Assessment of the impact of Chinese Foreign Direct Investments on Nigeria's Free Trade Zones: Implications for Productivity

ALAWIYE O. Moshood[1*] and TORIOLA K. Anu[2]

ABSTRACT

This study assessed the productivity effect of Chinese foreign direct investments in Nigeria's free trade zones. Specifically, the study analyzed the effect of Chinese direct investment in Nigeria on productivity; determined the effect of Chinese exports to Nigeria on productivity; and investigated the effect of Chinese imports from Nigeria on productivity. This study utilized secondary data sources gathered from United Nations Conference on Trade and Development, National Bureau of Statistics, and Ministry of Commerce, People's Republic of China. The qualitative analysis used in the study is based on the Ordinary Least Squares (OLS) regression. The result shows that Chinese FDI and imports do not show significant effects while Chinese exports to Nigeria exerts a positive and significant impact on development. The study submitted that Chinese FDIs in Nigeria's FTZs have not translated into tangible productivity. The study recommends the need to enhance and enforce regulations to ensure transparency, accountability, and compliance with environmental and labour standards within Nigerian Free Trade Zones (FTZs).

Keywords : *Chinese, Nigeria, Productivity, FDI, Free Trade Zones*

1. Introduction

China has become a major global economic player through its Foreign Direct Investment (FDI) policy. Since opening up to the world in 1979, China has expanded its global reach by investing in many countries (Sun, 2018). Nigeria, one of Africa's largest economies, has also attracted foreign investment (Terwase, Abdul-Talib & Zengeni, 2014).

The existing literature presents a spectrum of viewpoints regarding the socio-economic impact of FDIs and FTZs, spanning from positive to negative outcomes. Acknowledging the contextual dependency of FDI and FTZ impact on economic development is crucial. Previous studies on free trade zones (FTZs) in Nigeria have examined various perspectives, such as the new inclination in Chinese foreign direct investment (FDI) and technology transfer in Nigeria's manufacturing sector, with a focus on their potential to accelerate Nigeria's industrialization (Chen et al., 2016). The contribution of export processing zones to job creation in Nigeria has also been investigated (Harry, 2016). Additionally, scholars have explored issues of deindustrialization and technological stagnation in Sub-Saharan Africa (Ogbu, Oyeyinka & Mlawa, 1995) and the management of technological change, particularly in Nigeria's coal industry (Oyeyinka, 1995). Other studies have addressed the implementation of industrial ecology (IE) principles in Nigerian free trade zones (Falade, 2015) and the effects of FTZs on the lives and livelihoods of indigenous communities (Lawanson and Agunbiade, 2018). Furthermore, research exists on the export processing zone development strategy and the diversification of Nigeria's economy (Harry, 2016). The concept of free trade zones in Nigeria, both in theory and practice, has also been examined (Adepoju, 2019).

In terms of long-term vs. short-term effects, the existing body of research underscores that the consequences of FDIs and FTZs often materialize over an extended temporal horizon rather than in the short term (Frick & Rodríguez-Pose, 2022). Furthermore, the concept of spillover benefits and linkages, wherein local entities benefit from the presence of foreign firms, holds significant interest within the FTZ context (Basant, 2018). While economic development is of paramount concern, the concurrent environmental and social dimensions of Chinese FDIs in Nigerian FTZs necessitate thorough investigation (Jackson, 2019). Again, local perspectives and community engagement have also been engaged by scholars (Lawanson & Agunbiade, 2018).

These previous studies have not critically addressed the question of development especially in certain perspectives. The intricate determinants that shape the influence of Chinese FDIs within Nigerian FTZs remain largely unexplored. This study asserts the necessity of

1. *Department of International Relations, Hallmark University Ijebu-Itele, Nigeria.*
2. *Department of Economics, Hallmark University Ijebu-Itele, Nigeria.*
* *Corresponding Author ✉ moalawiye@hallmarkuniversity.edu.ng*

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conducting a comprehensive inquiry into these factors, encompassing governance structures, regulatory dynamics, and the effectiveness of policies, to provide a holistic understanding of the intricate dynamics at play. Consequently, this research aims to delve into the temporal dimension of Chinese investments in Nigerian FTZs, seeking to determine whether the immediate gains translate into sustained and sustainable economic development. This study endeavours to scrutinize whether Chinese investments in Nigerian FTZs generate these positive spillover effects, encompassing knowledge diffusion, technology transfer, and the development of domestic supply chains, and how these contribute to economic development. The research seeks to unravel whether these investments align with the principles of sustainable development and to assess their implications on the environment and society. This research underscores the need to comprehend the localized dynamics and concerns that permeate the impact of Chinese FDIs in FTZs, forming the foundation for the development of inclusive and equitable strategies. Within the realm of policy formulation and decision-making, this research acknowledges the urgency of providing empirically grounded policy recommendations.

