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Financial Development, Foreign Direct Investment and Economic Productivity Nexus in Nigeria

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ABSTRACT

The role of financial development cannot be overemphasized for a sound and healthy structure of an economy. Also, a well-functioning and adequately regulated financial market is considered a prerequisite for reaping significant gains from foreign direct investments, which in turn could be channelled to enhance economic productivity. This empirical study explores the impact of financial development and foreign direct investment on economic productivity and the direction of causality between financial development and foreign direct investment on economic productivity respectively. The Autoregressive Distributed Lag (ARDL) Model, the Granger Causality Test and the Fully Modified Ordinary Least Squares (FMOLS) for robustness check were adopted as the main analytical techniques. The findings of the study indicate that financial development has significant but negative impact on economic productivity in Nigeria while foreign direct investment exerts a positive and statistically significant long-term effect on economic productivity. Additionally, Investment, Regulatory Quality, Inflation Rate, and Interest Rate are also discovered to have a negative impact on economic productivity in Nigeria. The Fully Modified Ordinary Least Squares (FMOLS) results further confirm these findings. This study thus recommends that Central Bank of Nigeria should initiate *reforms that must be directed at improving the quality of financial development indicators and its services to meet the needs of foreign and domestic investors and the economy at large;* the government should create an enabling environment, provide infrastructural facilities, and improve the quality of institution to enable Nigeria's economy to thrive productively given any global economic shocks.

Keywords: Financial Development, Foreign Direct Investment, Economic Productivity.

JEL classification: F21; G11; O10; O47

INTRODUCTION

The significance of Financial Development and Foreign Direct Investment (FDI) has been a major topic of interest in various economic literatures among Economists and policymakers. Globally, it has been witnessed over the years that financial development and foreign direct investment have positively propelled the economic growth of countries. Across global and regional economies, the phenomena of financial development and foreign direct investment have continued to persist. According to Patra & Sethi (2023), financial development directly helps in the economic growth of a region, and at the same time indirectly helps attract more foreign funds to foster the growth of a nation and to efficiently channel funds and increase the financial activity in the nation. The role of financial development cannot be disregarded for a sound and healthy structure of an economy, because it shapes up savings and ensures smooth effectiveness of intermediation to provide the highest return on investment opportunities. Financial development has been a crucial tandem to bolster economic productivity and it is pivotal for achieving maximum economic development in the global world. Notwithstanding, financial development is prone to economic policy uncertainties which can impair its activity on the Financial Development Index such as Financial Institutions Depths, Financial Institutions Access, Financial Institutions Efficiency, Financial Markets Depth, Financial Markets Access, and Financial Markets Efficiency. For instance, The Global Financial Crisis (GFC) in 2008 triggered uncertainties that affected the economic environment, economic policies and banking decisions, (Montes & Valladares, 2024). After the 2008 GFC, studies began to pay crucial attention to financial development and its stability given the role it

