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EXPORT-GROWTH NEXUS IN NIGERIA: DOES CAPITAL INFLOW MATTERS?

Olufemi Samuel ADEGBOYO[1], Peter Katyo ABU[2]
[1]Federal University Oye-Ekiti, Department of Economics, Oye-Are Road, Ove-Ekiti, Ekiti State, Nigeria, Phone: +2347035931528, e-mail: olufemi.adegboyoolufemi@fuoye.edu.ng, adegboyoolufemi1@gmail.com
[2] Nigeria Customs Service, Headquarters, Abidjan Street, Wuse, Abuja, Nigeria, Phone: 02348063126721, e-mail: katyoabu@customs.gov.ng

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Abstract

This study examined how capital inflow influence export-growth nexus in Nigeria from 1980 to 2022. The study employed ADF and PP unit root test to determine the stationarity of each variable and the result reveals that there is mixed level of stationarity among the variables as gross capital formation is stationary at level while other variables such as export, capital inflow, inflation rate, and government expenditure are stationary at first difference. Consequently, the study is conducted using the ARDL estimation approach. The study found that inflation rate, gross capital creation, and trade openness had negative impacts on Nigeria's economic growth, whereas capital inflow, government expenditure, the interaction of export and capital inflow, and trade openness all had positive impact on the economic growth. Consequently, the study recommends that government should create an enabling environment to attract more capital inflow into the country also government should review its trade policies so that export could starting stimulating economic growth in Nigeria.

Keywords: *capital inflow, export, economic growth, Solow-Swan growth model, ARDL*

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Introduction

Global financial integration has been a rising trend in the last three decades due to trade liberalization, and the massive movements of capital inflow around the world. For instance, according to World Bank report (2022), a total of US$2.2 trillion was moved around the world in 2021 as against US$174.94 Billion in 1991. International trade has continued to be a key economic tool for promoting economic interconnectedness and nation-state prosperity on a global scale (Egyir et al., 2019). Similarly, foreign capital inflows (FCI), with their complementary effect on bridging the gap between local savings and investment, have been identified as one of the main drivers of the trend in favor of economic globalization and integration (Gabriel et al., 2019).

Foreign capital inflows refer to the movement of money from external source to a host nation. The inflow can be as foreign direct investment (FDI), foreign aids and grants, foreign portfolio investment, foreign remittances, foreign loans, and official development assistance (ODA) (Adekunle & Sulaimon, 2018). As one of the main drivers of global economic integration, foreign capital flows is regarded as a strategic component in the process of economic growth in emerging or developing economy where the majority of these countries, still experience difficulties with saving, investment, and foreign exchange. And they therefore depend heavily on foreign financial sources to supplement their domestic capital to close the capital formation gap, and finance long-term growth (Ehigiamusoe & Lean,2019; Kovačević, 2021). The FCI is thus, considered as an important source of funding that enables the transfer of technology, expertise, and inventions from economically developed nations to developing ones, enhance productivity, and assist in quickening the pace of their economic development (Tahir et al 2020; Chorn & Siek,2017). Just like the FCI, international trade (export) has also been identified as an economic variable that promotes technological advancement and stimulates foreign exchange gains required for economic growth and development (Egyir et al 2019).

The Sub-Saharan Africa (SSA) has seen a huge influx of foreign cash flow during the past three decades. For instance, there was a massive rise in international capital inflows from 1991 to 2021 in terms of the magnitude of FDI and net inflow from around US$2.08 billion to more than US$72.01 billion. Capital

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flows are crucial for the SSA region's economic development since they supplement domestic resources and low income levels.

Like other SSA countries, Nigeria has also experienced an impressive inflow of foreign capital (Antony-Orji et al., 2018). Over the last three decade, the personal remittance which is an important contributor to capital inflow in Nigeria has increased tremendously from US$65,544,714 million in 1991 to US$19.48 billion in 2021. FDI net flows also increased during the same period from US$712,373,362 million in 1991 to US$3.31 billion in 2013.

