Growth Spillover Effects from Trade: A Case of Nigeria and Two Trading Partners

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Abstract

This study examines growth spillover effects from trade between Nigeria and two major trading partners; China and India. Using time series data approach, we analyze the trade-growth spillover effects on Nigeria's economic growth over a period of forty years. The study employs Johansen co - integration test, Fully Modified Ordinary Least Squares regression model (FMOLS) and Granger Causality test for data analysis. Findings reveal that China's imports have significant positive link with Nigeria's economic growth while, India's export and import have significant positive impact on Nigeria's economic growth. Granger causality test reveals that both imports and exports from both countries are drivers of the Nigerian economic growth. Based on these findings, we conclude that there is a positive growth spillover effects from trade between Nigeria and her two trading partners. The implications of these findings are significant for policymakers to shape trade policies with both countries to ensure continued positive spillover effects and economic performance through international trade.

Keywords: Spillover effects; economic growth; trading partners; trade policies; co -integration, macroeconomics

JEL Classification Codes: F1; F10; F14

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1. Introduction

Spillover effects are the influence that unconnected actions in one country exert on the economies of other nations of the world. "These are series of linked effects that has grown since globalization in trade and stock markets developed the financial interactions between economies. It occurs when incidents in an economy have ripple effect on another economy, particularly a more dependent economy (Zhang *et al*., 2021; Pfeiffer *et al*., 2021; Md Arif-Ur-Rahman and Inaba, 2021). The term 'spillover effects' is sometimes applied to the negative impact a domestic event has on other parts of the world such as an earthquake, stock market crisis, or another macro event, however, there are positive spillover effects too (Angelucci and Di Maro, 2015). Examples of negative spillover effects are documented in the literature on various issues (Di Tella and Schargrodsky, 2004; Yang, 2008; Lipscomb and Mobarak, 2013).

Economic growth across economies is critical for national development. Growth theories prove that productivity spillovers often take place between developing and industrialized economies (Junaid *et al*., 2022; Coe *et al.,* 1997, Coe and Helpman, 1995). Global linkages through economic openness often lead to growth spillovers (Kose *et al.,* 2003). Consequently, increased trade and the integration of foreign direct investment also contribute to spillovers (Arora and Vamvakidis, 2005). Kose *et al.,* (2017) also affirmed that a decrease in growth rate of a particular nation may lead to downturns in the quantity and price of exports and also the trading conditions of a trading partner. Increased import demand and rising commodity prices can also increase trade imbalances in developing countries (Kose *et al*., 2017; IMF, 2009). Oftentimes very high trade deficits are recorded year in and out in many emerging economies.

Nigeria's deepening trade integrations and linkages with China and India have raised questions about the likelihood effects of economic spillovers from the two trading partners on the Nigerian economy. China and India are the two leading import and export partners of Nigeria. The Nigerian imports from China represents 24.73% of total imports while export to India account for 16.37% of total exports (WTSR, 2023). Consequently, and as shown by Alam *et al.,* (2023), China's macroeconomic shocks affect its trading partners in advanced economies the US, Japan and Germany. Evidence from recent statistics from World Trade Organization report revealed that China maintained its position as world top merchandise exporter in 2022, but its share in world exports decreased to 14% from 15% in 2021 (WTSR, 2023).

Despite the growing recognition of international trade's importance for development, there remains a lack of empirical research on the specific growth spillover effects of trade between Nigeria and its major trading partners. Most existing studies on spillovers have focused on advanced economies or regional blocs—for instance, Canova (2005) and Dedola (2017) examined spillovers from the U.S. to emerging markets, while Baysoy and Altug (2021) investigated spillovers in the MENA region in relation to trade geography and institutions. Other studies, such as Zhang *et al.,* (2021), focused on financial market spillovers between China and the United States. These contributions, while valuable, leave a gap in understanding how bilateral trade relationships affect economic performance in African economies.

This study seeks to address this gap by exploring the growth spillover effects from trade between Nigeria and two key trading partners: China and India. By examining how economic developments in these countries influence Nigeria's growth trajectory, the research aims to contribute to the

literature on trade-related spillovers and provide evidence-based insights for policy. Understanding these dynamics is essential not only for academic discourse but also for informing Nigeria's trade and development strategy in an increasingly volatile global economy.

