GDP growth rate but the economy struggled to come out of recession at slow pace with less than 1% GPD growth rate from 2017 to 2020. On the other hand, the independent variables; EXTD, FDIEXRT, ODA and INFR witnessed upward and downward trends with a positive value all through within the period under review while POFI witnessed upward and downward movement with a notable negative trend.

Finally, the study notes continuous increases in EXCR and EXTD from period of 2010 and 2013 respectively. Though EXTD drastically fell in 2006, this had to do with government policy during President Olusegun Obasanjo and INFR also fell in 2003 from 23.8% to 10% but there was fluctuation in inflation thereafter with continuous increases in inflation figure till recent time.

Unit Root Test

Table 2: ADF Unit root test on Variable in specified model

Variable	Test Stat.	1%C.V	5%C.V.	10% C.V.	Oder of Integration
EGRR	/-3.985593/	/-4.234972/	/-3.540328/	/-3.202445/	I(0)
FDI	/-4.117666/	/-4.296729/	/-3.568379/	/-3.218382/	I(1)
ODA	/-3.052745/	/-3.626784/	/-2.945842/	/-2.611531/	I(0)
EXTD	/-3.302830/	/-2.632688/	/-1.950687/	/-1.611059/	I(1)
ECXR	/-4.519766/	/-4.243644/	/-3.544284/	/-3.204699/	I(1)
INFR	/-5.789292/	/-4.323979/	/-3.580623/	/-3.225334/	I(1)
POFI	/-4.463190/	/-4.234972/	/-3.540328/	/-3.202445/	I(0)

Source: E-Views Output, 2023.

Table 2 indicates that EGRR, ODA, and POFI were stationary at level I (0) with a 5% level of significance, while FDI, EXTD, ECXR, and INFR were stationary at first difference I(1) at a 5% level of significance. Due to the presence of mixed order of integration, the utilisation of ARDL is justified for estimating the model.

Lag selection: ARDL Bound Test Results

Table3: ARDL Bound Test Results

F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	21.60162	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: E-Views Output, 2023.

Table 3 displays the examination results of bound. The bound test demonstrates a long-lasting connection between these variables since the F-statistics value (21.60162) exceeds every critical value from both I(0) and I(1). The evidence shows co-integration happens between the analyzed variables.

ARDL Error Correction Regression

Table 4: ARDL Error Correction Regression

ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EGRR(-1))	0.571407	0.073289	7.796599	0.0001
D(EGRR(-2))	0.861410	0.064085	13.44163	0.0000
DLOG(FDI, 2)	-1.323336	0.254142	-5.207070	0.0012
DLOG(FDI(-1), 2)	-8.641010	0.495061	-17.45442	0.0000
DLOG(FDI(-2), 2)	-4.069643	0.280092	-14.52964	0.0000
DLOG(ODA)	3.354616	0.417875	8.027789	0.0001
DLOG(ODA(-1))	-3.445765	0.528608	-6.518567	0.0003
DLOG(ODA(-2))	-0.851786	0.346764	-2.456384	0.0437
D(POFI)	-2.12E-10	3.64E-11	-5.816745	0.0007
D(POFI(-1))	1.38E-10	3.85E-11	3.591406	0.0088
DLOG(EXTD, 2)	-1.830760	1.415573	-1.293300	0.2369
DLOG(EXTD(-1), 2)	-3.399128	1.349901	-2.518057	0.0399
D(INFR, 2)	-0.048165	0.009119	-5.282069	0.0011
D(INFR(-1), 2)	0.093569	0.011334	8.255424	0.0001
D(INFR(-2), 2)	0.133236	0.011893	11.20305	0.0000
D(ECXR, 2)	-0.021387	0.007127	-3.000779	0.0199
D(ECXR(-1), 2)	-0.017222	0.007196	-2.393096	0.0480
D(ECXR(-2), 2)	0.021011	0.008804	2.386420	0.0484
CointEq(-1)*	-0.928375	0.049937	-18.59102	0.0000

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R-squared = 0.988892 Adjusted R-squared = 0.974611 Durbin-Watson stat = 1.854504				

Source: E-Views Output, 2023.

The short run result of ARDL ECM model is shown in Table 4 which produces that the negative and significant value of ECM coefficient supports a priori expectation. The the result further informs us is that speed of adjustment is 93%, which means that 93% of disequilibrium in the previous period is restored in the equilibrium of the current period.

In case of the short run, FDI and POFI negatively significantly affect EGRR when EGRR under 1% FDI and POFI will reduce 132 and 212 respectively while ODA positively significantly contribute to EGRR; 1% ODA rise will increase EGRR 335%. ECXR and INFR have negative significant impact on EGRR, as about 1% rise in ECXR and INFR results in 2% and 5% reduction in EGRR respectively, but EXTD has negative insignificant impact on EGRR in the short run since an increase of about 1% in EXTD will lead to 183% reduction in EGRR.