While FCI are considered as important means of transferring resources from industrialized to developing nations, where they are typically considered to be more productive, there effect, however, can be either good or negative, due to their volatile and fungible nature if not deployed to productive activities or properly managed (Obodoechi et al, 2022). According to Ikpesu and Oke (2022), FCI can stunts growth since it causes poverty and a developing economy to become enmeshed in a vicious cycle. Consequently, issues brought on by massive capital inflows have raised questions about these flows' capacity to promote growth and about their genuine profitability, whether or not countries gained by establishing capital accounts is a hotly debated topic (Baharumshah et al 2015)

Several empirical studies have examined the effects of a FCI on the economic growth. Most scholars argue that FCI stimulate growth due to the effects of knowledge spillover and market efficiency. These impacts facilitate the expansion of regional savings and foster the building of wealth. These argument were investigated and validated by tests done by Liang et al. (2021) and Kovačević (2021) and they found a positive impact of the influx of net FCI on the rate of growth. However, other economists such as (Adam and Klobodu 2017; Anidiobu et al., 2020) contend that, it is impossible to ignore the crippling consequences of capital inflows, particularly the crises brought on by an increase in systemic risk and rapid reversals when a moral hazard issue is present.

The majority of the research that has been conducted on the growth of Nigeria's economy has been on the effects of FCI, but this study will give significant insights. The link between exports, FCI, and GDP growth, on the other hand, has garnered a surprisingly low amount of attention even though such analysis may provide useful information. One of the major works that attempted to investigate the effects of trade (exports) on economic growth in the presence of capital flows in emerging economies in the last five years was the work of (Egyir et al., 2019),

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however, their investigation was done at the cross-country level involving panel data, the emphasis was not on Nigeria.

Therefore, the true impact of exports on FCI and growth for specific nations needs to be investigated because of the peculiarity of economies, If this is not done, authorities may unintentionally implement measures that will increase or prevent currency appreciation in an effort to limit foreign capital influx, thereby running the risk of creating distortions in the economy that might impair economic production in the long run.

Given the aforementioned developments, it is therefore necessary as the main objective of this study, to test the interactive effect of trade (exports) and capital flows on economic growth and also the direct effects of these variables on economic growth in Nigeria. Specifically, the sub-objectives will include: Investigating the effect of foreign capital investment on economic growth of Nigeria, examining the interactive effect of trade (export) on FCI and its impact on economic growth in Nigeria, and making appropriate policy recommendations based on findings of study. Consequently, the paper's primary innovation will be to distinguish between the direct and interactive effects of trade (exports) and capital flows on economic growth in Nigeria.

The paper is organized as follows: the next section will be devoted to empirical studies review on the impact of foreign capital flow on economic growth, the third section dwells on the methodology and data analysis and the last one is conclude.

Empirical Review

The impact of FCI on growth rate of the economy has continued to generate intense debate amongst scholars. Several studies have been conducted over the years to investigate the magnitude and direction of the relationship, both at country specific and cross-country levels. The results have been positive in some case, negative in others while a couple of others recorded conflicting or ambiguous outcomes.

For instance, in their study of the impact of FDI on Singapore's GDP growth from 1970 to 2018 using (ARDL) models, Le & Le (2020) found that FDI and exports are key drivers of GDP growth for Singapore. Similarly, Badwan & Atta (2020) used OLS to estimate a model examining the impact of FDI and other financial flows on Palestine's economic development from 2007 to 2018. The findings indicate that Palestine's economic growth heavily reliant on financial grants, FPI, external loans, worker remittances, and FDI.

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In his study, Ikpesu (2019) analysed the impact of capital inflows on economic development in Nigeria between 1981 and 2016, focusing specifically on investment as a means of transmission. The study used the least square regression technique to estimate the model. The study found that Foreign Direct Investment (FDI) has a substantial role in fostering the growth of Nigeria's economy. Nguyen et al. (2021) demonstrated the link between GDP and FDI by using data obtained in Vietnam from 1995 to 2018. The study found that exports, foreign loans, international assistance, GDP, and FDI all contributed to GDP growth. Obodoechi et al. (2022) use the ARDL method to examine the influence of FCI on macroeconomic factors on the development of Nigeria's GDP throughout the period of 1981-2020. The GDP of Nigeria was significantly influenced by GFCF and remittance.