The remainder of this study is organized as follows; Section 2 hosts the literature review on the study while section 3 presents the methodology of the research. The results and discussion are presented in section 4 while section 5 hosts the conclusion and recommendation of the study.

2. Literature Review

Economic and financial spillover effects are critical phenomena that can significantly influence global markets, national economies, and individual sectors. These effects occur when economic activities or policies in one region or sector impact others, often transcending borders and industries (Accounting Insights, 2024). Apart from the influence of financial markets and technological spillovers, international trade has been determined a major means for transmission of cross border spillover effects (Silva et al., 2018).

The impact of transnational trade on an economy are usually diverse (Kneller, Morgan and Kanchanahatakij, 2008). In literature, there are basically two schools of thought with respect to the effects of international trade on an economy. The first of these schools of thought is the export-led growth school of thought which posits that export growth has a positive effect on a country's economic growth (Cândido and Lima 2010). According to Cândido and Lima (2010), between the period 1995 and 2005, exportation of products played considerable impact in the growth and development of some Asian economies. The other school of thought accentuates the likelihood that trade openness might have a negative impact on economic growth. This view posits that external trade might reduce employment and economic growth (Nassif, 2008; Bresser-Pereira and Marconi, 2010; Oreiro and Feijó, 2010). Increased imports could bring forth a resultant positive effect on an economy in the long run but negatively influence economic growth rate in the short run.

Many studies carried out in the past has displayed the positive appeal of spillover effects on economies (Poirson and Weber (2011); Bayoumi and Swiston (2009); and Helbling *et al.,* (2007). Though, these studies are based on developed economies such as Germany, United States and Japan, very few are on emerging economies. Some studies have however highlighted the fact that the effect of spillovers will depend on the level of development of the concerned economies and also on the level of integration (Grossman and Helpman, 1997; Poirson and Weber, 2011; Helbling et al., 2007). Some other studies on spillover effects presents the positive character of spillover effects but fail to present the uncertainty of trade effects on an economy's growth because growth in a country's income will normally stimulate imports of commodities from a trading partner (Hag et al., 2022; Gallowey *et al*., 2021; Chen *et al*., 2020).

Subsequently, Multiple studies (Silva et al., 2018; Thirlwall & Hussain, 1982; Marukawa, 2017) agree that the nature of a country's trade structure particularly the balance between high- and low-value exports significantly shapes the net effect of spillovers on growth. While Silva et al. (2018) emphasize the trade-based transmission of spillovers, Junaid et al. (2022) focus more on institutional channels. This highlights a key divide in the literature regarding the relative

importance of different transmission mechanisms". However, according to literature the three main established ways through which spillover effects are conveyed are through financial markets, international trade and commodity prices (Bayoumi and Swiston, 2009).

Thus, the effect of growth spillover from a key trading partner like China could be undesirable for emerging economies like Nigeria whose trade pattern involves importation of products with high value addition such as manufactured products and exportation of products with low value addition such as raw material resources. Whenever the total value of exports by a dependent country to a major industrialized economy like China increase, the value of imports might increase too because China's products are now more competitive. A product's competitiveness is somehow linked to the overall growth and development of the country producing it (Silva *et al.,* 2018).

In contrast to positive spillover empirical views, few studies present the negative influence of spillovers through trade mechanisms (Yang, 2008; Lipscomb and Mobarak, 2013). But more recent studies present the complexities of negative spillovers in the fields of marketing, finance, communication and political science (Arne et al., 2017; Bouzzine and Lueg, 2020; Hansen and Meschi, 2021). Buttressing negative spillovers views, Wang & Laufer (2024) carried out a cross disciplinary review of negative spillover research while identifying spillover types, risks, factors and response strategies. Findings highlight critical areas in gaining understanding of crisis spillover effect phenomena and how organizations can respond to spillover crises. Furthermore, some studies revealed that the different disciplines highlighting this contrary view, suggest that to reduce the negative spillover effect, organizations may need to respond to protect their reputation, for example, through using a crisis response strategy (Norheim-Hansen & Meschi, 2021; Poroli & Huang, 2018; Zhang & Lim, 2021). This is consistent with Laufer and Wang's (2018) recommendation that taking timely actions can reduce the potential negative spillover effects for some organizations, provided that these organizations exhibit any of the crisis spillover.