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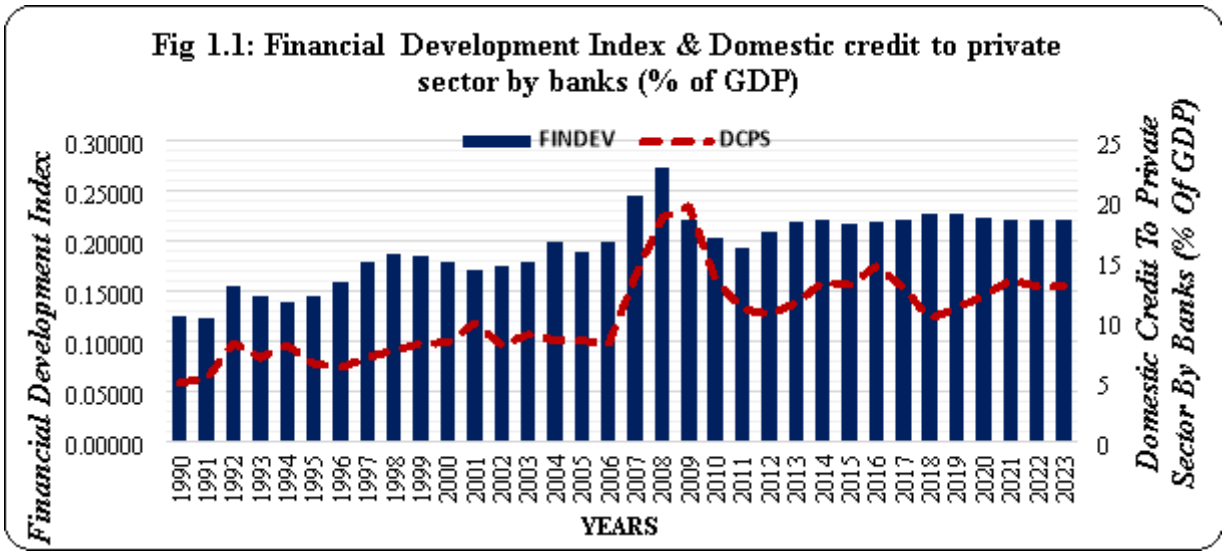
plays in facilitating the flow of credit supply to private and foreign investors, access to banking services, stock market stability, etc. Evidently, in Nigeria, one of the components of Financial Institutions Depth, which is the growth of credit to the private sector in real terms, was negative in Q3 2022. Real credit to the private sector, issued by deposit-taking banks and by the Central Bank of Nigeria, through its development finance operations, has contracted by 2.6 per cent year-on-year on average since August 2022, The lack of growth (in real terms) of the private sector credit is consistent with the slow overall pace of economic expansion since the initial recovery from the COVID-19 pandemic (World Bank, 2023). In light of this, according to the Central Bank of Nigeria Half Year Economic Report (2023), total sectoral credit utilisation stood at ₦37,479.37 billion in end of June 2023, relative to the ₦29,445.87 billion and ₦26,846.40 billion recorded at end of December 2022 and end of June 2022. During the first half of 2023, the Central Bank of Nigeria has sustained its regulatory and supervisory oversight of the institutions under its purview, towards promoting a safe, stable, and sound financial system. Due to this, the financial sector remained resilient in the first half of 2023, as key financial soundness indicators were within regulatory benchmarks.



Source: Researcher's Construct Using Data from IMF Financial Development Index Database and World Bank World Development Indicators, (2024).

Figure 1.1 shows the trend of the Financial Development Index and Domestic credit to the Private Sector by Bank (% of GDP) from 1990 – 2023 in Nigeria. It could be observed the rate of domestic credit has been rising and falling over the years after the Global Financial Crisis in 2008 compared to the financial development index whose value has been on a steady increase after the Global Financial Crisis. From 1990 – 2007 (Pre-Global Financial Crisis), for Financial Development, the index of financial development stood at 0.12 in 1990 with a sharp increase of 3% in 1997. It further increased between 2007 and 2008 from 0.246 to 0.272 in 2008 and declined to 0.19 in 2011. The value of financial development in 2012 stood at (0.209) indicating 8.3% increase from its previous value in 2011% and since then, the fluctuation in the value of financial development remained on the average of 22% throughout the period of 2013 to 2023. Throughout the periods of 1990 to 2023, financial development recorded its peak in 2008 with financial development index of 0.272. This indicates that the index of financial development has been fluctuating throughout the period. On the other hand, domestic credit to the private sector from 1990 to 2007 (Pre-Global Financial Crisis) figure stood at 4.95% in 1990 to 13.79% in 2007. From 2008 to 2023, the figure has been fluctuating for instance in 2008 it stood at 18.63% to 12.95% in 2023. Overall, the graphs show that Nigeria has made significant progress in improving financial systems through financial innovations.

Furthermore, a well-functioning and adequately regulated financial market is considered a prerequisite for reaping significant gains from foreign direct investments, which in turn could be channelized to enhance economic growth. With A well-developed financial markets of host countries act as a catalyst to exploit FDI's benefits in several ways. First, easier access to credit in the host country allows firms to utilize new technologies by investing in new physical and human capital, thereby enhancing capital formation. Second, a highly developed financial sector accelerates FDI to provide both backward and forward linkages, which is

