

THE IMPACT OF FOREIGN DIRECT INVESTMENT ON FINANCIAL DEEPENING IN NIGERIA

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ABSTRACT

The quest for economic growth and development has been the primary focus of economies worldwide, leading to the formulation of various policies and strategies. Foreign Direct Investment (FDI) is one such strategy, serving as a means to earn foreign reserves and finance capital formation, technology transfer, and trade. Nigeria has consistently been a top beneficiary of significant FDI in sub-Saharan Africa, with FDI inflows fluctuating over time. Despite the benefits of FDI, its impact on financial deepening and economic growth varies across countries and depends on factors such as absorptive capacity and the type of FDI. This study aims to examine the impact of FDI on financial deepening in Nigeria from 1980 to 2022. The research questions address the trend of FDI and financial deepening in Nigeria and the relationship between the two variables. The study will use theoretical frameworks, including the MacDougall-Kemp hypothesis and Dunning's eclectic paradigm, to explore the role of FDI in promoting financial deepening. The findings of this research could have significant implications for policymakers, the Nigerian government, investors, and businesses. Understanding the impact of FDI on financial deepening will help inform appropriate policy measures and strategies to enhance Nigeria's financial sector and spur economic growth. Additionally, the study contributes to the existing literature on FDI and financial deepening, providing valuable insights for future research in this area.

Keywords: Foreign Direct Investment, Financial Deepening, Nigeria

1.0 INTRODUCTION

In the pursuit of economic progress and advancement, a goal shared by nations globally, various strategies and policies have been formulated to realize this aspiration. Among these approaches is the concept of foreign direct investment (FDI). Foreign Direct Investment plays a crucial role in accumulating foreign reserves through investments, commercial ventures, and monetary assistance from more advanced nations. FDI stands as a vital source of financial support and the creation of capital, as well as the transfer of technology and expertise. Additionally, it serves as a viable conduit for international trade between countries, as highlighted by Oyegoke and Aras (2021). Given the scarcity of funds and the inadequacy of domestic resources to bridge the gap between savings and investment requirements, the necessity to attract a substantial amount of capital from external sources becomes evident. FDI presents a range of advantages, including heightened stability, increased financial resources, positive impacts on productivity, and the opportunity to tap into foreign financial markets to inject funds into the domestic economy, (Ganiyu, Abidemi, & Enitan, 2018).

According to data from the United Nations Conference on Trade and Development (UNCTAD), Nigeria consistently ranks among the top recipients of significant foreign direct investment in sub-Saharan Africa. Over the years, FDI inflows in Nigeria have experienced fluctuations but generally demonstrated an upward trajectory since the nation's independence in 1960. For example, FDI experienced fluctuations from 1984 to 2021. During this period, FDI inflows remained below the \$1 billion mark, except in 1989 when it reached \$1.88 billion. Post-1993, FDI showed a consistent upward trend, peaking at \$8.84 billion in 2011. Subsequently, there was a steep decline to \$0.755 billion in 2018. Despite this decline, recent years have witnessed an improvement, with FDI rising to approximately \$3.31 billion in 2021.

Developing nations like Nigeria heavily rely on foreign capital as the primary avenue to attain swift economic advancement. Nonetheless, the elevated productivity of capital units in these developing countries, which are often rich in labor resources, contributes to their attraction of increased foreign capital. This propensity stems from their adept utilization of capital in conjunction with their abundant labor force. Moreover, as highlighted by Kang & Martinez-Vazquez (2021), the extent of advantages derived from foreign direct investment is notably contingent on the host country's absorptive capacity. This underscores that a nation with a robust absorptive capacity reaps more benefits from FDI inflows compared to a country with limited absorptive capabilities.

The problem under examination pertains to the efforts made by numerous African nations, including Nigeria, to improve their business climates in order to attract Foreign Direct Investment (FDI), acknowledging the critical role FDI plays in the financial development and economic growth of developing countries. Consequently, developing economies, such as Nigeria, have formulated various economic policies aimed at drawing FDI as a significant capital source. For example, the Nigeria Investment Promotion Commission (NIPC) Act of 1995 facilitates investment coordination and promotion within Nigeria, while the Presidential Enabling Business Environment Council (PEBEC) established in 2016 targets the reduction of operational obstacles in Nigeria's business landscape. The Africa Continental Free Trade Agreement (AfCFTA) launched in 2019 further seeks to stimulate foreign investment by fostering a unified market for goods and services across Africa.

Despite substantial FDI inflows into Nigeria, the nation's financial sector remains underdeveloped, characterized by constrained access to financial services and inadequate financial inclusion, consequently impeding overall economic progress. Data from the Central Bank of Nigeria (CBN) demonstrates oscillating patterns in financial deepening, highlighting fluctuations in its trajectory. Although there have been periods of growth, these are often countered by declines, reflecting an inconsistent trend. The persistent challenge of macroeconomic instability has hindered the evolution of Nigeria's financial sector. Frequent policy reversals have caused disinvestment in both the financial and real sectors, subsequently negatively impacting macroeconomic performance. Despite the influx of FDI, the necessary level of financial deepening conducive to optimal fund allocation across various sectors has not been realized, leading to challenges such as insufficient investment finance and continued reliance on borrowing to bridge financing gaps. As the Nigerian government continues to implement policies to attract FDI, expectations for enhanced financial sector development have not been met. The sluggish progression of the financial sector has consequently hampered overall economic performance. Consequently, there is a growing interest in investigating the

correlation between FDI and financial deepening in Nigeria, assessing the extent to which FDI has contributed to the growth of the country's financial sector.