Varying methodologies have been applied to crises or negative spillover effect research namely; Accessibility diagnosticity framework (Ahluwali et al. 2001; Arne et al., 2017), associative network (Lei et al. 2008; Sanchez et al. 2020) attribution theory (Gao et al. 2015; Mehta et al. 2020) and reputation commons theory (Kashmiri et al. 2017). However qualitative interview was the least used methodology for negative spillover effects according to a recent study by Wang and Laufer (2024). Quantitative methodologies are more commonly applied to studies on spillover effects.

A World Bank study was carried out to determine spillovers and regional integration within Europe and Central Asia regions. Consequently, Baysoy and Altug (2020) investigated the importance of spatial spillovers in economic growth for the Middle East and North African region. Study findings show that the economic growth of the middle East and North African region is positively influenced by the growth of countries that have similar institutional characteristics and that are geographically close. However, trade linkages were found to matter less. Findings from the World bank study however suggest that Europe and Asia have high vulnerability to spillovers from both emerging and advanced economies due to their high degree of openness. Further findings revealed that though they reveal a wide degree of heterogeneity, spillovers were found to reflect the increasing integration of the study area with the European Union and the dependence of many economies on export commodities from Central Asia and Europe. They also emphasize China's

improved prominence as a trading partner to countries exporting energy (World Bank, 2016). In consonant with these studies, Ihori (1987) also carried out a study to examine the effect of spillovers and trade within a two-country model. The study findings revealed positive welfare implications of the relationship between spillover effects and the degree of capital mobility among the two countries considered.

Grossman and Helpman (1997) developed a theoretical model from which they discovered that economies increase their stock of knowledge as they benefit from the importation of goods and services. They noted that importation of goods and services definitely influences domestic growth and according to Solow's neoclassical growth model, this will bring about a long run economic progress in a country (Romer, 2011). While Solow's growth model highlights technological growth as an exogenous variable, Thirlwall and Hussain (1982) however argue that the key hinderance to long-run growth in emerging countries is balance-of-payments disequilibrium, mostly coming from the trade imbalance. They then concluded that growth in a country could influence growth in another country either though trade or technological transfer. The resultant effect will be determined by the pattern of trade between both countries. Moreover, in situations where imports and exports are in equilibrium, the effect of increasing demand on a country's growth due to increased exports will be determined by types and extent of diversification of exported goods. Essentially, increasing exports will have weak effect on economic growth in an economy whose export portfolio is undiversified and where exported products have low value addition (Thirlwall and Hussain,1982). This situation typifies many developing economies including Nigeria.

Empirical studies using VAR models (e.g., Mackowiak, 2007; Bi & Anwar, 2017; Tian et al., 2022) consistently show that U.S. monetary policy has significant short-term effects on emerging markets, especially through exchange rate and capital flow channels. VAR models are appropriate for these studies. Furthermore, results suggested that the the U.S monetary policy shocks quickly and strongly affect exchange rate in emerging markets and have more than proportionate impact on output and price level than even in the U.S.

Given the growing importance of China in global economy, recent studies have investigated the effects of China's macroeconomic shocks on the rest of the world. For instance, Kozluk and Mehrotra (2009) investigated the effects of People Republic of China's (PRC) monetary policy shocks on East and Southeast Asian economies. The findings revealed evidence of significant spillovers, with inflation and output responding significantly and positively to an expansionary monetary policy from PRC. Similarly, Arora & Vamvakidis (2011) examined the impacts of China's growth on Asian economy. The findings revealed that growth in China affects the Asia countries and the rest of the world in the last three decades. In a divergent opinion, Zhai & Morgan (2016) evaluated the effects of China economic slowdown on emerging Asian countries. The findings indicated that China's slowdown causes growth deceleration in developing Asian countries. Similarly, Gauvin & Rebillard (2018) evaluated the impact of China hard landing on the rest of the world. The results suggested that China's hard landing adversely affected Latin America and emerging Asia economies. Marukawa (2017) examined the influence of trade relations with China on GDP and manufacturing growth rates of other economies. The results revealed that while

exports to China have positive impact on GDP growth, imports from China negatively affect the manufacturing growth rates.