Using pooled ordinary least squares (OLS), Chorn and Siek (2017) conducted a cross-country analysis using panel data from 1997 to 2012 to find out how FCI affected GDP growth in seventy-seven developing economies. According to the findings, FDI and ODA had a positive impact on growth rate of the economies. In a similar manner, Mowlaei (2018) used the Pooled Mean Group (PMG) econometric methodology to estimate a panel dataset of 26 African nations spanning from 1992 to 2016. The research showed that all three forms of FCIs significantly contributed to economic development, both in the short term and in the long term.

Liang et al. (2021) conducted research on the relationship between foreign direct investment and GDP growth in developing countries. Data was collected from 113 emerging and transitional countries between 2000 and 2019. The researchers used a two-stage least squares approach, including instrumental variables and the Hausman fixed effect, to track the results. Inflow of FDI was found to be stimulating the growth of the economies of emerging nations. The impacts of FDI and human capital on four North African countries between the years 2000 and 2018 were investigated by Mohamed (2022) using the generalised method of moments (GMM). Both human capital and FDI are beneficial to the economies.

In probing whether Nepal was heading towards Dutch disease, Paudel et al. (2022) in a paper examined the role of external debt, remittances, exports, and labour force in the economic growth of Nepal, using data from 1990 -2019 using ARDL, and the result demonstrated that remittances and external debt have adversely impacted Nepal's economic growth, pointing to a sign of Dutch Disease in the country's economy that has been exacerbated by recent remittance inflows.

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In their study, Adegboyega, et al (2021) conducted an analysis on the impact of trade liberalisation on GDP growth, private and public capital flows, and the interplay between these factors in Nigeria. The researchers used data from the period spanning 1985 to 2018.The Autoregressive Distributed Lag (ARDL) approach. They found that Nigeria's economic advancement was impeded by the infusion of public and private funds facilitated by trade liberalisation.

Awad (2021) investigated the influence of FDI, assistance, debt, remittances, and trade on the growth of the GDP in twenty-one low-income states in the SSA. According to the findings of this study, the GDP per capita of these nations increased at a faster rate as a direct consequence of trade and foreign assistance.

The generalised method of moments (GMM) model was used by Njoroge (2021) in order to ascertain the influence that remittances, official development aid (ODA), and FDI had on the growth of GDP in COMESA member states. According to the result, capital inflows positively impact the GDP growth, whereas migrant remittance had negative impact. It is necessary for remittances to interact with some indication of the welfare of the domestic economy in order for them to contribute to the increase of GDP per capita.

Egyir et al. (2019) examined how trade affects FCI economic growth nexus in Africa. For the purpose of this study, a dynamic GMM technique was used. In spite of the fact that capital flows are not the primary factor that is driving this trend, the statistics demonstrate that trade (exports) has been a substantial engine of economic development in Africa, both in recent times and in the past. FDI and remittances are more significant for economic growth than foreign assistance and external debt, according to the statistics. This is true both in the short term and in the long term.

`Most studies reviewed have only looked at the impact of FCI within the context of economic growth in a country or across country. A couple of the studies included trade(export) as independent variable (see Le & Le, 2020; Kovacevic,2021; Nguyen, 2021) but the interaction between FCI and trade (export) has not been sufficient explored. To the best of our knowledge only the works of Egyir et al. (2019) and Adegboyega et al. (2021), attempted to look in that direction recently. However, while the former utilized panel data across countries, the later uses trade openness as the interacting variable, which factors import in its computation and therefore diminishes the importance of export funds as foreign earnings.

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Given the foregoing, it is safe to draw the conclusion that empirical research on the relationship between FCI and economic growth is inconclusive. Some studies support a positive relationship, while others reported a negative relationship. In addition, some studies could not find a relationship or presented a weak relationship. As a result, the methodology, data selection, and analytical tools utilized in the investigation could all be linked to this variation in divergence of viewpoints (Adegboyega et al.,2021).