Although existing literature on the subject exists, it presents a diverse array of viewpoints. Some studies examine the interplay between FDI and financial deepening, while others analyze the impacts of FDI on economic growth or financial deepening on economic growth. Some even explore the connection between financial deepening and FDI. However, this study distinguishes itself by its focus on the relationship between foreign direct investment and financial deepening in Nigeria, spanning the period from 1980 to 2022, thereby offering a unique perspective on this multifaceted relationship. Hence this study examined the trend of foreign direct investment and financial deepening in Nigeria and also investigate the relationship that exists between foreign direct investment and financial deepening in Nigeria.

2.0 LITERATURE

2.1 Conceptual Review

2.1.1 Foreign Direct Investment

Foreign Direct Investment (FDI) pertains to an enduring investment arrangement where a resident entity from one economy, known as the foreign direct investor or parent enterprise, establishes a robust connection and exercises ongoing interest and authority in an enterprise located in a different economy. This enterprise, referred to as the FDI enterprise or affiliate enterprise, is significantly influenced by the investor's management decisions. This investment relationship encompasses the initial investment transaction as well as all subsequent interactions, encompassing interactions between foreign affiliates, both incorporated and unincorporated. FDI can be conducted by both individuals and businesses. The core concept of FDI involves a resident entity, the "direct investor," maintaining a lasting interest in an entity situated in a separate economy, termed the "direct investment enterprise." This lasting interest signifies a prolonged association, granting the direct investor substantial sway over the enterprise's management (IMF, 1993 & OECD, 1996).

Foreign Direct Investment encompasses a range of activities, including activities such as "mergers and acquisitions, establishing new facilities, reinvesting profits generated from overseas operations, and providing internal corporate loans." Foreign investment occurs through the creation of new production facilities or through the merger or acquisition of an existing local entity. FDI can be categorized into various types based on its inherent nature and intended purpose.

1. Horizontal Foreign Direct Investment (FDI): This type entails establishing an overseas affiliate in the primary industry of a company to serve foreign market customers. It occurs when the cost of setting up the affiliate is lower than manufacturing domestically and transporting goods to the target market. The term "horizontal" is utilized because the multinational firm replicates similar operations across different nations. Horizontal FDI arises due to the impracticality of exporting to the foreign market due to shipping expenses or trade barriers.

2. Vertical Foreign Direct Investment (FDI): This category involves creating a foreign affiliate that produces inputs or provides intermediary services connected to a final product. It emerges in response to differences in production costs or the availability of specific factors and resources, like raw materials, in various countries. Vertical FDI describes multinational enterprises (MNEs) that divide the production process geographically. The term "vertical" is used because MNEs break down the production chain by outsourcing specific production stages abroad. This FDI type is based on the idea that a production process consists of multiple stages with varying input requirements. When input prices vary among countries, it becomes beneficial for the firm to fragment the production chain.

3. Complex Foreign Direct Investment (FDI): This classification mirrors the increasing complexity of global production and distribution networks, where firms' strategic placement can be influenced by both horizontal and vertical considerations. In such cases, FDI decisions are shaped by a combination of factors related to both horizontal and vertical integration. Components of Foreign Direct Investment: The foreign direct investor can gain influence over an economy through three key components: equity capital, reinvested earnings, and intra-company loans. Equity capital involves the direct investor purchasing shares of an enterprise in a foreign country.

2.2 Financial Deepening

Financial deepening involves the gradual improvement of the financial system over time, encompassing enhancements in the size and structure of assets and liabilities across different types of financial institutions. These enhancements include aspects such as distribution among various institutional sectors, financial inclusion and concentration, as well as the maturity, yield, and security of financial instruments. Essentially, financial deepening addresses the "costs" associated with the financial system, with the goal of reducing expenses linked to obtaining information, enforcing contracts, and conducting transactions. This endeavor leads to the emergence of financial contracts, markets, and intermediaries that facilitate economic activities. Different combinations of information, enforcement mechanisms, transaction costs, and legal frameworks have historically shaped distinct financial systems in different countries.

Financial institutions play the role of financial intermediaries in an economy by encouraging savings and channeling these saved funds toward entrepreneurial investments, thereby fueling economic growth. The Central Bank of Nigeria (1993) defines the financial system as a collection of rules, regulations, institutions, and agents that interact within a nation's economy and with the global context to promote economic development. Financial sector development occurs when financial instruments, markets, and intermediaries mitigate the impact of information, enforcement, and transaction costs, thereby fulfilling crucial functions within an economy's financial sector.

