

# Foreign Direct Investment, Macroeconomic Stability, and Technological Progress in Nigeria's Economic Growth

Adegboye Folasade Bosede & Gbebikan Anthonia Motunrayo

Department of Finance, Covenant University, Nigeria

Received: 2025-09-26; Reviewed: 2025-10-24; Accepted: 2025-11-12

\*Corresponding Email: [anthonia.gbebikanpgs@stu.cu.edu.ng](mailto:anthonia.gbebikanpgs@stu.cu.edu.ng)

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## Abstract

This research investigated the impact of foreign direct investment (FDI), macroeconomic variables, specifically inflation and exchange rate, and technological advancement, especially financial technology (fintech) products of mobile banking transactions and point-of-sale, on Nigeria's economic development. Given the revolutionary potential of technology in the modern global economy, the study investigates how stable macroeconomic variables can draw foreign direct investment (FDI) to Nigeria's tech-driven industries, including digital finance, health technology, and telecommunications. This research utilized secondary data from 1990 to 2023 obtained from the Central Bank of Nigeria, and adopted the multiple regression analysis to estimate the variables. The findings showed that FDI, inflation, exchange rate, mobile banking transactions, and point-of-sale usage significantly impact GDP per capita. This research thus recommended that there is a need to foster a stable economic environment, invest in digital infrastructure, and design incentives for foreign investors targeting high-tech industries.

**Keywords:** Economic Development; Exchange Rate; Foreign Direct Investment; Inflation; Technology;

**How to Cite:** Bosede, A. F., & Motunrayo, G. A. (2025). Foreign Direct Investment, Macroeconomic Stability, and Technological Advancement in Nigeria's Economic Development. *Journal of Education, Humaniora and Social Sciences (JEHSS)*. 8 (2): 372-379

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## INTRODUCTION

Foreign direct investment (FDI) refers to the inflow of investment into Nigeria by foreign investors, encompassing the total investment made by foreigners in a nation (Adeleke & Alabi, 2023). Inflation is a persistent and appreciable rise in the general level of prices (Eke, Okon, & Morgan, 2023). It can also be defined as a generalized and sustained increase in the price level over a long period within an economy. According to Idisi, Ojokojo, and Fidelis (2023), inflation represents a persistent rise in the general price level of a wide range of goods and services in a country over time. Not every increase in prices qualifies as inflation; to be considered inflationary, the rise must be consistent, enduring, and sustained (Monadjemi & Lodewijks, 2021). Moreover, the rise should affect almost all commodities and not be temporary.

Galloping inflation poses a major threat to the stability and prosperity of many market economies, impeding economic growth through its undesirable effects (Kur & Ogbonna, 2019). The challenge of inflation is not new—it has long been a significant obstacle in the developmental processes of numerous economies.

The exchange rate is the price of one country's currency in relation to another (Enemuo, 2024). It reflects the number of units of a given currency required to purchase one unit of another. A hallmark of an industrialized nation is a stable currency; thus, developing countries aspiring toward industrialization must maintain relative currency stability. Price stability is essential for long-run output growth and should be the core objective of monetary policy (Enemuo, 2024). Consequently, the exchange rate serves as a vital macroeconomic variable in international policy formulation and a key determinant of competitiveness in global trade. The movement of exchange rates influences the relative prices of foreign and domestic goods, thereby affecting international trade flows (Enemuo, 2024).

Financial technology (fintech) refers to the application of computers and digital systems in executing financial transactions such as payments and fund transfers. Folowosele, Ikpefan, and Isibor (2022) stated that fintech enhances efficiency in financial services by leveraging technology for transactions and credit applications. These innovations have introduced competition, flexibility, and efficiency into Nigeria's economy (Folowosele et al., 2020). Through fintech, investors can make payments and conduct transactions seamlessly, contributing to the evolution of a cashless economy where financial interactions occur online. The adoption of fintech has improved financial system efficiency, institutional performance, and the overall quality of financial services.

In 2015, the United Nations introduced 18 Sustainable Development Goals (SDGs) to be achieved by member nations, including Nigeria, before 2030. One of these goals, Goal 8, focuses on promoting sustained, inclusive, and sustainable economic growth. The objective is for nations to maintain stable and sustained economic growth toward 2030, and one means of achieving this is through foreign direct investment (FDI), which can boost trade inflows, enhance production, and promote overall economic development.

Nigeria's sustainable development index has shown slight fluctuations over the years, recording 53.65 in 2015, 54.51 in 2018, 54.49 in 2020, rising slightly to 54.66 in 2022 before declining to 54.58 in 2023 (United Nations, 2024). This trend highlights the importance of FDI in improving the nation's capital inflows, investment levels, and progress toward achieving a 100% SDG performance index by 2030.