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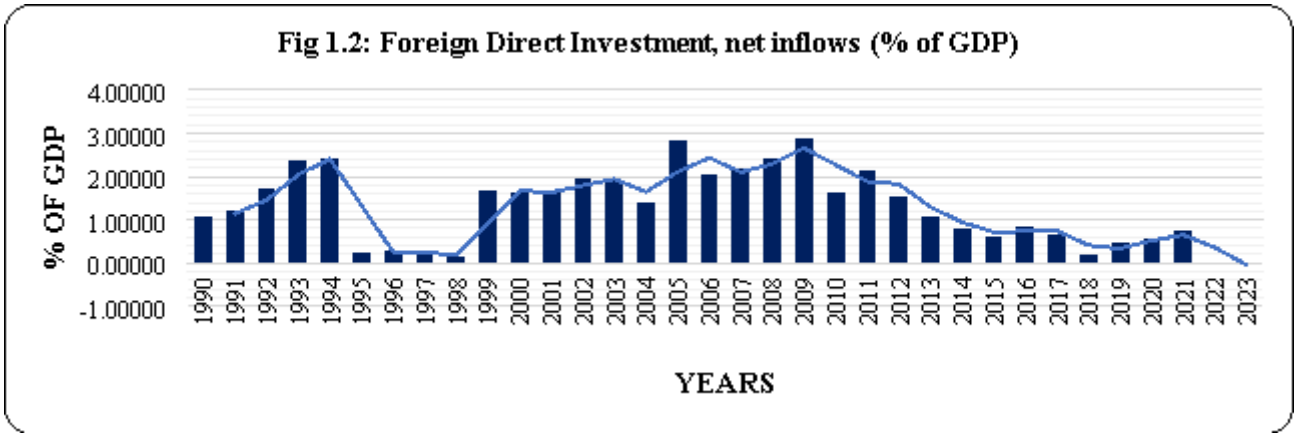
beneficial for domestic suppliers and consumers. This could lead to improved production efficiency and better quality of products (Jithin & Suresh, 2020). Foreign direct investment, which is the main channel through which multinational corporations expand their operations abroad is believed to be not only about capital movement across borders but also a conduit for knowledge and advanced technology transfer, which, in turn, stimulates economic progress in the host country (Yeboua, 2019). In Nigeria, the slow increase in FDI highlights the challenges Nigeria faces in attracting long-term investment amid a challenging global economic environment and domestic issues. With an uninterrupted Foreign Direct Investment inflow, given its diversified economy, Nigeria has the potential to rip the benefits of economic productivity, employment, human capital, and improvement in vital macroeconomic indicators for national stability.



Source: Researcher's Construct Using Data from World Bank World Development Indicators (2024)

The figure above shows that the flow of foreign direct investment into Nigeria has been fluctuating with a very high inflow in 2009 and a very low flow in 2022 and 2023. These recent times mark the lowest inflow of FDI in the past four decade in the history of Nigeria.

In the presence of financial development and foreign direct investment, economic productivity is expected to spur, and this has not been achieved over time in Nigeria. Financial instability in Nigeria has been associated with serious issues in the financial sector. These issues had been relatively large in terms of weak public confidence in the financial markets, global financial uncertainty, geopolitical tensions, and volatility in crucial financial development indicators, posing a great threat to investment and other economic activities. Evidently, the IMF Global Financial Stability Report (2024) highlighted that an increase in geopolitical tensions could have adverse implications for macro-financial stability leading to large capital flow reversals from countries. On the other hand, banks' performance could be significantly affected by a rise in geopolitical tensions leading to a decline in financial stability and profitability. Aside from the level of financial development, foreign investors are mostly concerned about the quality of institutions and domestic policies for business operations and long-term economic activity. Generally, institutions and domestic policies matter for foreign direct investors because they influence the structure of their investment in the host countries. The high exit of multinational firms in Nigeria has been largely attributed to the deteriorating institutions, insecurity, infrastructure deficit, economic and political reforms and policies that are hugely harsh to investors. In most recent times, available reports by the World Investment Report (2023, 2024), indicate that Nigeria's FDI inflows turn negative, to -$187 million, due to equity divestments and investor uncertainty about the state of the economy, tighter financing conditions and volatility in financial markets.

This study empirically examines the direct impact of financial development on economic productivity in Nigeria by utilizing the IMF Financial Development index developed by Svirydzenka (2016), a departure from prevailing focus in prior studies that primarily focus on using proxy variables for financial development. Also, it examines the causal directions between financial development and foreign direct investment on economic productivity in Nigeria using data spanning a relatively large period of 34 years. More so, this study recognises the fact that Nigeria, an emerging and developing economy is characterized by a heavy reliant of FDI for economic productivity. This positioning places Nigeria in a particularly vulnerable position, as it is highly susceptible to the influence of geopolitical volatility that often drive changes in investor decisions.

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LITERATURE

Studies have shown that capital inflows and financial intermediation are paramount for increased investment and economic productivity of countries. Also, one of the earliest theories of capital inflows developed by MacDougall (1958) and subsequently elaborated upon by Kemp (1964) emphasized on the efficiency of the use of capital. It argued that capital would continue to flow from capital abundant country to capital deficient country until the price of capital equals its marginal productivity. This leads to an improvement in the efficiency of resource use, which ultimately leads to an increase in welfare.