3.0 THEORETICAL REVIEW

3.1 MacDougall-Kemp hypothesis

One of the initial theories concerning the surge of foreign capital was developed by MacDougall (1958) and subsequently elaborated on by Kemp (1964). According to this proposition, considering a model encompassing two nations – one functioning as the investor

and the other as the recipient – and presuming that the cost of capital aligns with its marginal productivity, capital naturally moves from a country with an excess of capital to one facing a shortage. This mechanism seeks to equalize the marginal productivity of capital between these two countries, ultimately leading to an improvement in the efficiency of resource utilization and a consequent elevation in overall well-being. Despite a decline in output within the investing country due to the outflow of foreign investment, the national income doesn't decrease to the same extent, as the nation receives returns on the capital invested abroad. This return is directly proportional to the marginal productivity of capital multiplied by the quantity of foreign investment. As long as the income generated from foreign investment surpasses the loss in output, the investing nation continues to allocate resources overseas because its national income exceeds the levels preceding foreign investment. On the contrary, the recipient nation experiences an increase in national income as a result of the amplified scale of investment, a phenomenon unattainable in the absence of incoming foreign investment.

3.2 The Internalization Theory

The internationalized theory of foreign direct investment in an imperfect market is that FDI arises from the efforts by companies to replace market transactions with internal transactions. According to this theory, certain costs can be saved by the internalization of some processes. Sometimes this theory is claimed to represent a general theory of FDI and other theories are a subset of the general theory of internalization hypothesis. Denisia (2010) postulates that internalization theory also “explains the growth of multinational cooperation (MNCs) and gives insights into the reasons for FDI”. Due to market imperfections, this theory is superior in explaining firm-specific advantages and demonstrates that companies are conditionally involved in FDI. According to this theory, companies will undertake FDI only if the benefits of exploiting firm-specific advantages are higher than the relative costs of the operations abroad. Denisia (2010) identified two major determinants that are crucial when explaining this theory. These determinants are a (a) removal of competition; and (b) advantages that some companies possess in a particular activity. Through these determinants, internalization theory demonstrates that MNCs “are organizing their internal activities to develop specific advantages, which then to be exploited”. However, in terms of human capital, the importance of this theory is the emphasis on R&D that companies must involve to survive in new markets hence development and spillover effects on human capital.

3.3 Empirical Literature

Adam (2022) investigated the complex interplay of foreign direct investment (FDI), financial development, and sustainable economic growth in Sudan. Utilizing a time series of secondary data spanning from 1990 to 2020, the study employed co-integration, Granger causality, and VAR error correction techniques to model the intricate relationship between FDI and its impact on the financial sector, thereby contributing to Sudan's sustainable economic development. The findings illuminated a discernible causality connecting the nation's trade openness and the advancement of its financial sector. Furthermore, the study unveiled a harmonious connection between short-term sustainable economic growth, financial development, and trade openness. Interestingly, the results demonstrated that the influence of financial development on economic growth is amplified by the influx of FDI.

Alsmadi and Oudat (2019) delved into the intricate relationship between foreign direct investments and financial development in Bahrain. Spanning the years 1978 to 2015, the research delved into the causal nexus between foreign direct investments and financial development. Employing co-integration and the Autoregressive Distributed Lags Approach (ARDL), the investigation explored both the immediate and sustained equilibrium relationships between the variables. The Granger causality test was employed to capture causal interactions. The findings indicated a significantly positive correlation between FDI and financial development in both the short and long term. However, an intriguingly negative relationship surfaced between the Arab Spring and financial development. The outcomes of the study also revealed a bidirectional causal connection between FDI and financial development.

Henri, Luc, and Larissa (2019) made a substantial contribution by scrutinizing the enduring and immediate ramifications of foreign direct investment on financial development in African countries. Employing a panel study encompassing 49 African nations over the years 1990 to 2016, the investigation stratified the panels by income level. The results unveiled the following insights: firstly, a robust positive and long-lasting correlation exists between foreign direct investment and financial development in Africa. However, in the short term, the impact of foreign direct investment on financial development was adverse. Secondly, the positive impact of foreign direct investment remained significant over the long term across all three sub-samples. However, in the short term, lower-income countries exhibited a negatively significant effect, while lower-middle-income and upper-middle-income countries displayed no significant effect. Essentially, compelling evidence emerged supporting the notion that foreign direct investment enhances financial development in African nations in the long term.

Keykanloo, Hosseini, Jazeh, and Askari (2019) conducted an investigation into the intricate relationship between financial development indexes and foreign direct investment (FDI) across 11 countries (Saudi Arabia, Argentina, Sweden, Poland, Belgium, Iran, Thailand, Nigeria, Austria, Norway, and Venezuela) over the period 1990 to 2014. Their findings revealed that an increase in the financial institutional index, financial market index, GDP, and domestic credit to private sector leads to a rise in FDI. Conversely, an increase in foreign aid index, financial market access index, and foreign market efficiency index results in a decrease in FDI. The study suggested that fostering the expansion of the capital market could enhance FDI attraction in the selected nations. Remarkably, for countries with underdeveloped capital markets, the financial market access index and financial institution efficiency index exhibited a significant negative impact on FDI absorption and vice versa.

Nkoro and Uko (2023) conducted a study that explored the intricate dynamics between foreign direct investment (FDI) inflows, the development of the domestic financial sector, and the attainment of inclusive growth in Nigeria. Their research utilized annual time series data spanning from 1981 to 2020. The findings highlighted that FDI yields a notably positive impact on inclusive growth, particularly when the domestic financial sector attains a certain level of development. Intriguingly, the study also revealed that FDI on its own has a noticeable negative effect on inclusive growth. This emphasizes the crucial role of developing the domestic financial sector as a prerequisite for FDI to effectively contribute to inclusive growth in Nigeria.