Approximately 60% of Nigeria's FDI is concentrated in the oil and gas sector (National Bureau of Statistics [NBS], 2022). This dominance is largely due to Nigeria's abundant petroleum resources, discovered first in Bayelsa State and later in other regions such as Delta and Rivers States. Consequently, foreign oil companies like Shell PLC have taken advantage of these resources to make significant investments, thereby increasing the nation's FDI and government oil revenues, which consistently exceed non-oil revenues.

Inflation has long been linked to money supply, often described by the maxim "inflation is too much money chasing too few goods." According to Idisi et al. (2023), inflation reflects a reduction in the purchasing power per unit of money — a loss in real value of the medium of



exchange and unit of account in an economy. In an inflationary environment, the national currency struggles to serve as a stable medium of exchange and store of value, resulting in adverse impacts on income distribution, industrial output, and employment (Idisi et al., 2023).

Inflation is typically accompanied by a depreciation in the value of a country's currency and a rise in nominal exchange rates. Despite repeated efforts by the Nigerian government to maintain currency stability, the naira has depreciated steadily since the 1980s (Ukachukwu & Odionye, 2020). For instance, the naira-to-dollar exchange rate shifted from ₦1 to \$1 in 1981 to an average of ₦102 to \$1 in 2000 (Ukachukwu & Odionye, 2020), and further to ₦129 to \$1 in 2003. By 2004, the rate depreciated to ₦133 to \$1, before appreciating slightly to ₦149 to \$1 in 2009. In December 2013, the exchange rate was ₦157 to \$1, and by 2015 it had fallen to ₦192 to \$1. As of December 2022, Nigeria recorded an all-time low exchange rate of ₦751 to \$1 (Central Bank of Nigeria, 2022).

The persistent depreciation of the naira has had significant ripple effects on the prices of goods and services across Nigeria, contributing to sustained inflationary pressures. This decline in the currency's value has coincided with periods of inflationary growth and has resulted in a notable deterioration in the living standards of the average Nigerian. Generally, when a country's currency experiences a persistent fall in value, there is a corresponding increase in its nominal exchange rate relative to other global currencies.

The existence of excess aggregate demand can trigger demand-pull inflation, while cost-push inflation results from rising production costs. Additionally, structural inflation emerges from inefficiencies within the production, marketing, and distribution systems of an economy (Eke, Okon, & Morgan, 2023). This suggests that a continuous rise in the nominal exchange rate is often associated with a persistent increase in the general price level of goods and services, reflecting inflationary trends in the economy.

The relationship between Nigeria's inflation rate and foreign direct investment (FDI) inflows has drawn increasing scholarly attention, particularly amid recent global economic instability (Njoku, Nwaimo, & Essienette, 2023). Understanding how these two variables interact is essential for developing strategies to attract FDI and stimulate economic growth. According to Njoku et al. (2023), while FDI has the potential to significantly enhance economic growth, its impact is often moderated by prevailing inflationary conditions. As one of Africa's largest economies, Nigeria has experienced fluctuating FDI inflows due to various macroeconomic factors, including inflation and exchange rate volatility.

Furthermore, the adoption of financial technology (fintech)—particularly mobile banking—has transformed financial transactions in Nigeria. Customers can now perform transactions and monitor account balances effortlessly, fostering a cashless economy where digital payments replace physical cash. The proliferation of point-of-sale (POS) systems and mobile banking applications has enhanced operational efficiency within banks. Fintech innovations have also improved financial performance and service delivery in the banking sector. However, challenges such as low internet connectivity and high transaction costs continue to hinder the widespread adoption of fintech solutions, especially among foreign investors.

This study therefore examines the relationship between inflation, exchange rate, fintech, and FDI inflows in relation to Nigeria's economic development.

## RESEARCH OBJECTIVES

The main objective of this research is to investigate the impact of foreign direct investment (FDI), macroeconomic variables, and technological advancement on Nigeria's economic development.

The specific objectives are to:

1. Examine how foreign direct investment has impacted the gross domestic product (GDP) per capita of Nigeria.
2. Assess how the exchange rate has impacted the gross domestic product per capita of Nigeria.
3. Investigate how inflation has impacted the gross domestic product per capita of Nigeria.

4. Determine how mobile banking transactions have impacted the gross domestic product per capita of Nigeria.
5. Study how the number of point-of-sale (POS) usages has impacted the gross domestic product per capita of Nigeria.

## THEORETICAL FRAMEWORK

### Dependency Theory

The Dependency Theory, rooted in Marxist thought, argues that foreign direct investment (FDI) often fosters economic dependency rather than promoting genuine development—contradicting the neoclassical perspective. The theory emphasizes the imbalance of power between industrialized and developing nations. According to dependency theorists, multinational corporations (MNCs) exploit developing countries by dominating local economies, extracting resources, and repatriating profits abroad.