Similarly, Shaw (1973), proposed the "debt-intermediation hypothesis" whereby expanded financial intermediation between savers and investors resulting from financial liberalization (higher real interest rate) and financial development increases the incentive to save and invest, stimulates the investment due to increased supply of credit and increased level of average efficiency of investment. For Shaw, investment (I) is a decreasing function of the real interest rate (r), which is an increasing function of the economic growth rate (g) and the real interest rate (r). That is I = I (r) S = S (r, g). He further contended that increased financial intermediation provided a more direct impetus for growth. Liberalization would result in an expanded, improved, and integrated financial sector that would lead to an increase in the savings rate, an increase in the rate of investment (by facilitating more lumpy investment), and a direct enhancement of growth (by improved financial technologies). Shaw suggests that the argument for liberalization in finance is that scarcity prices for savings increase rates of saving, improve savings allocation, induce some substitution of labour for capital equipment, and assist in income equalization; furthermore, real growth in financial institutions provides more investors with access to borrowing and gives them an incentive to save and accumulate equity that makes borrowing cheaper.

Empirical investigation of financial development and economic growth shows that financial development positively and significantly impacts the economic growth of Asian economies (Patra & Sethi,2023). Also, Sethi et al. (2023), shows that trade openness, foreign aid, Financial Development, and foreign direct investment have a significantly positive impact on the economic growth of emerging Asian economies. With panel data from 120 countries from 1997 to 2017, and estimated using the System GMM technique, Wen et al (2021), analyses the impact of financial development on economic growth, inflation and employment. Their empirical results reveal that financial development have a significant negative impact on economic growth. Peprah et al (2019), showed that the joint effect of financial development and remittances on economic growth is higher than their individual effects, and the threshold effect of financial development on economic growth suggests that over-expansion of the financial sector could have negative consequences on growth. Most studies like Adekunle et al, (2013), Asongu (2019), Rahman, Khan, & Charfeddine (2020), Ustarz & Fanta (2021) Chettri (2022), Poghosyan (2022), Oyadeyi (2023) support a positive effect of financial development on economic growth. Other studies like Akintola et al (2020) observed a negative relationship between financial development and economic growth.

The quality of institution is argued in literature to affect the efficiency of the financial system and hence its effect on economic activities in the country. Institutional quality improves the efficiency of financial system in the allocation of resources to productive activities (Asante, Takyi, & Mensah, 2022; Clement & Nicholas, 2023).

Also, most studies like Ang, (2010), Ibhagui, (2019; Ciobanu, (2020); Yusuf et al (2020), Burlea-Schiopoiu et al., (2021); Orji et al., (2021); Okeke and Chinanuife (2022); Yimer, (2023); Mwakabungu & Kauangal, (2023) showed positive long run effect of foreign direct investment on economic growth. However, their view on the short run effect of foreign direct investment differ considerably.

Therefore, many scholars have contributed to the study of financial development and foreign direct investment in terms of economic growth. However, a handful of these studies on financial development have concentrated on their focus on sub-Saharan Africa as a whole, and other countries globally, which is slightly different from studies on Foreign Direct Investment, which has been researched in Nigeria, various countries, and regional contexts. Extant studies in the economic literature have not captured both financial development and foreign direct investment on economic productivity in the analysis of Nigeria's framework. Further, there is a limited

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literature that applies the International Monetary Fund's Financial Development Index, which captures the overall financial development variables in their empirical analysis. Most studies used proxy variables of financial development to measure the financial development state of a country. Against these gaps in the literature, therefore, this study will attempt to provide insights into to the existing literature by exploring especially the impact of financial development and Foreign Direct Investment on Nigeria's Economic Productivity.

METHODOLOGY

The theoretical underpinning of this work is based on the work of Shaw (1973) in his work the "debt-intermediation hypothesis". He argued that increased financial intermediation provided a more direct impetus for growth. For Shaw, investment (I) is a decreasing function of the real interest rate (r), which is an increasing function of the economic growth rate (g) and the real interest rate (r). That is I = I (r) S = S (r, g).

Model Specification

We adopt the Autoregressive Distributed Lag (ARDL) model/bounds test approach to cointegration proposed by Pesaran et al. (2001) to achieve the study's objective. This technique offers flexibility of application regardless of the level of integration of the variables. In other words, the approach is helpful whether the series are stationary at level I (0), integrated of order one, I(1), or a mix of I (0) and I(1). Another attractive feature of the ARDL/bound test technique is that it is amenable to small and large sample sizes and estimates both the short-run and long-run coefficients and the speed of adjustment.