Therefore, the disparity between the empirical studies should sparked interest in new research focusing on the precise impact of each type of foreign capital inflow and testing the idea that these inflows aren't all equal in terms of contributing to growth; some may have positive effects on country growth while others may have negative ones (Debbiche, 2020).

Methodology

Based on the Solow-Swan Growth Model, this investigation is conducted. An exogenous theory of economic growth, the Model predicts future changes to a nation's GDP over time based on variables such as savings rates, innovation, and population size. Capital accumulation and individual consumption are central to this model of economic growth. Thus, it is also possible for migrants to accumulate wealth via remittances sent home. This is the general production function as it is structured:

$$Y = AF(K, L)$$

In line with previous investigation on economic growth, this study employs a translog production function augmented with capital inflow and export variables that allows the model to be parsimonious and provides stronger inferences.

$$Y = A\,K^{\beta}\,L^{1-\beta} \quad (2)$$

Where, Y = output; k = capital stock; α = share of capital in output; L = labor; A= technological advancement; 1-α =share of effective labour in output.

Model specification

Transforming equation 3 into econometric model gives equation 4 below:

$$GDPPC_t = \alpha + \beta A_t + \beta k_t + \varepsilon \quad (4)$$

This study assumes that A which is the technological process is been influence by capital inflow in line with the objective of the study.

$$A = (CAPINF, EXPT) \quad (5)$$

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Where CAPINF means capital inflow and EXPT means export

Merging equation 5 with equation 4 gives:

$$GDPPC_t = \alpha + \beta_1(CAPINF)_t + \beta_2(EXPT)_t + \beta_2 k_t + \varepsilon \quad (6)$$

Since our focus is to examine how the interaction of capital inflow and export affects economic growth, therefore, we incorporate the interaction into the model and it is presented in equation 7.

$$GDPPC_t = \alpha + \beta_1(CAPINF)_t + \beta_2(TEXPT)_t + \beta_3(CAPINF*TEXPT)_t + \beta_4(K)_t + \varepsilon_t \quad (7)$$

This study will add control variables (government expenditure, inflation rate) which extant studies have found to be important factors that can affect economic growth

$$GDPPC_t = \alpha + \beta_1(CAPINF)_t + \beta_2(TEXPT)_t + \beta_3(CAPINF*TEXPT)_t + \beta_4(K)_t + \beta_5(GXPDT)_t + \beta_6(INFR)_t + \varepsilon_t \quad (7)$$

Where: GDPPC = gross domestic product per capital, CAPINF= capital inflow, TEXPT = total export, k = capital stock/ GCF, GXPDT= government expenditure, INFR =inflation rate α, β_1 to β_6 all represent the vectors of the parameters, t = time trend and ε = error term. From equation 7, it can deduce that all the variables are not in the same appropriate coefficient as GDPPC is in rate while other variables are in millions and billion, therefore it is appropriate to make all the variables be in the same rate. Consequently, all variable that are not in rate are logged and presented in equation 8.

$$GDPPC_t = \alpha + In\beta_1(CAPINF)_t + In\beta_2(TEXPT)_t + In\beta_3(CAPINF*TEXPT)_t + In\beta_4(GCF)_t + In\beta_5(GXPDT)_t + \beta_6(INFR)_t + \varepsilon_t \quad (8)$$

Data sources

Data analysis were sourced from the annual reports of CBN and World Bank Indicators.

Result and discussion of empirical findings

Descriptive statistics

This section begins descriptive analysis. This analysis is performed to know the characteristic of each variable. The synopsis result is presented in table 1 below:

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Table 1: Descriptive statistics

	GDPPC	LOG(TEXPT)	LOG(CAPINF)	LOG(CAPINF*TEXPT)	LOG(GCF)	INFR	LOG(GXPDT)
Mean	4.321	24.089	24.165	21.436	29.811	17.677	21.895
Median	4.431	24.392	24.186	21.489	29.796	17.691	23.498
Maximum	15.329	25.353	25.057	22.903	30.109	18.073	23.914
Minimum	-2.035	21.756	23.285	19.518	29.572	17.279	16.119
Std. Dev.	3.017	1.038	0.408	0.995	0.158	6.231	2.198
Skewness	0.435	-0.665	0.077	-0.256	0.225	-0.045	-0.841
Kurtosis	3.287	2.359	3.082	1.996	1.774	1.941	2.732
Jargue-Bera	1.121	2.951	0.041	1.693	2.274	1.508	3.866
Probability	0.571	0.234	0.979	0.429	0.321	0.321	0.145