The broad objective of this study is to assess the productivity effect of Chinese foreign direct investments in Nigeria's free trade zones. The specific objectives of the study are to :

i. analyse the effect of Chinese direct investment in Nigeria on productivity;
ii. determine the effect of Chinese exports to Nigeria on productivity; and
iii. investigate the effect of Chinese imports from Nigeria on productivity.

The significance of this study lies in its exploration of the dynamics of this bilateral economic cooperation is crucial as it sheds light on the potential benefits and challenges associated with foreign investments in a developing nation like Nigeria. The findings of this study serves as a valuable resource for these stakeholders in designing and implementing effective policies that foster sustainable development and maximize the benefits of Chinese FDI in FTZs. Moreover, the research provides insights into the regulatory framework and institutional mechanisms necessary to address potential challenges arising from such investments. For Chinese investors and businesses exploring opportunities in Nigeria's FTZs, this study serves as an essential reference guide. By identifying successful investment patterns and areas of growth potential, the research will assist foreign entities in making informed decisions, minimizing risks, and maximizing returns on their investments. The significance of this study extends to the academic realm as it contributes to the growing body of literature on international economics, foreign investments, and economic development. Scholars and researchers in the fields of international business, economics, and development studies will benefit from the empirical insights and analytical methods employed in this research.

2. Literature Review

The surge in foreign direct investment (FDI) gained momentum after World War II, coinciding with the emergence of globalization (Nayak and Choudhury, 2014). The 1950s and 1960s witnessed a growing impact of foreign investment and multinational corporations (MNCs), particularly the inflow of FDI from the United States into European countries, which piqued the interest of researchers in understanding MNCs and the concept of international production. This led to the development of various theories to explain the movement of capital across borders. Although periodic literature reviews have explored FDI theories, studies explaining FDI inflows into developing country Free Trade Zones (FTZs) remain limited.

Selma Kurtishi-Kastrati (2013) highlighted FDI as a crucial component of economic growth and development, emphasizing the need to acknowledge both the positive and negative aspects of FDI. Although the author recognized FDI's impact on host countries, the analysis does not encompass FDIs in FTZs in developing nations. Chen et al. (2016) categorized foreign direct investment (FDI) into two main types: greenfield and brownfield FDI. Greenfield FDI involves establishing new business facilities in the host country, while brownfield FDI involves mergers or acquisitions of existing businesses. Both types of FDI are believed to be beneficial to the economies of receiving countries. Greenfield FDI increases capital stock, employment, and outputs, while brownfield FDI enhances productivity. Additionally, researchers like Masron et al. (2012) have divided FDI into two categories: market-seeking horizontal FDI and efficiency-seeking vertical FDI. A more comprehensive classification of FDI, credited to Drogendijk and Blomkvist (2013) includes "natural resource-seeking," "market-seeking," "efficiency-seeking," and "strategic asset-seeking."

Over time, free-trade zones have become a significant aspect of international trade, especially in less developed countries. Companies that operate within these zones typically enjoy a range of legal and financial advantages. These advantages may include the ability to establish a business, import parts and equipment duty-free, retain and utilize foreign exchange earnings, and occasionally benefit from tax reductions on income or property. Bonaldo (2022) explores the concept of free zones, encompassing customs-bonded warehouses/factories, export processing zones (EPZs), special economic zones (SEZs), free ports, and comprehensive free trade zones.

Their focus is on the objectives and characteristics of implementing an export-led growth strategy in Asia via EPZs/SEZs. It is noted that EPZs in market economies and SEZs in socialist countries, such as China, exhibit significant differences. Success in Asian EPZs/SEZs is measured in terms of factors like foreign investment attraction, foreign exchange earnings, export expansion, job creation, technology transfer, domestic linkages, and regional development. Several challenges faced by Asian zones are identified, including inadequate infrastructure, social issues related to a high percentage of female workers and the exploitation of the indigenous labour force, inefficient government administration, vulnerability to changing global economic conditions, and competition among themselves due to similar products and markets.