Farouq and Sulong (2021) delved into the intricate dynamics involving foreign direct investment uncertainty, financial development, financial inclusion, and economic growth in Nigeria. Their analysis incorporated annual time series data from 1970 to 2018. The methodology encompassed various tests such as Gregory and Hansen's co-integration test, Non-linear ARDL for elasticity estimation, and Diks and Panchenko's causality test. The outcomes illuminated a non-linear uni-directional causal relationship that stretches from economic growth, foreign direct investment uncertainty, and financial inclusion to financial development. Particularly noteworthy was the asymmetric estimation indicating that the values of coefficients related to both positive and negative dimensions of financial globalization uncertainty had distinct influences on financial development.

Giwa, George, Okodua, and Adediran (2020) delved into the ramifications of foreign direct investment (FDI) on the real sector growth of Nigeria. Employing the robust GMM estimation technique, their model unveiled the positive and significant influence of labor quality on real GDP (RGDP), aligning with economic theory. Additionally, the study emphasized that capital intensity exerted a notably negative impact on RGDP in Nigeria. Their recommendation highlighted the need to integrate strategies that enhance capital intensity into Nigeria's policy framework to stimulate economic growth through the spillover effects of FDI.

Babarinde (2020) embarked on an investigation that examined the growth implications of foreign direct investment and financial deepening in Nigeria over the period 1981-2021. Utilizing pairwise Granger causality tests and the autoregressive distributive lag (ARDL) model, the findings underscored the significantly positive impact of FDI on Nigeria's economic growth in both the short and long run. Moreover, the study indicated that financial deepening, as measured by specific ratios, displays both positive and negative influences on GDP, varying in the short and long run. The study identified unidirectional causal relationships connecting FDI to GDP and vice versa.

Kpoghul, Okpe, and Anjande (2020) conducted an inquiry into the complex interactions of trade openness, FDI, and the performance of Nigeria's economy. Their investigation employed a macro econometric model framework and utilized data from 1970 to 2018. The findings illuminated that trade openness acts as a catalyst for FDI and shapes macroeconomic performance in Nigeria. Their simulation outcomes highlighted the potential positive effects of increased trade openness, FDI, government expenditure, and broad money supply on various economic indicators.

4.0 METHOD

Model specification entails translating a theoretical relationship into a precise mathematical and econometric structure that captures its essence. Economic theory doesn't dictate the exact functional form of a relationship, thus it doesn't prescribe whether the relationship should take on a linear, quadratic, or cubic nature (Goldberger, 1964). In the context of this study's analysis, the model utilized to examine the influence of foreign direct investment on financial deepening was adapted from Ihekuna's (2017) study titled "the impact of foreign direct investment on financial deepening in Nigeria." The model assumes a fundamental link between specific macroeconomic variables that impact the depth of the financial sector. The model takes on the following formulation:

$$\text{CPSGPD} = f(\text{FDI}, \text{TOP}, \text{RIR}) \quad 1$$

$$\text{CPSGPD} = b_0 + b_1\text{FDI} + b_2\text{TOP} + b_3\text{RIR} + \mu t \quad 2$$

Where CPSGPD symbolizes credit to the private sector as a ratio of GDP, TOP represents trade openness, RIR corresponds to the real interest rate, and μt signifies the stochastic error term.

By adapting equation (2) to use FD as the dependent variable, and incorporating gross fixed capital formation (GCF) and gross domestic product (GDP) as control variables, the mathematical model transforms into:

$$\text{FD} = b_0 + b_1\text{FDI} + b_2\text{TOP} + b_3\text{RIR} + b_4\text{GCF} + b_5\text{GDP} \quad 3$$

The econometric representation of the model can be stated as follows:

$$\text{FD} = b_0 + b_1\text{FDI} + b_2\text{TOP} + b_3\text{RIR} + b_4\text{GCF} + b_5\text{GDP} + \mu t \quad 4$$

In this context, FD signifies financial deepening, FDI stands for foreign direct investment, TOP represents trade openness, RIR indicates the real interest rate, GCF denotes gross fixed capital formation, GDP corresponds to gross domestic product, and μt stands for the stochastic error term. The coefficients b_1 , b_2 , b_3 , b_4 , and b_5 capture the impact of FDI, TOP, RIR, GCF, and GDP respectively. Meanwhile, b_0 represents the constant intercept for FD.

Sources, Methods of Data Collection and Measurement of variables

The aim of this research is to examine how foreign direct investment influences financial deepening in Nigeria. To achieve this, the study relies on secondary data spanning from 1981 to 2022, primarily obtained from sources such as the Central Bank of Nigeria and the World Bank database. To quantify the variables utilized in this study, the measurement of financial deepening (FD) involves calculating the ratio of credit extended to the private sector in relation to GDP, which serves as the dependent variable. On the contrary, the explanatory variables are evaluated as follows: foreign direct investment is assessed by determining the net FDI flows as a proportion of GDP (FDI/GDP), trade openness (TOP) is computed by summing the growth rates of exports and imports and dividing by the growth rate of real GDP, the real interest rate (RIR) is expressed as a percentage, gross fixed capital formation (GCF) is denoted as the ratio of gross fixed capital formation to GDP, and gross domestic product (GDP) is gauged by the growth rate of real gross domestic product (GDP).