Descriptive statistics

The table displayed the summary of statistic description of all the variables that were used by the study. The mean value (average) of gross domestic product per capital, total export, capital inflow, interaction of capital inflow with total export, gross capital formation, inflation rate and government expenditure are 4.321, 24.089, 24.165, 21.436, 29.811, 17.677 and 21.895 respectively. The table also reveal that the average value (mean) of gross capital formation (GCF) is more than its median value. The Gross Capital Flow (GCF) exhibits a distribution that is right-skewed when compared to GDP per capita, total exports, capital inflow, inflation rate, and government spending. From what can be seen in the data, it seems that there is an imbalance in the way the variables are distributed. We may compare the mean to the standard deviation in order to ascertain whether or not it delivers an accurate portrayal of the data. Due to the fact that the standard deviation coefficients are so low, it seems that the majority of the data is centred around the mean percentage. According to the results of the standard deviation, the variable that is the most open to uncertainty is the rate of inflation, while the

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variable that is the most stable is gross capital creation. Compared to inflation, gross capital creation has the least standard variance of any economic variable.

The table also demonstrates that all of the variables were very consistent with one another. This is because the median and mean values were both within the range of the upper and lower limits of the variables. This is shown by the skewness statistic coefficient, which indicates that GDPPC, CAPINF, GCF, INFR, and GXPDT have a tendency to be normal, but TEXPT and CAPINF*TEXPT have a tendency to be abnormal. The kurtosis coefficient is used to determine whether or not certain variables are platykurtic (for example, TEXPT, CAPINF*TEXPT, GCFINFR, and GXPDT) or leptokurtic (for example, GDPPC and CAPINF). Moreover, some of the variables that are utilised for data analysis are platykurtic. After all was said and done, the Jarque-Bera statistics demonstrated that each and every variable adhered to normal distributions.

Unit root test

It is essential to determine if each variable is stationary before deciding the appropriate estimation technique. Integrating non-stationary variables into research raises the probability of making regression errors. This research used two-unit root testing to provide a reliable and credible assessment. The two test are: ADF test and PP test. We embark on our pursuit for the most favourable lag time using the Akaike information criterion (AIC). Table 2 presents a concise summary of the test results.

Table 2: synopsis of unit root test

	ADF	PP
At level		
VARIABLE	**t-Statistics**	**t-Statistics**
LOG(TEXPT)	-1.217	-1.148
LOG(CAPINF)	-1.466	-1.115
LOG(CAPINF*TEXPT)	-2.088	-1.869
LOG(GCF)	-1.497	-1.656
GDPPC	***-4.049	***-4.131
INFR	-1.892	-1.403
LOG(GXPDT)	-1.594	-1.835

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First difference		
VARIABLE	**t-Statistics**	**t-Statistics**
LOG(EXERN)	***-6.742	***-6.726
LOG(EXTL)	***-4.293	***-4.173
LOG(FDI)	***-9.449	***-9.377
LOG(GCF)	***-10.264	***-10.469
GDPPC	***-10.909	***-14.936
INFR	***-6.5859	***-6.602
LOG(GXPDT)	***-5.491	***-5.913

***=1%, **=5%

The outcomes of the two tests are similar. The findings from the two tests in table 2 indicate that, with the exception of gross domestic product per capita, all variables do not exhibit stationarity at level. However, it was found that all variables attained stationarity after the first difference. These result indicates that the variables show mixed levels of stationarity. The most suitable approach for estimation in this investigation is the ARDL technique, as recommended by Pesaran et al (2001).