2.2 Theoretical Review

Modernization theory proves valuable in comprehending development-related issues. Two enduring aspects of early modernization theories remain central to contemporary modernization debates: the notions of "frequent social change" and "growth," as highlighted by Tipps (1973). Walter Rostow's (1960) concept of economic growth is one of the few that encompasses both of these essential elements. Rostow's model delineates five stages of development: the traditional society, the pre-condition for take-off stage, the take-off stage, the maturity stage, and the stage of high-mass consumption. Compared to Alexander Gerschenkron's "backwardness" model, Rostow's framework leans more towards structuralism, as noted by Angahar (2016). According to Rostow, economic growth initially necessitates the leadership of specific economic sectors. Rostow's model suggests that in the early stages of development, countries may be compelled to rely on raw material exports to fund the expansion of an industrial sector that has yet to attain a high level of competitiveness. Some staunch proponents of free trade disagree with Rostow's model, as it aligns with John Maynard Keynes' view on the importance of government control over domestic growth (Angahar, 2016). Rostow's fundamental assumption is that countries aspire to modernize and grow, and that society will embrace materialistic norms related to economic growth, as noted by Pupavac (2010).

Dependency theory, rooted in Karl Marx's classical analysis of imperialism, extends Marx's historical interpretation to global issues. This theory emphasizes development and its global impacts, emphasizing that resources flow from underdeveloped states at the periphery to wealthy "core" states, enriching the latter at the expense of the former. Dependency theory suggests that an economy becomes dependent when it cannot achieve self-sustained development due to its position and relations within the international system and its internal structure. The pursuit of development through free trade zones, in particular, resembles past patterns of dependence. This situation suggests that achieving development requires breaking free from the constraints imposed by stronger partners, which has been a long standing challenge.

2.3 Empirical Review

China's growing involvement with African governments and its increasing global assertiveness have sparked heated debates within academic circles concerning how to conceptualize China's role in Africa. The launch of overseas special economic cooperation zones took center stage in 2006 when the Chinese government announced its plans to establish up to fifty of these zones abroad during the Forum on China-Africa Cooperation (FOCAC). As of June 2010, Chinese businesses had invested a total of $700 million in constructing 16 of these zones, according to China's Ministry of Commerce (MOFCOM). The MOFCOM also reported over 200 businesses operating within these zones, attracting $2.5 billion in investments (World Bank, Final Report, January 2021). Scholars and analysts worldwide have been closely examining these developments.

Bräutigam and Tang (2014) investigated Chinese Special Economic Zones in Africa as part of China's "going global" strategy. They argue that China's strategy of creating special economic zones in Africa represents a unique form of globalization and contradicts conventional Foreign Direct Investment (FDI) theories. They suggest that these zones are no longer exclusively driven by the availability of natural resources, and the location of these zones appears to be influenced by market size and growth potential, often focusing on countries with weaker institutions. Dannenberg et al. also highlight the potential negative impact of institutional quality on hosting a Chinese Special Economic Zone, as these zones can become less relevant when host countries improve their institutions and increase their bargaining power.

Bbaala (2015) raises questions about some of China's more recent engagements with Africa, even as he acknowledges China's historical support during the continent's liberation struggles and its contributions to Africa's development through foreign direct investment, infrastructure development, trade, and bilateral aid. Bbaala highlights concerns about potential neocolonial aspects of North-South relations in the context of China-Africa relations. He also acknowledges the role of the China-Africa relationship in promoting South-South development alternatives as a counterbalance to the peripheral status of developing countries in the global order. Bbaala suggests that China's interests in Africa include securing natural resources, expanding international markets for its manufactured goods, and providing opportunities for Chinese multinational corporations. He concludes that many African countries have turned to China, especially in their eastern endeavors, primarily to level the playing field

in international politics and economics. However, he points out that Africa faces various endemic obstacles that have hindered its development since gaining independence.

Vaes and Huyse (2013) explores African states' engagements with emerging powers, emphasizing the significance of South-South Cooperation (SSC) in fostering economic development. The study points out that SSC is not a new concept but has evolved from political independence concerns to contemporary economic relationships. African nations can benefit from alternative investments and aid packages offered by emerging Southern partners. The research emphasizes the role of organizations like the Forum on China-Africa Cooperation (FOCAC) as a platform for mutually beneficial engagement but highlights the need for effective continental strategies to maximize these opportunities.

Using annual time series data within a neoclassical framework, Fasanya (2012) investigates the impact of foreign direct investment on Nigerian economic growth from 1970 to 2010. The study reveals that both foreign direct investment and domestic investment positively influence Nigeria's economic growth. Fasanya suggests that the country's economic planners should strive to create a favorable business environment that encourages both foreign and domestic investors, promotes innovation and skill enhancement, and fosters a competitive corporate climate. This research challenges the narrative that Western governments, scholars, and financial institutions have not significantly improved Nigeria's economy and underscores the need for policies that prioritize the welfare of the domestic populace.