Following the objective of the study, we specify the ARDL model as shown in Eq. (1):

$$\begin{aligned}\Delta GDP\_PC_t = \alpha_0 &+ \sum_{i=1}^{n} \beta_1 \Delta GDP\_PC_{t-i} + \sum_{i=0}^{n} \beta_2 \Delta FINDEV_{t-i} + \sum_{i=0}^{n} \beta_3 \Delta FDI_{t-i} \\ &+ \sum_{i=0}^{n} \beta_4 \Delta LINVEST_{t-i} + \sum_{i=0}^{n} \beta_5 \Delta REGQ_{t-i} + \sum_{i=0}^{n} \beta_6 \Delta INF_{t-i} \\ &+ \sum_{i=0}^{n} \beta_7 \Delta INTR_{t-i} + \varphi_{t-1} + \gamma_1 FINDEV_t + \gamma_2 FDI_t + \gamma_3 LINVEST_t \\ &+ \gamma_4 REGQ_t + \gamma_5 INF_t + \gamma_6 INTR_t + \mu_t \quad (1)\end{aligned}$$

Where GDP_PC, FINDEV and FDI represent the series for GDP per capita (a proxy for economic productivity), FINDEV (Financial Development) and FDI (Foreign Direct Investment). Furthermore, INVEST denotes investment (a proxy with Gross Fixed Capital Formation), Regulatory Quality (a proxy for institutional quality), while INFLR indicates inflation (annual percentage change in the consumer price index), and INTR denote Interest rate. Where, Δ is the first difference operator, and α_0 is the drift component. The expressions with summation sign (β_1-β_7) represents the short-run dynamics of the model, while the coefficients (γ_1-γ_6) represents long-run relationship and ε_t is the serially uncorrelated disturbance with zero mean and constant variance.

To check for causality, the paper employed the Granger-causality test. According to Granger (1969), each variable is considered endogenous within the model. Equation (2) demonstrate the causality between financial development and economic productivity, while Eq. (3) demonstrate the causality between foreign direct investment and economic productivity in Nigeria.

$$FINDEV_t = \sum_{i=1}^{n} \alpha_i FINDEV_{t-i} + \sum_{j=0}^{n} \alpha_i GDP\_PC_{t-i} + \mu_{1t}$$

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$$GDP\_PC_t = \sum_{i=1}^{n} \alpha_i GDP\_PC_{t-i} + \sum_{j=0}^{n} \alpha_i FINDEV_{t-i} + \mu_{2t} \quad (2)$$

$$FDI_t = \sum_{i=1}^{n} \alpha_i FDI_{t-i} + \sum_{j=0}^{n} \alpha_i GDP\_PC_{t-i} + \mu_{1t}$$

$$GDP\_PC_t = \sum_{i=1}^{n} \alpha_i GDP\_PC_{t-i} + \sum_{j=0}^{n} \alpha_i FDI_{t-i} + \mu_{2t} \quad (3)$$

Finally, the study conducts post-estimation diagnostic tests to validate the consistency of the estimated model with the essential assumptions of the Ordinary Least Squares (OLS) estimator.

RESULTS AND DISCUSSION

The descriptive analysis (Table 1) employs measures of central tendency, dispersion and variability to uncover the underlying statistical properties of the respective variables. Considering the mean values, we observe that, during the review period, then observations on GDP per capita (GDP_PC), Financial Development (FINDEV), Foreign Direct Investment (FDI), Investment (INVEST), Regulatory Quality (REGQ), Inflation Rate (INFLR) and Interest rate (INTR) averaged 1.57705, 0.19488, 1.27879, 8.58856, -0.90638, 18.2781, and 3.01657 per cent, respectively. It is important to note that the observations on GDP_PC, FINDEV, FDI, and INVEST are normally distributed as the probability values of their respective Jarque-Bera statistics do not support rejecting the null hypothesis of normality at the five per cent significance level. On the other hand, observations on REGQ, INFLR and INTR are non-normally distributed as the Jarque-Bera statistics, and their probability values indicate the rejection of the null hypothesis of normality.