ARDL estimate

Therefore, this study will employ ARDL and ECM technique to analyze both the short run and long run relationship between (GDPPC) and (TEXPT, CAPINF, CAPINF*TEXPT, GCF, INFR, GXPDT). It is also possible to get the ECM from ARDL using a simple linear transformation. The long-run estimation model is shown in equation 9 below:

$$\Delta GDPPC_t = \beta_0 + \beta_1 GDPPC_{t-1} + \beta_2 LTEXPT_{t-1} + \beta_3 LCAPINF_{t-1} + \beta_4 L(CAPINF*TEXPT)_{t-1} + \beta_5 LGCF_{t-1} + \beta_6 INFR_{t-1} + \beta_7 LGXPTD_{t-1} + \sum_{i=1}^{q} \theta_{1i}\, \theta \Delta GDPPC_{t-1} + \sum_{i=1}^{q} \theta_{2i}\, \theta \Delta LTEXPT_{t-1} + \sum_{i=1}^{q} \theta_{3i}\, \theta \Delta LCAPINF_{t-1} + \sum_{i=1}^{q} \theta_{4i}\, \theta \Delta L(CAPINF * TEXPT)_{t-1} + \sum_{i=1}^{q} \theta_{5i}\, \theta \Delta LGCF_{t-1} + \sum_{i=1}^{q} \theta_{6i}\, \theta \Delta INFR_{t-1} + \sum_{i=1}^{q} \theta_{7i}\, \theta \Delta LGXPDT_{t-1} + \varepsilon_t \quad (9)$$

Where the variables were as defined before, $\theta_1 \; to \; \theta_8$ are the short run vector parameters, β_1 to β_7

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β_1 are the vector parameters of the long run, q is the length of the optimum lag, β_0 is the drift component, and ε_t denotes the white noise.

The first stage of the ARDL bound test involves examining the presence of cointegration, which refers to a long-term relationship between the variables. The researchers will use F-tests in line with the criteria established by Pesaran et al. (2001). Assumption of the equation's invalidity is $H_0: \theta_1 = \theta_2 = \theta_3 = \theta_4 = \theta_5 = \theta_6 = \theta_7 = 0$, which implies that the variables do not cointegrate i.e., there is no existence of long run relationship among the variables. On the other hand, the alternative hypothesis is $H_1: \theta_1 \neq \theta_2 \neq \theta_3 \neq \theta_4 \neq \theta_5 \neq \theta_6 \neq \theta_7 \neq 0$, which implies that the variables cointegrate i.e., there is existence of long run relationship among the variables.

Table 3: Bound test for cointegration

Test Statistic	Value	Significant	Lower bound I(0)	Upper bound I(1)
F-stastic	8.439	5%	2.17	3.21
K	6	1%	2.73	3.9

The F-statistics (8.439), is higher than the upper limit of 3.21 as seen in Result 3, which indicates that it is reasonable to assume that the variables are cointegrated i.e there is a long run relationship among the variable.

Now that we are aware that the variables are cointegrated, we are able to get a long-term estimate by using the ARDL model, which incorporates an error correction model among its components. The result of the long run analysis is presented below:

Table 4: Long run analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Log(TEXPT)	14.207	2.951	4.815	0.0013
LOG(CAPINF)	5.531	1.354	4.084	0.0035
LOG(TEXPT*CAPINF)	-6.181	1.335	-4.629	0.0017
LOG(GCF)	5.957	1.521	3.916	0.0044
LOG(INF)	-12.241	2.609	-4.691	0.0016
LOG(GXPDT)	-7.149	2.132	-3.352	0.01
C	78.729	33.004	2.385	0.0442

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According to what was expected, Table 4 demonstrates that the total export has a significant influence on the growth of Nigeria's GDP. An increase of only one percent in exports would result in an expansion of the GDP that is more than 14.207%. In the event that our exports were to increase, the value of our national currency, as well as our country's foreign reserves would also increase. This is one of the probable explanations. Among these hypotheses is the idea that the companies that manufacture these items are going through a period of continuous expansion, which requires them to hire more workers in order to meet the growing demand.