In the realm of foreign direct investment, Oyeranti et al. (2011) delve into the economic relationship between China and Nigeria, particularly in the context of FDI. Their research centers on China-Nigeria investment relations, with a particular focus on aspects such as job creation and the competitive and complementary effects of Chinese companies on local firms. Oyeranti et al. note that Chinese investment in Nigeria is primarily concentrated in select strategic sectors, notably extractive industries, often in collaboration with state-owned enterprises or joint ventures. Their findings underscore that the China-Nigeria engagement has both advantages and disadvantages, and achieving optimal outcomes hinges on the implemen-tation of policies and institutions that maximize complementary effects and minimize competing effects. They highlight the need for comprehensive laws, regulations, and enforcement to address the gaps that Chinese investors have exploited in recent decades.

Ighodaro (2018) sheds light on the potential of FDI-driven industrialization in Nigeria, drawing lessons from China's experience. FDI, Ighodaro contends, can expedite industrialization and structural transformation, leading to job creation. The author argues that FDI can facilitate technological transfer, contributing to industrial development and the growth of sectors like telecommunications in Nigeria. Ighodaro underscores the importance of attracting FDI with caution to prevent the displacement of local industries. The author also identifies insecurity, inadequate infrastructure, and a poorly developed road network as major hurdles to industrialization in Nigeria, emphasizing the need for robust infrastructure development and the assurance of safety for both people and property.

Chen (2021) highlights the substantial flow of Chinese foreign direct investment into Nigeria, particularly within emerging manufacturing clusters. This research examines the drivers of Chinese outward investment in Nigeria, focusing on the years from 2014 to 2017. The study emphasizes the potential for FDI to stimulate technology transfer processes that can foster broader industrialization and structural transformation. However, it acknowledges that the development of local linkages, necessary for positive spillovers, faces challenges such as poor infrastructure, skill shortages, and low social trust. Chen also identifies political and exchange rate instability as issues faced by investing firms. The research underscores that building local linkages and greater localization can better prepare firms to navigate these challenges. Imanche et al. (2021) explore the influence of public opinion in shaping political trajectories. They argue that as global interconnectivity increases, perceptions of China's top 40 trading partners will evolve. China has been a key destination for Chinese investment in Africa, particularly Nigeria. The pursuit of multilateral agreements significantly impacts how nations engage in politics and economics. The authors conclude that the success of FDI by Chinese investors and businesses across various sectors significantly influences Nigerian perceptions of Chinese FDI and its acceptability.

3. Methodology

This study employed ex post facto research design using quantitative data to investigate the relationship between Chinese Foreign Direct Investments (FDIs) in Nigeria's Free Trade Zones (FTZs) and development. Thus, the study employed a quantitative method which involves generating statistical data that can be transformed into usable statistics, which was sourced through UNCTAD, NBS, MOPCOM. The chosen survey research design enables the systematic collection of data to describe the nature, features, and state of affairs within the study population. Additionally, the design complements the documentary surveys of relevant official and international materials, enhancing the comprehensiveness of the research. The data generated from the secondary data were analyzed using regression analysis.

Table 1 : *Descriptive Statistics*

	Mean	Median	Std. Dev.	Skewness	Kurtosis
GDPP	264358.2	275625.7	181608.9	0.096868	1.421991
FDI_C	166.6132	171.8600	100.3614	0.563059	2.758488
EXP_C	6898633.	5475594.	6520675.	0.668163	2.352367
IMP_C	968789.0	537080.3	927863.5	0.822734	2.500462
LOAN_C	827.2000	880.0000	518.5539	0.569196	2.187014

Source : *Author, 2023*

4. Results and Discussion

4.1 Descriptive Analysis

Descriptive Statistics

The descriptive statistics presents summary statistics on Nigeria's gross domestic product (GDP), economic ties, productivity, China FDI to Nigeria, and China loan to Nigeria. The dataset is presented in the appendixes.

Descriptive statistics (Table 1) provide valuable insights into the central tendency and variability of a dataset. In table 1, the variables are GDPP (Gross Domestic Product per capita), FDI_C (China FDI to Nigeria), EXP_C (China export to Nigeria), IMP_C (China import from Nigeria), and LOAN_C (China loan to Nigeria).

The mean GDPP 264,358.2 indicates the average value of Gross Domestic Product per capita in Nigeria. The standard deviation represents the dispersion or variability around the mean GDPP. With a relatively large standard deviation, it suggests that there is considerable variation in the GDPP values across the years. The high mean of GDPP indicates a relatively high average income level in Nigeria. However, the large standard deviation suggests economic inequality or fluctuations in the country's economic performance. Some years experienced significant growth or decline in GDPP, leading to a wider spread of values. Although higher GDPP can leads to increased standards of living and improved quality of life for individuals. However, factors such as income inequality and economic shocks can influence the distribution and stability of GDPP.