4.1 Model Estimation Technique

The preliminary investigation is initiated to uncover the inherent attributes or patterns displayed by the variables under scrutiny. This preliminary evaluation encompasses various aspects: Trend analysis, with the intention of identifying and capturing the temporal trends within the time series variables, facilitating the assessment of their temporal evolution. Correlation analysis, which quantifies the degree of linkage among the variables employed in the study. The correlation intensity may manifest as either positive or negative. Furthermore, there exist other preliminary assessments to be conducted prior to estimation. This research employed the ARDL-ECM bounds-test cointegration methodology to investigate the short-

term and long-term relationships among the variables under examination. The Autoregressive Distributed Lag (ARDL) bounds testing approach, originally proposed by Pesaran et al. (2001),

5.0 RESULT

5.1 Trend Analysis

The primary aim of this research is to analyze the pattern of foreign direct investment and the level of financial development in Nigeria. Therefore, this portion of the study delves into the trajectory of foreign direct investment and the degree of financial development (measured by private sector credit as a percentage of GDP) from the year 1981 to 2022.

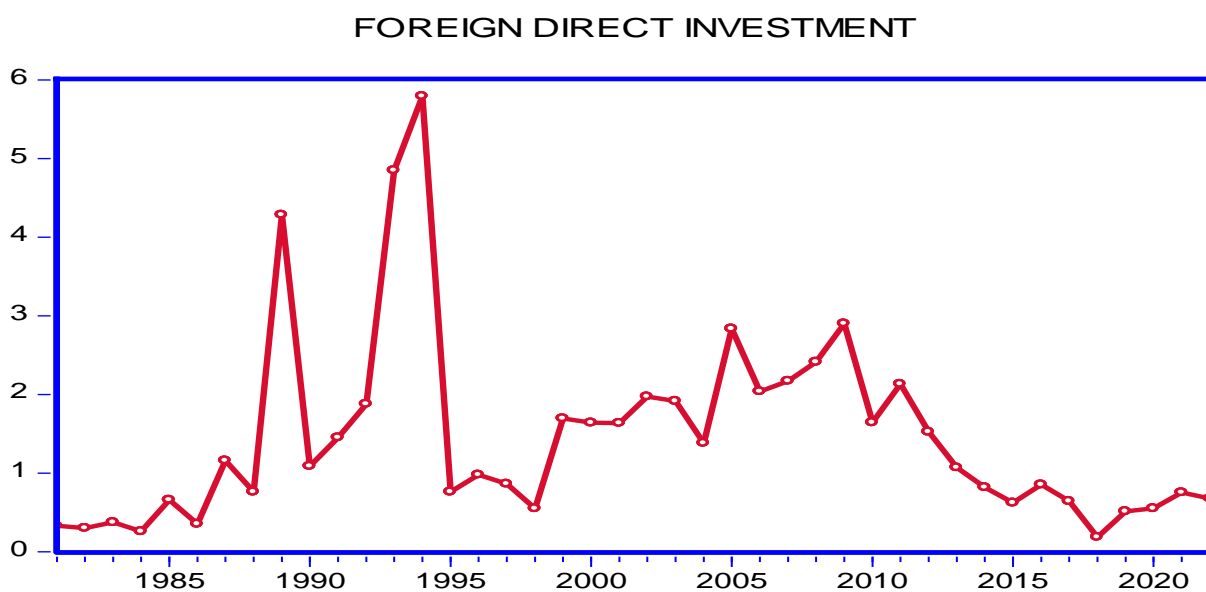


Figure 1: Trend of Foreign Direct Investment in Nigeria

Source: Author's Computation, 2023.

The graph displayed in Figure 1 illustrates the trend analysis of foreign direct investment (FDI) in Nigeria, visually representing the period under examination (1981 - 2022). The visual representation indicates a volatile pattern in foreign direct investment. This signifies that FDI has exhibited fluctuations, alternating between upward surges and downward declines throughout the specified time frame. For instance, FDI started at 0.3% in 1981 and escalated to 4.3% in 1989. However, in 1990, there was a steep drop to 1.1%. Subsequently, it reached its pinnacle at around 5.8% in 1994 before plummeting to approximately 0.5% in 1998. The FDI then saw growth from 1999 to 2009, rising from 1.7% to 2.9%, but subsequently experienced a sharp descent to as low as 0.2% in 2018. Nevertheless, recent years have witnessed a gradual uptick in FDI, moving from 0.2% in 2018 to 0.7% in 2022. Notably, between 2015 and 2022, Nigeria's FDI declined to less than one percent. This decline can be attributed to factors such as political instability, an unfavorable investment climate, and a series of economic recessions triggered primarily by the sharp decline in global oil prices starting in 2014.