The favourable and significant influence that the influx of capital had on the increase of Nigeria's gross domestic product was not a surprise. In addition, the statistics demonstrated that there is a 5% increase in growth for every 1% increase in the amount of capital input. It is probable that the capital inflows were effective in increasing domestic saving, which in turn increased investment and accelerated economic development. This conclusion is one of the plausible explanations.

According to the results, Nigeria's economic growth is significantly hampered by TEXPT*CAPINF, which is the interaction impact of the two variables. This was discovered after the impacts of total export and capital inflow on growth were analysed independently. For every one percent rise in the interaction, the rate of economic growth will decrease by 6.181%. This implies that capital inflow does not enhance export to impact positively on growth in Nigeria but rather constitute a drag on the growth effect of export. This result negates the earlier result which found a separate strong positive effect of the two variables in the growth prospect of the country. the positive effect of export is weakened by the capital inflow into Nigeria. Meanwhile, the interaction term shows that the two factors are substitutes to each other in growth process. Capital inflows are supposed to be complimenting export to positively impact economic growth but the reverse is the case in Nigeria. This contradicts the apriori expectation which expect that capital inflow should provide more fund to the domestic firms for them to be expand and be able to produce more than it is needed in the home country and export the excess. This might be due to several reasons. One of which is that the capital inflows were not channel to the appropriate sector that needed the fund most to expand for exportation. Two, majority of the capital inflows only increases household income and the increased income were majorly used for consumption of imported goods which often symbolizes wealth in Nigeria.

Gross capital formation has been found to have a significant influence on the growth of GDP. In fact, it has been shown that a one percent rise in GCF might

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potentially lead to a three and a half percent increase in GDP growth. It should come as no surprise that the endogenous growth hypothesis is strongly dependent on capital.

The study found that inflation is detrimental to the growth of the economy. In point of fact, the Gross Domestic Product (GDP) drops by 12.241% for every 1% rise in inflation. The rate of inflation is a challenge for the expansion of Nigeria's economy, and the situation is becoming worse as inflation rates continue to rise.

Similarly, government expenditure was found to have a negative and significant impact on economic growth of Nigeria and that 1% increase in government expenditure will lead to 7.149% decrease in economic growth. The reason for this could be that the government is spending less on the productive sector which could stimulate economic growth or the government pattern of spending is skewed towards recurrent expenditure which could not contribute to economic growth.

The short-run model which is also the ECM is estimated with equation 10 below:

$$\Delta GDPPC_t = \beta_0 + \sum_{i=1}^{p} \theta_{1i}\, \theta \Delta GDPPC_{t-1} + \sum_{i=1}^{q1} \theta_{2i}\, \theta \Delta LTEXPT_{t-1} + \sum_{i=1}^{q2} \theta_{3i}\, \theta \Delta LCAPINF_{t-1} + \sum_{i=1}^{q3} \theta_{4i}\, \theta \Delta L(CAPINF * TEXPT)_{t-1} + \sum_{i=1}^{q4} \theta_{5i}\, \theta \Delta LGCF_{t-1} + \sum_{i=1}^{q5} \theta_{6i}\, \theta \Delta INFR_{t-1} + \sum_{i=1}^{q6} \theta_{7i}\, \theta \Delta LGXPDT_{t-1} + \varepsilon_t$$

The result of the short-run model is presented in table 5 below:

Table 5: short-run analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPGR(-1))	-0.299	0.062	-4.789	0.0014
DLog(TEXPT)	-6.151	0.618	-9.958	0.00001
DLOG(CAPINF)	14.079	2.068	6.801	0.000
LOG(TEXPT*CAPINF)	29.374	2.447	12.004	0.0001
LOG(GCF)	-6.197	2.162	-2.867	0.021
LOG(INF)	-2.805	0.722	-3.886	0.0046
LOG(GXPDT)	1.376	0.459	2.994	0.0172
CointEq(-1)*	-0.865	0.071	-12.325	0
R-square	0.959			
Adjusted R-square	0.925			

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The negative effect of export on GDP in the near term is seen in Table 5. It reveals a GDP reduction of 6.151 percent for every 1% rise in total export. The expansion of Nigeria's export market result to a constraints on the country's GDP development. This goes against the theoretical underpinnings of classical theory of commerce as well as the Heckscher-Ohlin trade theory.