The mean of FDI_C 166.6132 represents the average China Foreign Direct Investment (FDI) to Nigeria. The standard deviation measures the dispersion or variability in the FDI values across different years. The mean FDI_C indicates the average level of Chinese FDI in Nigeria which is very high. The standard deviation suggests that FDI values have varied significantly over the years, with a wide range of values. Foreign direct investment can have important implications for economic growth and development. Higher FDI inflows can contribute to increased capital investment, job creation, technology transfer, and improved productivity. However, the variability in FDI values could indicate fluctuations in investor confidence or changing economic conditions.

The mean of EXP_C 6,898,633 represents the average value of China's exports to Nigeria. The standard deviation measures the spread or variability in export values across different years. The mean EXP_C indicates the average level of Chinese exports to Nigeria which is very high. The standard deviation suggests a high degree of variation in export values over the years. China's exports to Nigeria play a significant role in bilateral trade and economic relations. The large standard deviation could reflect changes in demand, shifts in global trade dynamics, or economic conditions affecting Nigeria's import capacity.

The mean of IMP_C 968,789.0 represents the average value of China's imports from Nigeria. The standard deviation measures the dispersion or variability in import values across different years. The mean IMP_C indicates the average level of Chinese imports from Nigeria is high. The standard deviation suggests a substantial variation in import values over the years. China's imports from Nigeria typically involve commodities such as oil and gas. The large standard deviation could be influenced by changes in global energy prices, shifts in demand, or fluctuations in Nigeria's export capacity.

The mean of LOAN_C 827.2000 represents the average value of loans provided by China to Nigeria. The standard deviation measures the dispersion or variability in loan values across different years. The mean LOAN_C indicates the average level of loans from China to Nigeria is high. The standard deviation suggests a considerable variation in loan values over the years. China's loans to Nigeria play a significant role in financing infrastructure projects and supporting economic development. The large standard deviation may reflect changing borrowing needs, negotiation dynamics, or evolving economic priorities.

The descriptive statistics table provides valuable insights into various economic indicators in Nigeria, including GDPP, UNEM, POV, FDI_C, EXP_C, IMP_C, and LOAN_C. The implications discussed above provide a preliminary understanding of the economic situation in

Nigeria and highlight potential areas of focus for policymakers and researchers. However, it's important to conduct further analysis, including regression modeling and hypothesis testing, to gain a more comprehensive understanding of the relationships and dynamics between these variables.

Trend Analysis

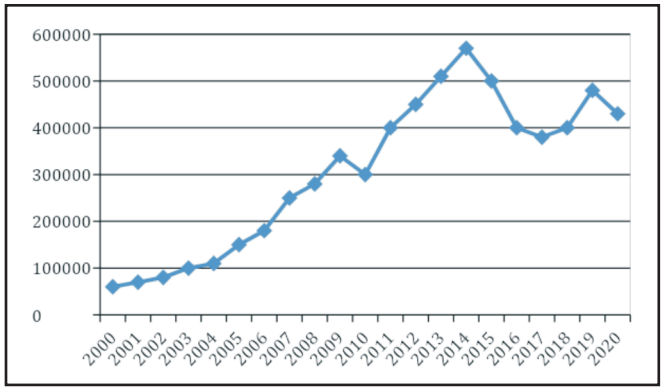

Figure1 : *Trend of Nigeria's productivity (2000-2020) (Average growth rate)* • ***Source :*** *Author, 2023 from World Bank Development Indicators (WDI)*

The Figure 1 represents the level of productivity measured by average growth rate in Nigeria from 2000 to 2020. It shows the evolution of productivity in Nigeria, which is often associated with changes in technology, human capital, institutions, and other structural factors. From 1995 to 2000, Nigeria's productivity growth rate was relatively slow but steady. This is the period following the end of the military rule and Nigeria's return to democracy in 1999. The new political dispensation initiated numerous economic reforms which could have resulted in modest productivity gains (Sanusi, 2010).

In 2001 and 2002, there was a noticeable increase in productivity growth. This increase coincided with a boom in global oil prices. Given that Nigeria is a major oil exporter, the oil boom could have stimulated economic activity, leading to increased productivity (Dauda, 2013). From 2003 to 2009, productivity growth accelerated significantly, which could be due to several factors including the high oil prices and the diversification effort in the economy. Moreover, the banking sector reforms in 2004-2005, which aimed to strengthen the financial system, could have also contributed to this productivity growth (Eichengreen et al., 2011). The sharp drop in productivity in 2010 might be linked to the aftermath of the 2008-2009 global financial crises even though Nigeria was initially insulated from the crises, it eventually affected the economy through lower oil prices and reduced foreign investment (Akinlo, 2012).