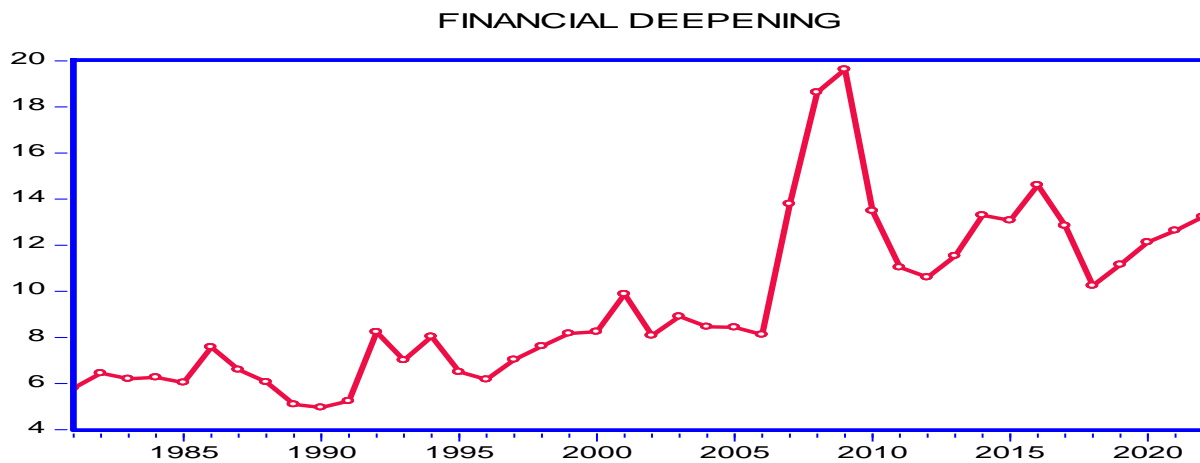


Figure 2: Trend of Financial Deepening in Nigeria

Source: Author’s Computation, 2023.

The graph displayed in Figure 2 portrays the trend of financial deepening, represented by the credit allocated to the private sector as a proportion of GDP, covering the timeframe from 1981 to 2022. From the visual representation above, it can be inferred that the financial deepening indicator—measured by the credit provided to the private sector as a fraction of GDP—demonstrates an upward trajectory with slight fluctuations during the studied duration. This suggests that the extent of financial deepening in Nigeria is on the rise, albeit at a diminishing pace. For instance, there was an escalation in financial deepening between 1981 and 1986, moving from 5.8% to 7.6%, followed by a decline to 5.0% in 1990. Between 1991 and 1994, financial deepening experienced growth, reaching 8.0%, and then decreased to 6.2% in 1996. Furthermore, financial deepening surged to 9.9% in 2001, only to decrease to 8.1% in 2006. Nevertheless, a notable peak was reached at 19.6% in 2009, followed by a decline to 10.6% in 2012. Despite the oscillations in recent years, there is a tendency for financial deepening in Nigeria to have an upward trajectory during the period from 2018 to 2022, culminating at 13.2% in 2022.

5.2 Correlation Analysis

Table 1: Summary of Correlation Statistics

Variable	LNCP	LNFDI	LNGCF	LNGDP	INT	TOP
LNCP	1.000000					
LNFDI	0.789389	1.000000				
LNGCF	0.471375	0.401645	1.000000			
LNGDP	0.995082	0.778209	0.431740	1.000000		
INT	0.461272	0.303631	0.022163	0.446194	1.000000	
TOP	0.481581	0.467937	-0.169363	0.531311	0.231882	1.000000

intercept approach. This observation is supported by their critical values falling below the 5% MacKinnon critical threshold. However, upon taking the first difference of these variables, they attain stationarity at the level of first difference, denoted as I(1), as indicated by both ADF and PP tests, with p-values falling below the 5% significance level. Interestingly, INT was found to be stationary at level I(0). Consequently, the Autoregressive Distributed Lag (ARDL) model can be effectively employed to explore the influence of foreign direct investment on financial deepening in Nigeria.

5.4 Cointegration Test

Table 3: F-Bounds Cointegration Test

ARDL Bounds Test		
Null Hypothesis: No long-run relationships exist		
Critical Value Bounds		
Significance	10 Bound	11 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68
Test Statistic	Value	k
F-statistic	3.907959	5

Source: Author’s Computation using Eviews, 2023.

The findings from the analysis presented in Table 3 reveal that the computed F-statistic (3.907959) surpasses the upper bound critical values of 3.35 and 3.79 at significance levels of 10% and 5%, respectively. Furthermore, the F-statistic also surpasses the lower critical bounds at 10%, 5%, 2.5%, and 1%. This outcome signifies that there is substantive evidence supporting the existence of a long-term relationship among the variables integrated into the model. With the co-integration relationship established, the subsequent step involves estimating the ARDL model to evaluate both the immediate and prolonged effects of foreign direct investment on financial deepening in Nigeria.