Few studies have investigated the impact of China's growth on African economies. Edwards and Jenkins (2006) investigated the effects of China and Indian's economies on 21 Sub-Saharan African (SSA) countries. The study concludes that the impacts of China's economy on SSA countries is significant. He (2013) also compared the impact of imports from China with those from the U.S and France on SSA countries. The findings revealed that impacts of Chinese's import have positive effects and are greater than the impacts of the U.S and France. In the same vein, Tang and Gyasi (2012) investigated the impact of China's Foreign Direct Investment (FDI) on employment in Ghana. The results indicated that China's FDI generates employment opportunities in Ghana. Habyarimana and Opoku (2018) also investigated the effects of China's exports of high-tech goods, ICT, and FDI on African growth. The results showed that China's export of high-tech goods and FDI positively stimulate African economic growth but retard technological progress.

While extensive work has been done on spillovers from the U.S. and China to Asia and Latin America, relatively little attention has been given to African countries, particularly regarding the trade structure and value-added implications. This study seeks to fill this gap by examining growth spillover effects from trade between Nigeria and two major trading partners; China and India.

This literature review has identified a number of research, upholding positive spillover effects of trade on another economy but fail to identify sufficient negative spillovers from trade. However, negative spillovers were identified in various disciplines namely marketing, finance, media, political science and with respect to technological transfers.

3. Methodology

3.1 Theoretical Framework

Following the works of Herzer et al., (2006); Waithe et al., (2011) and Leonard & Eredauwa (2019), this study used an improved version of an aggregate Production Function Model to establish the relationship between foreign investment, economic growth and trade. The aggregate production function or economic growth depends on human capital and physical. It relates how economic growth in an economy is dependent on available inputs. Aggregate output is contingent on labour, physical capital, knowledge, available natural resources, human capital, among others. International trade and investment contribute to growth through its impact on productivity.

Previous studies such as those of Edwards (1993), Rodrik (1995) Coe, Helpman and Hoffmaister (1997) found a positive relationship between international trade and productivity growth in developing countries. Increased trade among industrial countries have also been found to boost productivity growth of developing countries through spillovers.

Therefore, data analysis for this study is modeled after an Aggregate Production Function (APF) framework. This model has been used widely in many related studies to understand the impact of foreign direct investment flows on economic growth in developing countries (Leonard & Eredauwa (2019; Ashgari, 2013). The APF model has also been used by Feder, 1983; Kohpaiboon, 2004; Mansouri, 2005; Nabine, 2009; Fosu, 1990; Ukpolo, 1994 and Leonard & Eredauwa (2019).

Accordingly, the empirical model for this study starts with a simple neoclassical production function presented in equation (1).

$$Y_t = A_t K_t^{\alpha} L_t^{\beta} \quad (1)$$

Where Y denotes the aggregate production function of the economy at time t, and A K L are the level of total factor productivity, the capital stock, and the stock of labour respectively.

Bhagwati (1985) asserted that any gains from FDI on TFP (Total Factor Productivity) will be dependent on the volume of trade of a particular host country. This study looks at the impact of Trade and FDI on productivity, and by extension economic growth. Thus, we express total factor productivity as a function of FDI and Trade and, other explanatory variables. We assume that the methods of estimating trade, FDI and their effect on economic growth operating through TFP have been consistent over the years (Nabine, 2009). Our new equation incorporates all these effects; thus we express total factor productivity as follows:

$$A = f\ (X, M, FDI, OPN) \quad (2)$$

Following Herzer et al. (2006), Combining equation 2 with equation 1 we obtain equation 3

$$Y = f(\ L, K, X, M, FDI) \quad (3)$$

The explicit form of equation (3) where Y is economic output, K is Capital, L is labour, X is export, M is Imports and FDI is Foreign Direct Investment.