$R^2$is the coefficient of determination which represent the amount of the variability of the EGRR explained by the independent factors. The positive correlation measured by R^2 value of 0.988892 is highly significant as the independent variables in the model are correlated with the variable 'EGRR'. Therefore, the model is a good fit since 99% of the variances of the EGRR can be explained by the factors and the other 1% is explained by different factors unaccounted for. The model has no autocorrelation evident in the value of DW, which is equal to 1.854504. This is in accordance with the rule of thumb and the value is approximately or near 2. The computed parameters are valid and suitable for policy decision, implicitly.

Long-Run Estimation Results

Table 5 Long-Run Estimation Results

Dependent Variable: D(EGRR)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(FDI))	10.56142	2.278116	4.636031	0.0024
LOG(ODA)	0.904455	0.219370	4.122961	0.0044
POFI	-4.57E-10	1.48E-10	-3.094141	0.0175
D(LOG(EXTD))	-10.79881	5.278580	-2.045780	0.0800
D(INFR)	-0.240890	0.083923	-2.870366	0.0240
D(ECXR)	0.029413	0.041285	0.712434	0.4992
C	-15.19335	4.263888	-3.563262	0.0092

Source: E-Views Output, 2023.

The results of the long run ARDL result are shown in the Table 5 and it shows that in the long run FDI and ODA are statistically significant at 1% to have positive impact on EGRR by 106% and 90%, respectively and when we increase the POFI and EXTD by

1%, we see negative impact on EGRR by –457% and –108%, respectively but the impact is not statistically significant (−1%) Lastly, the long term effect of INFR and ECXR are negative and positive with insignificant effect, respectively, and its 1% increase in INFR and ECXR causes 24% reduction and 3% increase in EGRR, respectively.

Residual diagnostics

Table 6: Residual and Stability of the ARDL estimation

Residual Tests	JB_N = 0.5910	BG_{SC} = 0.9228	BPG_H=0.247

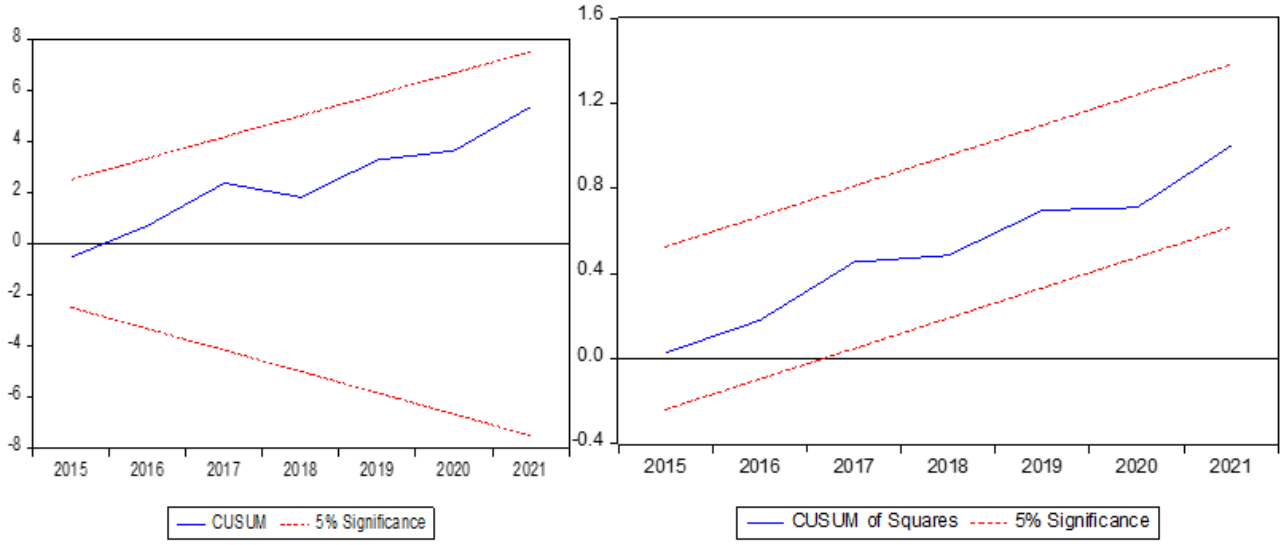
Note: $\boldsymbol{JB_N}$ *= Jarque Bera Normality test,* $\boldsymbol{BG_{SC}}$ *= Breusch-Godfrey serial correlation test,* $\boldsymbol{BPG_H}$ *= Breusch-Paga-Godfrey heteroskedasticity test*

Source: E-Views Output, 2023.