From 2011 to 2014, productivity growth rebounded, potentially due to high oil prices, the continuation of economic reforms, and increased investment in infrastructure. However, productivity growth fell significantly from 2015 to 2017, corresponding to the period of the oil price crash in 2014-2015. The drop in oil revenues led to a severe economic recession in Nigeria in 2016, which could explain the fall in productivity during this period (World Bank, 2017). The slight recovery in productivity in 2018 and 2019 might be due to the recovery in oil prices and the government's efforts to diversify the economy. However, the dip in productivity in 2020 is likely due to the impact of the COVID-19 pandemic, which disrupted economic activities globally and led to another oil price crash (World Bank, 2020).

The slight increase in productivity in 2021 could reflect the partial recovery of the global economy and the rebound in oil prices. However, it suggests that Nigeria's productivity growth has not yet returned to pre-pandemic levels.

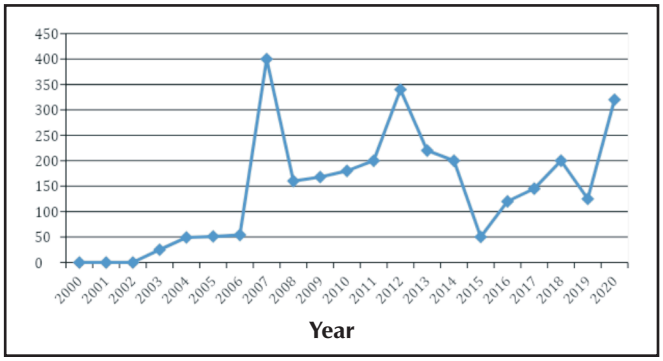

Figure2 : *Trend of China FDI to Nigeria (2000-2020) (current prices in Million US Dollars)* • ***Source :*** *Author, 2023 from Johns Hopkins China-Africa Research Initiative: Foreign Aid - China Ministry of Finance (http://yss.mof.gov.cn/caizhengshuju/index.htm)*

Figure 2 represents the Foreign Direct Investment (FDI) from China to Nigeria from 2003 to 2020 in million US dollars. This reflects the economic relationship between these two countries and provides a platform to examine the factors influencing this relationship. The FDI from China to Nigeria shows a rising trend from 2003 to 2007, with an exponential jump in 2007. This trend may be attributed to China's increasing involvement in Africa, driven by its growing demand for resources, markets, and influence (Bräutigam, 2009). In Nigeria, Chinese investments have focused on sectors such as oil, construction, and manufacturing (Mlachila and Takebe, 2011).

The sharp increase in 2007 might be related to specific large-scale investment projects or agreements made in that year. However, in 2008, there was a significant drop in the FDI, which might be linked to the global financial crisis that affected the flow of international capital (Alfaro et al., 2010). Yet, the FDI shows a steady increase from 2009 to 2012, suggesting a recovery and continued Chinese interest in Nigeria. This might be due to the

resilience of the Nigerian economy and the opportunities it offers for Chinese companies (Ovadia, 2013). The fluctuation in the FDI from 2013 to 2019 might reflect variations in economic conditions, investment climates, and political relationships. For example, the decline in 2015 could be associated with the drop in oil prices, which led to a recession in Nigeria (World Bank, 2017). The increase in 2016 and 2017 might reflect the recovery of the Nigerian economy and renewed Chinese investment interest (UNCTAD, 2018). Interestingly, despite the COVID-19 pandemic, the FDI increased significantly in 2020, suggesting that Chinese investors remain confident in the Nigerian market. This might be due to the various infrastructure projects in Nigeria under the Belt and Road Initiative or a shift in Chinese investment towards sectors less affected by the pandemic, such as digital technology and healthcare (UNCTAD, 2021).

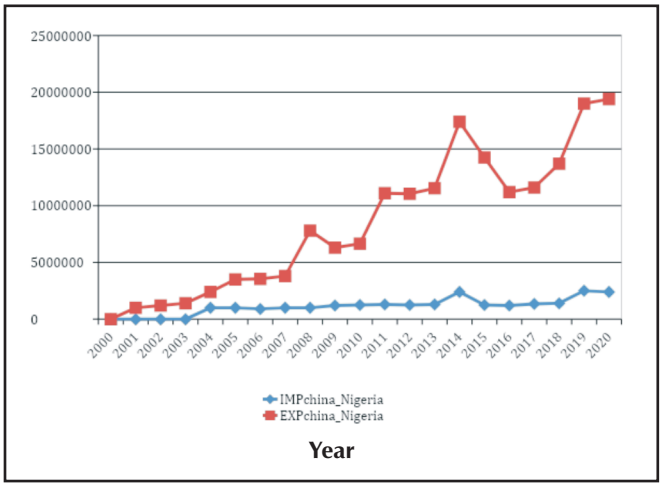

Figure3 : *Trend of China imports and exports from and to Nigeria (2000-2020)* • ***Source :*** *Author, 2023 calculations using data from United Nations Conference on Trade and Development (UNCTAD)*