3.2 Data and Model Specification

To carry out this study, time series data were obtained from World Development Indicators (WDI) and Central Bank of Nigeria Statistical bulletin for a period of forty years between 1981 to 2021. A Fully Modified Ordinary Least Squares Model was used to determine the spillover effects from India and China's trade with Nigeria on Nigeria's economic growth. The two trading partners considered in this study were chosen based on their significant bilateral trade volumes and economic interdependence with Nigeria; China being the largest exporter to Nigeria and India is the largest importer from Nigeria (Workman, 2022). Furthermore, China and India were picked because Nigeria records the highest trade deficit from China and the highest trade surplus from India (Egbunike,2021).

In this study, our interest is to capture the growth spillover effects of trade between Nigeria and her two trading partners, China and India. Therefore, two models were specified. The Model 4 is for China and model 6 for India. The model for China is specified as follows;

$$Growth = f(CHEXP, CHIMP, CHFDI, GFCF, LABFP, GFCF, HCP) \quad (4)$$

The explicit form of equation (4) is specified in equation (5)

$$Growth = \beta_0 + \beta_1 CHEXP_t + \beta_2 CHIMP_t + \beta_3 CHFDI_t + \beta_4 GFCF_t + \beta_5 LABFP_t + \beta_7 HCP_t + \varepsilon_t \quad (5)$$

The model for India is specified as follows;

$$Growth = f(INDEXP, INDIMP, INDFDI, GFCF, LABFP, HCP,) \quad (6)$$

The explicit form of equation (6) is equation (7)

$$Growth = \beta_0 + \beta_1 INDEXP_t + \beta_2 INDIMP_t + \beta_3 INDFDI_t + \beta_4 GFCF_t + \beta_5 LABFP_t + \beta_7 HCP_t + \varepsilon_t \quad (7)$$

Where;
$Growth$ is the dependent variable and is the annual GDP growth rate
$CHEXP$= Total export from China (US$)
$CHIMP$= Total import to China (US$)
$CHFDI$= Chinese foreign direct investments (US$)
$GFCF$= Gross fixed capital formation (₦ billion)
$LABFP$= Labour Force Participation Rate (%)
HCP = Human Capital (Measured by Secondary School enrollment rate)
$INDEXP$ = Total export from India (US$)
$INDIMP$ = Total import to India (US$)
$INDFDI$ = Indian foreign direct investments (US$)
ε_t = Error term
β_0 = Constant
β_0, β_1, β_2, β_3, β_4, β_5, β_6, β_7 are regression parameters.

4. Results and Discussion

4.1 Preliminary Results (Results of Unit Root Test

The Augmented Dickey Fuller unit root test was first used to determine the stationarity of the variables. Result presentations are on Tables 1a and 1b.

Table 1a: Results of Unit Root Test for Model 4 (China)

Augmented Dickey Fuller Test

Constant and Trend

Variable	Level	First difference	Decision
$GDP\ growth$	-1.890584	-3.876850**	I (1)
$CHEXP$	-0.992071	-4.650715***	I (1)
$CHIMP$	-2.236817	-5.215261***	I (1)
$CHFDI$	-3.364491	-7.623950***	I (1)
$GFCF$	-7.041691***	-5.372880***	I (0) and I (1)
$LABFP$	-2.782029	-4.620328***	I (1)
HCP	-1.689708	-5.745236***	I (1)

***, ** and * represents 1%, 5 % and 10% levels of significance

Source: Author's computations, 2023

Results from Tables 1a and 1b reveal that the variables were mostly of order I (1) and this prompted the use of the Johansen co integration model to determine the existence of cointegrating relationship among the variables in this study.

Table 1b: Results of Unit Root Test for Model 6 (India)

Augmented Dickey Fuller Test

Constant and Trend

Variable	Level	First difference	Decision
$GDP\ growth$	-1.89054	-3.876850**	I (1)
$INDEXP$	-2.098681	-4.756604***	I (1)
$INDIMP$	-2.236817	-4.729619***	I (1)
$INDFDI$	-3.084812	-10.57599***	I (1)
$GFCF$	-7.041691***	-5.372880***	I (0) and I (1)
$LABFP$	-2.782029	-4.620328***	I (1)
HCP	-1.689708	-5.745236***	I (1)

***, ** and * represents 1%, 5 % and 10% levels of significance

Source: Author's computations, 2023

4.2 Johansen Co – integration Test for China model (Equation 4)

From Table 2, trace test for China model indicates at least 4 cointegrating equations at 5% level of significance and this makes us reject the null hypothesis of no cointegration and conclude that there is co-integration among variables in the model.