The results shows that the model is normally distributed, homoscedastic and not serial correlation within the required 5% significance level. This is represented in Table 6. Therefore, the ARDL model results were considered reliable, not biased and useful for policy making.

Stability Test

Fig 4.4: CUSUM and CUSUM of squares.



Source: E-Views Output, 2023.

The Fig 4.4 displays both CUSUM and CUSUM of squares which show that the critical 5% bounds contain the statistics indicating stable behavior of the ARDL model.

Discussion of Results

The results estimated show how independent variables affect the dependent variable. FDI generates a significant negative correlation with its influence on economic growth during the short-term period of analysis. The positive substantial impact of FDI on economic growth in the Nigeria becomes apparent in the long-term period. FDI demonstrates an anticipated positive relationship with economic growth based on proven historical patterns. However, this study is in agreement with the conclusion presented by Chigbu *et al* (2015), Leonard & Ihensekhien (2020), Okoro *et al* (2019), Chude & Chude (2023) but oppose that of Ewubare & Nwabueze (2019).

Furthermore, economic growth receives a major advantageous boost from ODA which benefits short-term and long-term periods. Official assistance through 'aid' maintained its importance in Niger's economic growth from 1985 up to 2021. Economic growth from recipient country is forward on the basis of Foreign aid. Although Adekunle & Suliamon (2018) offer no evidence to support this claim, it agrees with the conclusions of Ewubare & Nwabueze (2019), Leonard & Ihensekhiem (2020) and Chude & Chude (2023).

Also, the research shows how EXTD exercises no significant impact on economic development throughout both short-term and long-term periods. In short and long terms, decreasing evidence exists of foreign debt increasing national growth. There is no significant inflow of foreign debt because if money is financed as a result of government borrowing without the government investing the money into productive activities to grow or an over extravagant spending into debt when money must have been embezzled by corrupt ocal officials of the government. In such a situation, growth becomes viable since debt is being carelessly spent. This goes contrary to the scholars' expectation and the findings of Okoro *et al* (2019) and such researchers as Adekunle & Suliamon (2018) as well as those of Leonard & Ihensekhien (2020). In the same vein, the presence of POFI has greatly retarded the progress of Nigeria's economy negatively in the present and the future. It suggests that POFI does not impact the economic growth rates when observed across short-term and medium-term periods.

In the end, the short-term economic growth suffers a serious blow from the EXRT although this intervention proves to be virtually non-harmful or even beneficial for long-term expansion. While the initial expectation seems to be contradicted, it is true that a low EXRT will lead to a short-term economic growth. INFR is badly distracting progress in the economy in the short and long run.

Thus, when there is low inflation, growth will be promoted. Low inflation will help to improve purchasing power, standard of living. When people are enabled to purchase the goods and services, the economic growth can then rise as a result of the associated increase in growth and the productive activities will also increase.

Conclusion and Recommendations

Important to note is that Nigeria, like developing countries, has savings and foreign exchange constraints that have to be closed with capital flows from foreign nations to enhance domestic investment. Even so,

developing countries, including the African, may not be able to survive without inflow of foreign capital. A serious-minded government will also utilize the role of the inflow of foreign capital into the economy for best performance or growth. A continuous flow of FDI and ODA is strong to Nigeria's economic growth because the two components have a significant contribution to the long-term growth of the country's economy.

When the Nigerian government brings in more foreign aid and investment which creates jobs and add money into the government's purse, then economic growth is about certain. Despite the fact that figure rising constantly, it will not be too much to assume that EXTD hasn't produced the outcomes anticipated. This study demonstrates through empirical data that foreign money inflow creates strong impacts on the duration of economic growth. Official development aid (ODA) and FDI and POFI collectively have substantial influence at both short-term and long-term intervals. Foreign debt plays no significant role in Nigeria's economic development because it does not affect growth during both short-term and long-term periods.

For this reason, FDI and ODA are still major sources of capital inflow into Nigeria that can be transformed to positively affect the Nigeria economy.

Based on the finding, the following recommendations were made:

1) Government should create enabling environment for investment to thrive and also put policies in place that will attract both domestic and foreign investors.
2) It is expected that borrowing with a view for sustainable growth should be channeled to productive investment such as provision of massive infrastructural facilities especially in health and education (human capital development), electricity and roads. This will not only create enable environment for local investors but also will attract foreign investors.
3) The study recommends that government through monetary authority should maintain single EXRT system and also put measure reduce INFR by raising leading rate.
4) It is advised that government borrowing (external debt) should be channeled towards productive investment only especially infrastructural and capital projects. Foreign aids should be scrutinized thoroughly before government should receive such.

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