Table 1: Descriptive Statistics

	GDP_PC	FINDEV	FDI	INVEST	REGQ	INFLR	INTR
Mean	1.57705	0.19488	1.27879	8.58856	-0.90638	18.2781	3.01657
Median	1.49977	0.19958	1.28855	8.89034	-0.91436	12.9418	5.52843
Maximum	12.2761	0.27273	2.90025	11.3253	-0.68177	72.8355	18.1800
Minimum	-4.50715	0.12307	-0.03952	5.57126	-1.29282	5.38801	-31.4526
Std. Dev.	3.73789	0.03504	0.86362	1.54139	0.13378	15.9020	9.99036
Skewness	0.51004	-0.29235	0.12351	-0.21742	-0.97523	2.18039	-1.37115
Kurtosis	3.59037	2.62383	1.87767	2.35376	4.50046	6.85509	5.67123
Jarque-Bera	1.96789	0.68478	1.87089	0.85951	8.57883	47.9940	20.7622
Probability	0.37383	0.71007	0.39241	0.65067	0.01371	0.00000	0.00003
Sum	53.6197	6.62580	43.4788	292.011	-30.8168	621.454	102.563
Sum Sq. Dev.	461.070	0.04051	24.6128	78.4040	0.59063	8344.85	3293.64
Observations	34	34	34	34	34	34	34

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Source: Authors, 2025

Unit root test

To determine the time series characteristics of the variables, we implement the Augmented Dickey-Fuller unit root tests and present the results in Table 2. The overall result indicates a consistent outcome in the test types. Specifically, GDP_PC is only stationary at Level, i.e., I(0), as the null hypothesis of the presence of unit root in the respective variables, cannot be rejected at the level. Furthermore, FINDEV, FDI, Investment, Regulatory Quality, Inflation Rate and Interest Rate became stationary at first difference I(I), as the null hypothesis of the presence of a unit in each of the variables is rejected at the five per cent significance level. Since the variables exhibit a mixed order of integration in their stationarity levels, the study's objectives can be best achieved by applying ARDL/bound test methodology.

Table 2: Unit Root Test

Variable	**Level Form @ 5%**			**First Difference @ 5%**		
	ADF t-Statistics	***Critical Value***	***P-Value***	***ADF t-Statistics***	***Critical Value***	***P-Value***
GDP_PC	-3.734119	-3.552973	0.0338	-----	-----	-----
FINDEV	-3.498500	-3.557759	0.0566	-5.356262	-3.562882	0.0007
FDI	-2.019172	-3.557759	0.5691	-6.853526	-3.557759	0.0000
INVEST	-1.952833	-3.552973	0.6046	-4.232598	-3.557759	0.0110
REGQ	-2.995277	-3.552973	0.1486	-6.905873	-3.557759	0.0000
INFLR	-2.480090	-3.552973	0.3351	-9.797882	-3.580623	0.0000
INTR	-2.550838	-3.568379	0.3035	-4.369685	-3.568379	0.0084

Source: Authors, 2025

Bounds test

We estimate the ARDL model using the automatic lag selection with a maximum of 2 lags based on the Akaike Information (AIC). We present the bound test result in Table 3, where we observe the existence of cointegration among the variables in the model. Specifically, the computed F-statistic value (5.21) is higher than the upper bound critical values at the conventional level of statistical significance. Hence, we reject the null hypothesis of no cointegration and conclude that a long-run relationship exists among the variables in the model.

Table 3: Bound Test

F-statistic	**5.213892**	
	Critical Value Bounds	
Significance	**I (0) (Lower Bound)**	**I (1) (Upper Bound)**
10%	2.12	3.23
5%	2.45	3.61

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2.5%	2.75	3.99
1%	3.15	4.43

Source: Authors, 2025

ARDL Long-Run estimates

The long run analysis of financial development, foreign direct investment and economic productivity nexus is presented on table 4.

Table 4: ARDL Long-Run Result

Variable	Coefficient	Std. Error	t-Statistic	Prob. Value
FINDEV	-70.20112	32.90469	-2.133468	0.0478
FDI	2.679049	0.779386	3.437382	0.0031
INVEST	-0.201148	0.704545	-0.285501	0.7787
REGQ	-3.564401	3.767055	-0.946204	0.3573
INFLR	-0.457476	0.126987	-3.602535	0.0022
INTR	-0.280994	0.186538	-1.506360	0.1503
C	17.10797	7.035710	2.431591	0.0264
R-squared	0.768550	F-statistic = 4.032140	Durbin-Watson stat = 1.956858	
Adjusted R-squared	0.577944	Prob (F-statistic) = 0.003885		