Table 2: Result of Trace Test Statistic and Max -Eigen value test

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical value**	**Probability**
None *	0.7937	230.7022	159.5297	0.0000
At most 1 *	0.7089	169.1433	125.6154	0.0000
At most 2 *	0.6215	121.0133	95.7537	0.0003
At most 3 *	0.6071	83.1240	69.8189	0.0030
At most 4	0.3923	46.6927	47.8561	0.0640
At most 5	0.2865	27.2706	29.7971	0.0952
At most 6	0.2225	14.1074	15.4947	0.0800
At most 7*	0.1042	4.2932	3.84147	0.0383
Hypothesized No. of CE(s)	**Eigenvalue**	**Max -Eigen Statistic**	**0.05 Critical value**	**Probability**
None *	0.7937	61.5588	52.3626	0.0044
At most 1 *	0.7089	48.1301	46.2314	0.0310
At most 2	0.6215	37.8893	40.0776	0.0864
At most 3 *	0.6071	36.4312	33.8769	0.0242
At most 4	0.3923	19.4221	27.5843	0.3826
At most 5	0.2865	13.1632	21.1316	0.4374
At most 6	0.2225	9.8142	14.2646	0.2244
At most 7 *	0.1042	4.2932	3.8415	0.0383

***, ** and * represents 1%, 5 % and 10% levels of significance
Source: Author's computations, 2023.

Table 2 also show from max eigen value test result that there are at least two cointegrating equations at 5% level of significance. We therefore reject the null hypothesis of no cointegration and conclude that there is cointegration among variables in model 4

4.3 Results of Johansen co-integration test for India model (Equation 6)

Results from Trace test statistic on Table 3 reveals that there are at least 3 co-integrating equations at 5% level of significance, therefore we reject the null hypothesis of no co integration. Results of eigen value test on Table 3 also support evidence of co integration at 5% level of significance. After establishing the fact that co-integration exists among the variables in model 4 and 6, we go on to estimate the effects of relationship among the variables using a Fully Modified Ordinary Least Squares model.

Table 3: Result of Trace Test Statistic and Max -Eigen value test

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical value**	**Probability**
None *	0.8911	202.3762	125.6154	0.0000
At most 1 *	0.7857	129.2113	95.7537	0.0000
At most 2 *	0.6632	78.3776	69.8189	0.0089
At most 3	0.4889	42.4614	47.8561	0.1462
At most 4	0.3466	20.3135	29.7971	0.4018
At most 5	0.1446	6.2708	15.4947	0.6635
At most 6	0.0333	1.1161	3.8415	0.2908
Hypothesized No. of CE(s)	**Eigenvalue**	**Max -Eigen Statistic**	**0.05 Critical value**	**Probability**
None *	0.891077	73.16484	46.23142	0.0000
At most 1 *	0.785708	50.83369	40.07757	0.0022
At most 2 *	0.663235	35.91618	33.87687	0.0282
At most 3	0.488880	22.14799	27.58434	0.2129
At most 4	0.346580	14.04268	21.13162	0.3615
At most 5	0.144613	5.154633	14.26460	0.7222
At most 6	0.033257	1.116138	3.841466	0.2908

***, ** and * represents 1%, 5 % and 10% levels of significance
Source: Author's computations, 2023

4.4 Regression Estimates for Effects of China's Trade on Nigerian Economic Growth

Results on Table 4 reveal a significant ($P < 0.01$), positive effect of China's imports on economic growth. The magnitude of the effect is to the tune of 26%. This means that a one unit rise in China's imports from Nigeria contributes up to 26% to economic growth. This result is in line with the study conducted by Adonike, Mbah and Uzonwanne (2022) who asserted that exports from Nigeria to China significantly impacts economic growth and also from Stephen and Obah (2017) who asserted that international trade has a significant positive impact on economic growth in Nigeria. Adonike *et al.,* (2022) asserted that petroleum and solid mineral imports from China to Nigeria are observed to be the key drivers of Nigeria's economic growth.