Figure 3 presents data on China's exports to Nigeria (EXPchina_nigeria) and China's imports from Nigeria (IMPchina_nigeria) from 2000 to 2020. The analysis of this data can offer insights into the trade relationship between the two countries and the macroeconomic factors influencing it. The sudden jump in imports in 1999 could be related to Nigeria's return to democracy, which may have encouraged more trade. From 2000 to 2008, both exports and imports experienced significant growth. This period coincides with China's rapid economic growth and its increasing involvement in Africa. The peak in China's exports in 2008 could be linked to increasing Chinese engagements in Africa despite the global financial crisis. The dip in both exports and imports in 2009 likely reflects the impact of the global financial crisis. However, the trade recovered quickly, with exports and imports increasing from 2010 to 2014. This could be due to China's robust economic recovery from the crisis and Nigeria's resilient economy (Adeleye et al., 2016).

There was a decline in Chinese exports in 2015 and 2016 and a recovery of exports in 2017. From 2018 to 2021, both exports and imports increased significantly, despite the impact of the COVID-19 pandemic in 2020. This might suggest that the pandemic did not severely disrupt the trade between the two countries. The continued increase in exports and imports might reflect the ongoing economic relationship between Nigeria and China, with China's demand for oil and Nigeria's need for manufactured goods driving the trade (Mlachila and Takebe, 2011). Figure 6 presents information on Nigeria's exports to China (EXPnigeria_china) and imports from China (IMPnigeria_china) between the years 2000 to 2020. The data can shed light on the trading relationship between Nigeria and China, as well as the influence of global and local economic events.

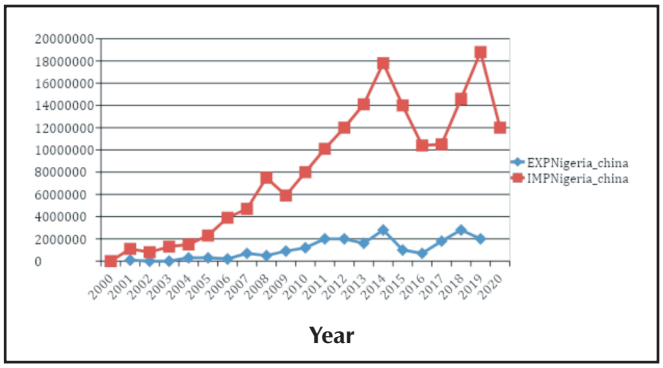

Figure 4 : *Trend of Nigeria imports and exports from and to China (2000-2020) (current prices in Million US Dollars)*

From the outset, it is important to note that the data for 2000 is not available. Starting from 2001, a pattern of increased trade activities between the two countries can be observed. During the 2001-2003 period, Nigerian exports to China significantly dropped while imports from China increased sharply. This shift could be attributed to the Chinese govt's policy of "Going Global," which aimed to encourage Chinese firms to invest overseas (Zhang et al., 2018). This also coincides with a surge in China's demand for energy resources, which led to increased imports of oil from countries like Nigeria (Zafar, 2007).

From 2004 to 2008, exports of Nigeria to China increased significantly. This might be related to Nigeria's oil boom during this period due to high oil prices in the global market (Akpan, 2009). Interestingly, despite the 2008 global economic crisis, Nigerian exports to China kept growing, reaching a peak in 2014. This could suggest that the demand for oil in China was less affected by the crisis than in other countries (Zafar, 2007).

The decline in exports in 2015 and 2016 could be linked to the global drop in oil prices, which greatly affected

Table 2 : *OLS estimates of effect of direct investment of the Chinese in Nigeria on productivity*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Dependent: GDP				
FDI_C	0.142323	0.067966	2.094037	0.0537
EXP_C	0.564842	0.063757	8.859277	0.0000
IMP_C	-0.053250	0.071071	-0.749255	0.4653
C	3.023531	0.843822	3.583138	0.0027
R-squared	0.923828			
Adjusted R-squared	0.908594			
F-statistic	60.64116			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	0.951130			

Source : *Author, 2023*

Nigeria's oil-dependent economy (Iwayemi, 2016). Meanwhile, imports from China continued to rise, reflecting China's continued economic expansion and Nigeria's increasing reliance on Chinese goods and services.

From 2017 to 2021, despite the impact of the COVID-19 pandemic, both exports and imports between Nigeria and China have continued to grow. This may indicate the resilience of the trade relationship between the two countries, likely due to China's fast recovery from the pandemic and its continued demand for energy resources (Onuegbu, 2020).