Source: Authors, 2025

Following the confirmation of a cointegration relationship among the variables in the model, we proceed with the estimation of the ARDL long-run coefficients and present the result in Table 4. The result shows that financial development negatively and significantly influences economic productivity (measured by GDP per capita) in Nigeria. This negative relationship is as a result of corruption and poor regulatory mechanism in the financial system. A situation where MDs of banks use fictitious names to collect bank facilities just to launder it, thereby denying legitimate businessmen from having access to the bank facilities. Also, the role of exorbitant interest rate may not be unconnected to this negative relationship. When interest rate is high only the government can access bank facilities, which crowd out private investment which is the major propeller of economic growth. This finding is consistent with the findings of Oyadeyi (2023) and Adeniyi et al (2015). It implies that financial development tends to decrease GDP Per Capita in the long run. However, the long-run impact of foreign direct investment on economic productivity is positive and significant, in line with the submission of Orji et al (2021), Yusuf et al (2020). This implies that increasing inflow of foreign direct investment to Nigeria leads to increase in economic productivity. Specifically, the result shows that a one per cent increase in foreign direct investment is associated with a 2.67 per cent improvement in economic productivity, all things being equal. However, the finding is contrary to that of Abdulkarim (2023). Expectedly, the result points to a long-run negative impact of investment (proxy for Gross Fixed Capital Formation) on economic productivity. This empirical outcome is not surprising as it validates the criticality of corruption, rent-seeking behaviour, or political uncertainty may also distort the allocation of investment toward advancing economic productivity in Nigeria. The finding is consistent to that of Oyadeyi (2023) who found that investment had a short run and long run negative impact on GDP per capita, which disputes the study of

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Abdulkarim, (2023), Olorogun et al (2020), and Orji et al (2015) which found that investment have a positive impact on GDP per capita. Further, the result indicates the long-run negative impact of regulatory quality (proxy for institutional quality) on economic productivity. The result of regulatory quality depicts the dynamics of maintaining a well-designed regulatory framework in fostering growth and stability in GDP Per capita, and the negative coefficient does not align with the economic expectations of this analysis. Also, the long-run result revealed the negative impact of inflation rate on economic productivity which implies that a unit increase in inflation rate has a tendency of decreasing GDP Per capita by 0.45 per cent, as extreme inflation rate can erode consumer and investor confidence, discourage long-term lending and investment, and distort resource allocation in the economy. This finding is consistent with the study of Oyadeyi (2023), Abdulkarim (2023), and Orji et al (2021) who found negative impact of inflation rate on the growth of Nigeria. Finally, the long-run estimates show that interest rate negatively and insignificantly depresses economic productivity underscoring the detriment of increasing interest rate in the pursuit of stable productivity of the economy. This finding is consistent with the study of Okonkwo et al (2015)) who found negative impact of interest rate on the growth of Nigeria, and contradict the study of Abdulkarim (2023) who found a positive impact of interest rate on GDP Per capita in Nigeria.

Diagnostic tests

The last support in implementing the ARDL methodology is conducting post-estimation diagnostic tests to ascertain that the fundamental assumptions of the Ordinary Least Squares (OLS) estimator have not been violated. We present the diagnostic tests result in Table 6, where we do not reject the null hypotheses that the residuals are not serially correlated, not heteroscedastic, and normally distributed, as the probability values of the respective test statistics do not point to a rejection of the null hypotheses. Finally, the Ramsey reset test result indicates that the model has been correctly specified as the probability value does not provide a ground for rejecting the null hypothesis that the must is correctly specified.

Table 6: Diagnostic Test

Test	Test Type	Test Statistic	P-Vale	Decision
Normality	Jarque-Bera Test	1.547850	0.461199	Normally Distributed
Heteroscedasticity	Breusch-Pagan-Godfrey	11.33166	0.6598	No Heteroscedasticity
Autocorrelation	Breusch-Godfrey (BG) LM Test	1.649424	0.4384	No Serial Correlation
Specification	Ramsey RESET Test	0.293683	0.5953	Correctly Specified

Source: Authors, 2025

Granger Causality Test Result

The direction of causality is an important factor in evaluating the relationship between Financial Development, Foreign Direct Investment and GDP per capita growth. The granger causality test is conducted to determine the direction of causality between Financial Development (FINDEV), Foreign Direct Investment (FDI) and economic productivity (RGDP_PC).

Table 7: Granger Causality Test

Null Hypothesis	F-statistic	Prob. Value	Conclusion
FINDEV does not Granger Cause GDP_PC	0.15991	0.8530	No Causation
GDP_PC does not Granger Cause FINDEV	1.12347	0.3399	No Causation

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FDI does not Granger Cause GDP_PC	1.13173	0.3373	No Causation
GDP_PC does not Granger Cause FDI	2.39835	0.1100	No Causation

Source: Authors compilation from E-view result

Table 7 shows that there is a no causal relationship between FINDEV (Financial Development) and GDP_PC (Economic Productivity) with a probability value of 0.8530 and GDP_PC (Economic Productivity) and FINDEV (Financial Development) with a probability value of 0.3399. Further, the analysis also revealed no causal relationship causal relationship between FDI (Foreign Direct Investment) and GDP_PC (Economic Productivity) with a probability value of 0.3373 and GDP_PC (Economic Productivity) and FDI (Foreign Direct Investment) with a probability value of 0.1100. As a result, this study rejects the alternate hypothesis and conclude no causation relationship exists between FINDEV - GDP_PC and FDI - GDP_PC. This implies that Financial Development and Foreign Direct Investment does not granger causes GDP per capita growth (Economic Productivity) in Nigeria.