Findings also reveal that China's export had no significant effect on Nigeria's economic growth. This could be because of the nature of products imported from China which are mostly consumables and some of which are hostile to domestic small-scale industries. This result also lends credence to the findings of Diogu, Nwigwe, Anne and Diogu (2014) and also the works of Adonike *et al.,* (2022) who both asserted that importation from China to Nigeria has been observed to be inimical to the growth of the Nigerian economy. The assertion is that the continual reliance by Nigerians on importation of textile materials and some other consumables from China has resulted in the neglect of the home-based textile industry which were once vibrant but are facing extinction today.

According to Leonard and Erediauwa, (2019), some of the products Nigeria import from China include textile materials, ready-made wears, nuclear reactors, electrical appliances and electronics, articles of iron and steel, articles of aluminium, rubber and foot wears while Nigeria's export

products to China include crude oil, wood, cocoa, copper, raw hides and skins and leather, edible fruits and rubber.

Furthermore, gross fixed capital formation and human capital had significant positive effect on Nigeria's economic growth at 1% and 5% levels of significance respectively and to the tune of 40% and less than 1% accordingly. It is however important to note that China's exports had no significant impact on Nigeria's growth. Diagnostics statistics of the model reveal a high adjusted R^2 of 98% showing that the model is of good fit.

Table 4: Regression Estimates for Effects of China's Trade on Nigerian Economic Growth

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$logCHEXP$	-0.0276	0.04259	-0.6472	0.5220
$logCHIMP$	0.2581***	0.0540	4.7762	0.0000
$logGFCF$	0.3967***	0.07378	5.3758	0.0000
$logCHFDI$	0.0398*	0.0219	1.8175	0.0782
$LABFP$	-0.0089**	0.0041	-2.1360	0.0402
HCP	0.0029**	0.0011	2.5770	0.0146
C	0.7644	0.3761	2.0321	0.0503
R-squared	0.9851			
Adjusted R-squared	0.9824			

***, ** and * represents 1%, 5 % and 10% levels of significance
Source: Author's computations, 2023

Table 5 reveals the regression estimates for effects of India's trade on Nigerian economic growth. Indian export and import had significant positive effect ($p < 0.01$) on the Nigerian GDP at 44% and 67% respectively. This could be due to the nature of products Nigeria imports from India which includes refined petroleum products, motorcycles and packaged medication among others (World Atlas, 2023). On the other hand, products Nigeria exports to India include crude oil, gold, cocoa, leather, wood and copper (Leonard & Erediauwa, 2019). This explains the positive impact of Indian import and export on the Nigerian economic growth. Gross fixed capital formation also had significant positive effect on real GDP at 5% level of significance.

On the other hand, Indian foreign direct investment had significant negative effect on the Nigerian growth at 5% level of significance and to the tune of – 0.02%. This could be because there are no sufficient investment of Indian economy in Nigeria.

Table 5: Regression Estimates for Effects of India's Trade on Nigerian Economic Growth

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$logINDEXP$	0.4410***	0.115	3.8299	0.0006
$logINDIMP$	0.6730***	0.1185	5.6793	0.0003
$logINDFDI$	-0.0199**	0.0087	-2.2929	0.0293
$logGFCF$	0.1490**	0.0650	2.2927	0.0293
$LABFP$	-0.0105**	0.0041	-2.5755	0.0154
HCP	0.0015	0.0010	1.5503	0.1319
C	0.3957	0.4376	0.9043	0.3733
R-squared	0.989997			
Adj R-squared	0.987927			

***, ** and * represents 1%, 5 % and 10% levels of significance
Source: Author's computations, 2023

4.5 Result of Granger Causality Test

Result presentation on Table 6 reveal that there is a unidirectional causality between China export (CHEXP) to Nigeria and China import from Nigeria and the Nigerian economic growth at 5% and 1% level of significance respectively. Furthermore, there is a bi directional causality between the Nigerian Gross fixed Capital formation and economic growth (GFCF). China's foreign direct investment was also found to granger cause investment in Nigeria and economic growth (GDPgrowth) granger cause human capital proxied by secondary school enrolment.