5.5 Data Analysis and Discussion of Results

Table 4: Summary of ARDL

Dependent Variable: LNCPS		
Method: ARDL		

Selected Model: ARDL(1, 0, 1, 0, 0, 0)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNCPS(-1)	0.613107	0.093549	6.553854	0.0000
LNFDI	0.070312	0.030656	2.293555	0.0285
LNGCF	-0.340181	0.129997	-2.616845	0.0134
LNGCF(-1)	0.336190	0.126385	2.660041	0.0121
LNGDP	0.433044	0.108858	3.978059	0.0004
INT	0.001510	0.002564	0.588827	0.5601
TOP	-0.001376	0.002906	-0.473444	0.6391
C	-2.503298	1.400837	-1.787001	0.0834
R-squared	0.998143	Mean dependent var		6.635387
Adjusted R-squared	0.997737	S.D. dependent var		2.753180
S.E. of regression	0.130976	Akaike info criterion		-1.050755
Sum squared resid	0.548947	Schwarz criterion		-0.712979
Log likelihood	29.01510	Hannan-Quinn criter.		-0.928626
F-statistic	2457.242	Durbin-Watson stat		1.693013
Prob(F-statistic)	0.000000			

Source: Author’s Computation using Eviews, 2023.

In accordance with a Durbin-Watson statistic of approximately 1.69, which is higher than the R-squared value of around 0.99, it can be inferred that the model is devoid of spurious regression and serial correlation issues. Moreover, considering the F-statistic's p-value (0.000000), the model is deemed to be jointly significant. Reflecting on the R-squared value of about 0.99, it indicates that the alterations in explanatory variables within the model elucidated approximately 99% of the fluctuations in the dependent variable. Hence, the outcomes for both the long-term and short-term estimations are presented below.

Table 5: The lasting impacts of foreign direct investment on the growth and development of financial systems over an extended period.

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFDI	0.181735	0.086705	2.096026	0.0441

LNGCF	-0.010316	0.132127	-0.078079	0.9383
LNGDP	1.119286	0.047210	23.708567	0.0000
INT	0.003903	0.006415	0.608344	0.5473
TOP	-0.003556	0.007196	-0.494190	0.6245
C	-6.470252	3.038625	-2.129336	0.0410

Source: Author's Computation using Eviews, 2023

Referring to the data presented in Table 5 above, it becomes apparent that foreign direct investment (FDI) expressed in logarithmic terms (LNFDI) exerts a statistically significant positive influence on the process of financial deepening (FD) within the Nigerian economic context over an extended temporal horizon. This is substantiated by a coefficient value of approximately 0.18 units alongside a p-value of 0.0441. Such findings indicate that a minute incremental increase of one unit in the quantum of foreign direct investment correlates with an expansion of approximately 0.18 units in the realm of financial deepening, and conversely. This discovery aligns harmoniously with the empirical investigation conducted by Aigbyeyisi (2017), who similarly established a constructive connection between foreign direct investment and the augmentation of financial deepening within the Nigerian framework.

Additionally, the tabulated data also elucidates that the logarithmic representation of gross domestic product (LNGDP) yields a favorable and substantial impact on the process of financial deepening (FD) within the Nigerian context over a protracted duration. Evidenced by a coefficient estimate of roughly 1.12 units accompanied by a p-value of 0.0000, this outcome signifies that a gradual elevation of one unit in the logarithmic depiction of gross domestic product is associated with a consequential expansion of approximately 1.12 units in the realm of financial deepening, and vice versa, over the extended time horizon. This discovery resonates with the underpinning economic theory which posits a positive correlation between the escalation of GDP and the progression of financial development within the Nigerian milieu.

Conversely, the statistical evidence contained within Table 5 underscores that the logarithmic representation of gross capital formation (LNGCF) manifests a negative, albeit statistically insubstantial, impact on the facet of financial deepening (FD) in Nigeria over a prolonged temporal scope. Characterized by a coefficient estimate of roughly -0.01 units in conjunction with a p-value of 0.9383, this outcome signifies that a marginal augmentation of one unit in the logarithmic portrayal of gross capital formation is accompanied by a marginal contraction of approximately 0.01 units in the domain of financial deepening, and vice versa, throughout the extended time span. This result diverges from the theoretically anticipated positive relationship, thereby deviating from the expected trajectory established by economic theory.

Moreover, the tabular data also portrays that the real interest rate (INT), when expressed in logarithmic terms, exercises a positive, although statistically unsubstantial, impact on the phenomenon of financial deepening (FD) within Nigeria over the expansive time horizon. Evidenced by a coefficient estimate of approximately 0.004 units and a p-value of 0.5473, this observation implies that a marginal escalation of one unit in the logarithmic depiction of the

real interest rate corresponds to a minor incremental increase of approximately 0.004 units in the arena of financial deepening, and vice versa. This observation contradicts the theoretically envisaged inverse correlation between interest rates and credit allocation to the private sector, thereby departing from the anticipated relationship postulated by economic theory.

Finally, the empirical evidence within Table 5 uncovers that trade openness (TOP) yields a negative, although statistically inconclusive, influence on the facet of financial deepening (FD) within Nigeria over an extended temporal horizon. Indicated by a coefficient value of approximately -0.004 units and a p-value of 0.6245, this finding suggests that a marginal increment of one unit in the measure of trade openness corresponds to a slight reduction of approximately 0.004 units in the dimension of financial deepening, and vice versa. Such a result contradicts the findings elucidated by Ihekuna (2017), which established a positive connection between trade openness and financial deepening within the Nigerian context.

Table 6: Brief overview of the immediate effects of foreign direct investment on the expansion of financial systems.