Robustness Check Result

To confirm whether the long run and short run result are robust and consistent with the ARDL Model output, the Fully Modified Ordinary Least Squares (FMOLS) technique developed by Phillips and Hansen (1990) was utilized to confirm the influence of financial development, foreign direct investment and the control variables on economic productivity (GDP_PC) in Nigeria. It was designed to provide consistent estimates in the presence of co-integration between variables in a time series analysis and addressing issues like endogeneity and serial correlation.

Table 8: Fully Modified Ordinary Least Squares Result

Variable	Coefficient	Std. Error	t-Statistic	Prob. Value
FINDEV	-44.11299	30.69657	-1.437066	0.1626
FDI	1.437561	0.646754	2.222731	0.0351
INVESTMENT	-0.146670	0.673881	-0.217649	0.8294
REGQUALITY	-2.028861	3.777823	-0.537045	0.5958
INFLR	-0.236159	0.057472	-4.109132	0.0004
INTR	-0.074399	0.092519	-0.804148	0.4286
C	12.71010	5.744550	2.212549	0.0359
R-squared	0.085760	Long-run variance = 7.893349		
Adjusted R-squared	-0.125218			

Source: Authors compilation from E-view result

The robustness analysis results were slightly consistent with the main analyses. FINDEV, INVESTMENT, REGQUALITY, INFLATION RATE, AND INTEREST RATE depicts negative coefficient on GDP_PC. Furthermore, the result confirms the positive relationship of FDI on GDP_PC on the long run and short run ARDL output.

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CONCLUSION

The relevance of Financial Development and Foreign Direct Investment is essential in bolstering Economic Productivity in Nigeria. It has been established that the stability of any financial development indicators can cause a steady inflow of foreign direct investment in the short run and long run thus contributing to the economic growth of any emerging and developing economies, and Nigeria is no exception. Likewise, FDI is pivotal in technology transfer and sectoral growth in the economy. With the role of financial development and foreign direct investment in propelling economic productivity, this study empirically investigates the effect of Financial Development and Foreign Direct Investment on economic productivity as well as other determinants of economic productivity in Nigeria, using the Autoregressive Distributed Lag (ARDL) model, Granger Causality Test and the Fully Modified Ordinary Least Squares Model. Hence, the findings of this study reveal that financial development has a negative coefficient but a significant impact on economic productivity in Nigeria, while foreign direct investment has positive coefficient and a significant impact on economic productivity in Nigeria. It establishes the existence of both short-run and long-run relationships between these variables. Given the negative impact of financial development, it signifies that if financial institutions and financial markets are not working effectively, it will deter long-term economic growth in Nigeria. On the other hand, the positive impact depicts that FDI will in fact; contribute to economic productivity and technological progress in Nigeria. In addition, there is no causality running from financial development to economic productivity and foreign direct investment to economic productivity in Nigeria. Finally, factors that determine economic productivity in Nigeria, other than Financial Development and Foreign Direct Investment are Investment, Regulatory Quality, Inflation Rate and Interest Rate in the study, which result, revealed a negative impact.

Based on these findings from the long run, the study recommends that the Central Bank of Nigeria should enact reforms that must be directed at improving the quality of financial development indicators and its services to meet the needs of foreign and domestic investors and the economy at large. These include policies that will check the activities of banks MDs who launder the facilities meant for investors for private gains. That is, efforts should be directed at the removal of impediments that block the short-term and long-term linkage between financial development and foreign and domestic investment in Nigeria. Secondly, the government should endeavour to create an enabling environment and provide infrastructural facilities for foreign and domestic investment performance to thrive given any global economic shocks and to improve economic productivity in Nigeria. Finally, government institutions should embrace rigorous policy evaluations and impact assessment in lowering the cost of governance and deficit financing to reduce the negative effects of inflation in the short and long run. That is, before implementing new policies, government institutions should conduct thorough evaluations and impact assessments to identify potential shocks or unintended consequences and incorporate measures to mitigate these risks thereby providing macroeconomic stability when necessary.

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