Table 6: Result of Granger Causality Tests (China Model)

Null Hypothesis:	**F-Statistic**	**Prob.**
logCHEXP doesn't drive logGDPgrowth	4.24817**	0.0226
logGDPgrowth doesn't drive logCHEXP	0.42224	0.6590
logCHIMP doesn't drive logGDPgrowth	5.07935***	0.0117
logGDPgrowth doesn't drive logCHIMP	1.70751	0.1965
logCHNFDI doesn't drive logGDPgrowth	0.55277	0.5804
logGDPgrowth doesn't drive logCHFDI	3.46147**	0.0428
logGFCF doesn't drive logGDPgrowth	3.83156**	0.0316
logGDPgrowth doesn't drive logGFCF	10.5854***	0.0003
logGFCF doesn't drive LogCHFDI	0.83743	0.4416
logCHFDI doesn't drive logGFCF	7.29512***	0.0023
HCP doesn't drive logGDPgrowth	0.14845	0.8626
logGDPgrowth doesn't drive HCP	3.82557**	0.0317

***, ** and * represents 1%, 5 % and 10% levels of significance
Source: Author's computations, 2023

Table 7 reveals that there is a unidirectional causality between Indian export (INDEXP) and economic growth in Nigeria at 1% level of significance. A unidirectional causality also exist between Indian import (INDIMP) and economic growth at 5% level of significance. The Indian foreign direct investment also granger cause gross fixed capital formation.

Table 7: Granger Causality Tests (India Model)

Null Hypothesis:	F-Statistic	Prob.
logINDEXP doesn't drive logGDPgrowth	6.7275***	0.0035
logGDPgrowth doesn't drive logINDEXP	0.1748	0.8403
logINDIMP doesn't drive logGDPgrowth	4.7703**	0.0149
logGDPgrowth doesn't drive logINDIMP	0.4264	0.6563
logINDFDI doesn't drive Cause logGDPgrowth	3.3930**	0.0479
logGDPgrowth doesn't drive logINDFDI	0.5636	0.5755
logGFCF doesn't drive logGDPgrowth	3.8316**	0.0316
logGDPgrowth doesn't drive Cause logGFCF	10.5854***	0.0003
logGFCF doesn't drive LogINDFDI	0.5732	0.5702
logINDFDI doesn't drive logGFCF	5.0731***	0.0132
HCP doesn't drive logGDPgrowth	0.1485	0.8626
logGDPgrowth doesn't drive HCP	3.8256**	0.0317

***, ** and * represents 1%, 5 % and 10% levels of significance
Source: Author's computations, 2023

5. Conclusion

This study investigated the impact of spillover effects on the Nigerian economy. The findings reveal important insights into the nature and magnitude of growth spillovers resulting from trade between Nigeria and its two major trading partners. The result reveal that China's imports had significant positive link with Nigeria's economic growth while on the other hand, India's export and import had significant positive impact on Nigeria's real GDP to the tune of 26%, 44% and 67% respectively. The granger Causality test reveal that both imports and exports from both countries are drivers of the Nigeria economic growth.

The implications of these findings are significant for policymakers and stakeholders involved in shaping trade policies and fostering economic growth. By understanding the growth spillover effects from trade, policymakers can design more targeted and effective trade strategies to enhance economic performance. Moreover, this study contributes to the existing literature on the relationship between trade and economic growth, particularly in the Nigerian context, by providing empirical evidence on the magnitude and mechanisms of growth spillovers resulting from trade integration. In conclusion, this research contributes to the understanding of the trade-growth nexus by investigating the growth spillover effects of trade between Nigeria and its two trading partners. The findings underscore the importance of trade as a catalyst for economic growth and provide insights into the channels through which these spillover effects occur. Ultimately, the results of this study can inform policymakers in Nigeria and other developing countries on the potential benefits of trade and help guide their efforts in harnessing the full potential of international trade for sustainable economic development.

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