On the other hand, Nigeria's GDP grows by 14.079% for every 1% rise in capital inflow which is a positive and significantly influence the economic growth at 1% significant level in the short run.

A positive and statistically significant interaction effect of total export and capital inflow on Nigeria's economic growth was found at 1% significant level. The growth rate will spike by 29.374% with a 1% increase in the interaction rate. Total exports and capital inflows seem to be driving Nigeria's economic progress. The interaction has reduced export's negative effect on economic development by using resources carefully enough. There was a negative correlation between exports and GDP growth, but FDI significantly reduced that correlation.

Diagnostic test

It is crucial to validate the correctness of the ARDL model after doing the analysis. Therefore, diagnostic tests were administered in this research. The summary of the results is shown in table 6 below.

Diagonistic test	F-statistic	rob.
Breusch-Godfrey Serial Correlation LM Test	0.418	.664
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.445	.916
Ramsey RESET Test	0.069	.795
Normality Test: Jarque-Bera	0.489	.783

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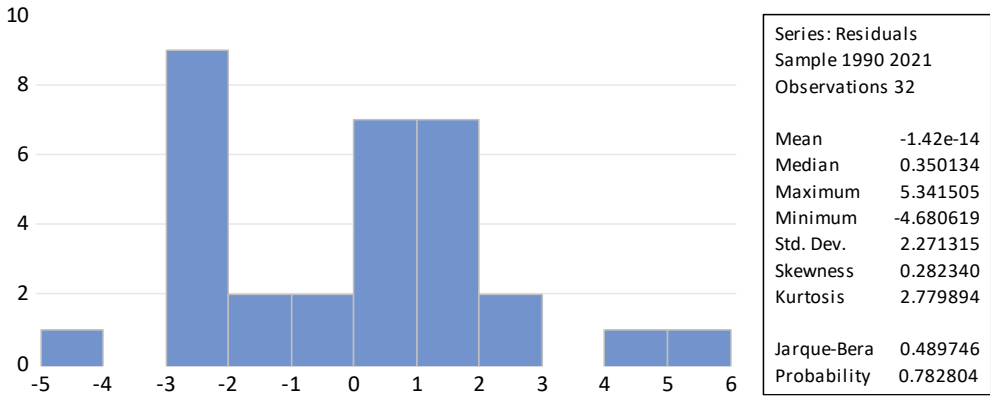

The result of the Breusch-Godfrey LM which test for autocorrelation revealed that there is no problem of autocorrelation in the model as the probability value is greater than 5% significant level. Also White's test of heteroscedasticity result yields a probability value above the 5% significance level, indicating that there are no issues of heteroscedasticity in the model. Lastly, the Jargue-Bera test revealed that the model is normally distributed.

Conclusion

This research conducted an analysis of Nigeria's economic from 1980 to 2022 in order to ascertain the impact of FCI on the relationship between exports and economic growth. This research is based on the endogenous growth model developed by Solow. While the GPPC was stationary at level, the other variables exhibit first difference stationarity. This indicates that the variables demonstrate different levels of stationarity, as assessed by unit root analysis. Therefore, the investigation is done using the ARDL estimation technique. The bound test demonstrated the presence of cointegration, indicating a long run link between the variables. Capital inflows, aggregate exports, government spending, and gross capital formation all contribute to the growth of Nigeria's GDP. Conversely, trade and FDI have a negative impact in the long run. Whereas, in the long run, Nigeria's economic growth was positively influenced by capital inflow, government spending, the correlation between exports and CFI, and trade openness. However, the impacts of inflation rate, gross capital creation, and trade openness were negative.

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Policy recommendation

Sequel to the findings as discussed above, the study makes the following recommendations:

Since the study found that export has a negative impact on economic growth, therefore government should review its trade policies to correct this abnormality.

Since capital inflow spur economic growth, therefore the government should create an enabling environment to attract more capital inflow into the country.

The study found that the interaction of export and CFI contribute to the economic growth, therefore government should formulates policies to ensure that the connection between the two variable is further strengthen.

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