4.2 Empirical Analysis

The result of the ordinary least squares (OLS) estimates of the multiple regression model to analyse the effect of direct investment of the Chinese in Nigeria on productivity as measured by gross domestic product (GDP).

Table 2 presents the OLS estimates for the impact of Chinese direct investment in Nigeria on productivity. The dependent variable in this analysis is productivity, measured here as GDP. The independent variables are China's foreign direct investment (FDI) to Nigeria, China's exports to Nigeria, and China's imports from Nigeria.

The coefficient of China's FDI to Nigeria (FDI_C) of 0.142323 suggests that a one unit increase in China's FDI to Nigeria is associated with a 0.142323 unit increase in productivity, holding other variables constant. Although the coefficient is positive, the p-value of 0.0537 indicates that this relationship is not statistically significant at conventional levels (e.g., 5% significance level). This result suggests that Chinese FDI alone might not have a strong and significant impact on productivity in Nigeria. The coefficient of China's Export to Nigeria (EXP_C) of 0.564842 indicates that a unit increase in China's exports to Nigeria is associated with a 0.564842 unit increase in productivity, ceteris paribus. This positive coefficient is statistically significant with a p-value of 0.0000, indicating a strong relationship between Chinese exports to Nigeria and productivity. This finding aligns with previous research that suggests trade openness and exports can have positive effects on a country's productivity (Bernard and Jensen, 1999). The coefficient of China's import to Nigeria (IMP_C) of -0.053250 suggests a negative relationship between China's imports from Nigeria and productivity in Nigeria. However, with a p-value of 0.4653, this coefficient is not statistically significant. The lack of significance indicates that the observed relationship may be due to random chance. It is worth noting that this coefficient's magnitude is relatively small, further suggesting a limited impact of Chinese imports on productivity. The constant term (C) is 3.023531, which represents the expected value of productivity when all other variables are zero.

In conclusion, the results suggest that while Chinese exports to Nigeria have a positive and significant impact on productivity, Chinese FDI and imports do not show significant effects on productivity. These findings are in line with the notion that trade and exports can be drivers of productivity growth (Bernard and Jensen, 1999), but further investigation is needed to understand the complex relationship between FDI, imports, and productivity in the context of Nigeria.

4.3 Discussion of Findings

The study analyzed the impact of Chinese foreign direct investments on Nigeria's free trade zones. The coefficient of China's imports from Nigeria does not show a significant relationship with productivity, and the lack of significance suggests that the observed relationship may be due to chance. In conclusion, the findings indicate that Chinese exports to Nigeria have a positive and significant impact on productivity, while Chinese FDI and imports do not

show significant effects. These results are consistent with the idea that trade and exports can drive productivity growth. However, further investigation is necessary to understand the complex relationship between FDI, imports, and productivity in the Nigerian context.

The study highlights the importance of Chinese exports and economic growth in Nigeria. The core factor that benefited Nigeria in her engagement with China is the flow of export of Chinese products to the country. This can be attributed to the fact that Chinese exports offer a wide range of products at competitive prices and because their exports include advanced technological products and equipment.

The study also assessed the impact of Chinese investments on productivity in Nigeria, the study finds that Chinese exports and economic growth have significant positive effects on productivity. However, based on available data, Chinese FDI and imports do not show significant relationships with productivity. The study is anchored on two assumptions: Chinese FDIs in Nigeria's FTZs have not translated into tangible development, and Chinese FDIs have reinforced the new international division of labour.

5. Conclusion and Recommendations

In conclusion, the influx of Chinese foreign direct investments in Nigeria's free trade zones from 2000 to 2020 has undoubtedly played a role in improving certain aspects of the country's social and economic conditions. These investments have contributed to infrastructure development, job creation, and technology transfer. However, it would be premature to claim that these investments alone can usher in the comprehensive and transformative development envisioned by successive Nigerian administrations since the return of democratic governance. Realizing the full potential of these investments requires a holistic approach that addresses the root causes of Nigeria's development challenges. This includes strengthening institutions, promoting good governance, enhancing transparency, and diversifying the economy away from over-reliance on oil. Moreover, it is essential to ensure that foreign investments, including those from China, align with Nigeria's long-term development goals and priorities.

Within the context of the findings, the study recommends that there is a need to strengthen regulatory frameworks. That is, enhance and enforce regulations to ensure transparency, accountability, and compliance with environmental and labour standards within Nigerian Free Trade Zones (FTZs). This will help protect local businesses, ensure fair competition, and prevent exploitation of labour and resources. Encourage Chinese investors to transfer technology, skills, and knowledge to Nigerian industries through partnerships, joint ventures, and training programs. This will enhance the capacity of local industries, promote innovation, and foster sustainable development.

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