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNFDI)	0.070312	0.030656	2.293555	0.0285
D(LNGCF)	-0.340181	0.129997	-2.616845	0.0134
D(LNGDP)	0.433044	0.108858	3.978059	0.0004
D(INT)	0.001510	0.002564	0.588827	0.5601
D(TOP)	-0.001376	0.002906	-0.473444	0.6391
CointEq(-1)	-0.386893	0.093549	-4.135730	0.0002
Cointeq = LNCPS - (0.1817*LNFDI -0.0103*LNGCF + 1.1193*LNGDP +				
0.0039*INT -0.0036*TOP -6.4703)				

Source: Author's Computation using Eviews, 2023.

Examining the data in Table 6 above, it becomes evident that both foreign direct investment (FDI) expressed logarithmically as LNFDI, and gross domestic product (GDP) presented as logarithmic LNGDP, exert a favorable and substantial impact on the expansion of financial systems (FD) within Nigeria during a brief temporal window. This implies that, with coefficient values of roughly 0.07 units and 0.43 units, accompanied by respective p-values of 0.0285 and 0.0004, a marginal increase of one unit in either foreign direct investment or gross domestic product corresponds to a 7% or 43% augmentation in financial deepening within the immediate term. This discovery aligns harmoniously with the outcomes gleaned from Ihekuna's study (2017), which also underscored a constructive immediate effect of foreign direct investment on the augmentation of financial deepening within Nigeria. Similarly, the constructive influence emanating from gross domestic product concurs with the fundamental tenets of

economic theory, which posit a favorable correlation between economic expansion and the growth of the financial sector during the short run.

Conversely, the statistical evidence embedded within Table 6 unveils that gross capital formation (GCF) represented logarithmically as LNGCF, wields an adverse yet statistically significant impact on the evolution of financial systems (FD) within Nigeria over the limited temporal span. Marked by a coefficient estimate of approximately -0.34 units, in tandem with a p-value of 0.0134, this finding signifies that a minor incremental rise of one unit in the logarithmic portrayal of gross capital formation corresponds to a notable contraction of about 34% in the dimension of financial deepening, and vice versa, within the short run. This conclusion diverges from the insights drawn from the research conducted by Idyu, Ajekwe, and Korna (2013), which identified a positive connection between market capitalization and the growth of the industrial sector in Nigeria during the immediate term. Furthermore, as depicted in the confines of Table 4.8, akin to the outcomes witnessed in the long-term analysis, trade openness (TOP) also exhibits a detrimental, albeit statistically inconclusive, impact on the trajectory of financial deepening (FD) within Nigeria during the brief temporal horizon. Indicated by a coefficient estimate of approximately -0.001 units, alongside a p-value of 0.6391, this result suggests that a fractional augmentation of one unit in the measure of trade openness results in a reduction of less than 1% in the sphere of financial deepening, and vice versa, within the immediate term. This conclusion stands in contradiction to the discoveries derived from Ihekuna's study (2017) and deviates from the foundational postulates of economic theory, which postulates a positive interrelation between trade openness and credit allocation to the private sector, a barometer of financial deepening.

6.0 CONCLUSION AND RECOMMENDATIONS

This study concluded that foreign direct investment and gross domestic product exhibited constructive and substantial impacts on financial deepening in Nigeria. In contrast, gross capital formation exerted a negative and substantial influence on financial deepening within the short-term framework. Furthermore, trade openness demonstrated a detrimental but statistically inconclusive effect on financial deepening during the short term. The coefficient of the error correction mechanism emerged as negative and held statistical significance at the one percent level, confirming the sustained relationship among the variables over time. This also indicates a swift pace of adjustment, suggesting that roughly thirty-nine percent of the deviation resulting from shocks in the preceding year will realign with the long-term equilibrium within the current year. In culmination, the analysis underscores that foreign direct investment indeed exerts a noteworthy impact on financial deepening within Nigeria, spanning both the immediate and extended timeframes.

The study therefore recommended that capitalizing on the ascertained constructive and statistically significant influence of foreign direct investment on financial deepening, evident across both immediate and prolonged periods, the Nigerian government is advised to institute strategic policies that cultivate a propitious environment. These policies should serve to incentivize and streamline the process of foreign direct investment entry into the financial sector. Such actions would effectively cultivate an environment conducive to financial expansion within the national framework. Second, recognizing the adverse and substantial impact of Gross capital formation on financial deepening within the Nigerian context over the

short term, the government is urged to strategize and implement measures targeted at optimizing the efficiency and efficacy of capital allocation and investment. This endeavor can be achieved through measures such as fortifying the operational capacity of financial institutions, nurturing inclusivity within the financial sector, stimulating healthy competition and fostering innovative practices. Moreover, policies aimed at enhancing the investment climate, bolstering the resilience of capital markets, and providing support for infrastructural development should be pursued. The amalgamation of these actions will collectively contribute to the advancement of financial expansion within the national domain. Third, acknowledging the constructive and substantiated impact of gross domestic product on financial deepening within Nigeria, spanning both immediate and extended temporal frameworks, the government is advised to embark on initiatives that foster an environment conducive to sustainable economic growth and stability. By nurturing and sustaining such an environment, the government inherently facilitates the trajectory of financial sector development within the country.

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