As Friedman (1968) posited, FDI in developing nations can hinder economic diversification, impede technological advancement, and exacerbate income inequality. During periods of high inflation, domestic assets become cheaper, allowing foreign investors to acquire valuable resources and assets at lower costs. These investors often generate revenue from resource-based industries but reinvest minimally in the host economy.

Nigeria's oil industry exemplifies this dependency dynamic. Despite consistent FDI inflows into the oil sector, their impact on broader economic diversification has been limited (Arasa, 2023). Dependency theorists also argue that inflation deepens economic dependency by increasing debt-servicing costs and diverting funds from essential development initiatives. This challenge remains evident in Nigeria, where external debt growth frequently coincides with inflationary pressures.

While the Dependency Theory effectively highlights the exploitative dimensions of FDI in resource-dependent economies such as Nigeria's, it is often critiqued for focusing excessively on FDI's negative effects without offering actionable policy alternatives for fostering balanced and sustainable economic growth.

## RESEARCH METHODS

This study adopts an econometric model adapted from Alfaro (2018), presented in a log-linearized form to simplify estimation and reduce data variability. The model is specified as follows:

$$LGDP_{pc} = a_0 + a_1LFDI + a_2EXR + a_3INF + a_4LMBT + a_5LPOS + u \dots\dots\dots(1)$$

### Where:

- **LGDP<sub>pc<sub>t</sub></sub>** = Gross Domestic Product per capita at time *t*
- **LFDI<sub>t</sub>** = Foreign Direct Investment at time *t*
- **EXR<sub>t</sub>** = Exchange Rate at time *t*
- **INF<sub>t</sub>** = Inflation at time *t*
- **LMBT<sub>t</sub>** = Mobile Banking Transactions at time *t*
- **LPOS<sub>t</sub>** = Number of Point-of-Sale transactions at time *t*
- **a<sub>0</sub>** = Constant term
- **a<sub>1</sub> – a<sub>5</sub>** = Coefficients of the independent variables
- **u** = Error term

The study employed secondary data covering the period 1990 to 2023, sourced primarily from the Central Bank of Nigeria (CBN) Statistical Bulletin. The collected data were analyzed using the multiple regression method to estimate the relationships between the dependent and independent variables.

This approach aligns with Alfaro's (2018) framework, which links foreign direct investment and macroeconomic indicators to economic performance through a log-linearized model. The log transformation ensures that the relationships among variables are expressed in relative terms, stabilizing variance and improving the reliability of parameter estimation.

## RESULTS AND DISCUSSION

### Augmented Dickey-Fuller (ADF) Unit Root Test

This was utilized to evaluate data stationarity. This showed that the data set was stationary over time and could be used for the study. The data set could be stationary at levels  $I(0)$  and/or first difference  $I(1)$ . It is expected that the Augmented Dickey-Fuller test statistics should be greater than 5% test critical values; it is by this that the variables are regarded as being stationary. Hence, Table 4.1 showed that all the variables were stationary at levels, as the value of the ADF test statistic was greater than 5% test critical values.

Table 1: Unit Root Test result

| Variable | ADF test statistics | 5% test critical values | Stationary | Remark |
|----------|---------------------|-------------------------|------------|--------|
| LFDI     | -4.672905           | -3.590496               | Levels     | $I(0)$ |
| LGDP_PC  | -5.484886           | -3.215267               | Levels     | $I(0)$ |
| EXR      | -7.545008           | -3.215267               | Levels     | $I(0)$ |
| INF      | -6.410407           | -3.215287               | Levels     | $I(0)$ |
| LMBT     | -3.814902           | -3.041946               | Levels     | $I(0)$ |
| LPOS     | -3.532655           | -3.041946               | Levels     | $I(0)$ |

Source: Author's Computation using Eviews 9 (2025)

### Multiple Regression Result

From Table 4.2, the R-squared was represented by 0.87 (87%), which revealed that all independent variables explained 87% of economic development. After aligning for degrees of freedom, the R-square became 0.74 (74%).

The Durbin-Watson test is used to test for autocorrelation; this implies that all the variables are not correlated. It is expected that Durbin Watson must be equal to 2 or approximately 2 to prove that there exists no autocorrelation among the variables; Table 4.2 revealed the Durbin Watson test to be 1.93

The probability value from the result must be at 5% significance level to show a variable's significance in impacting GDP\_pc.

From the probabilities given in Table 4.2, the probability value for the log of foreign direct investment (LFDI) was 0.0033, which proved it was statistically significant at 5% level of significance in impacting GDP per capita (economic development).

The probability value for inflation (INF) was 0.0120. This revealed its statistically significant nature at 5% level of significance in impacting economic development.

The probability value for the exchange rate (EXR) was 0.0434. This also revealed that it was statistically significant using 5% level of significance in impacting economic development.

The probability value for the log of mobile banking transaction (LMBT) was 0.0263. This also revealed that it was statistically significant using 5% level of significance in impacting economic development.

The probability value for the log of point-of-sale usage (LPOS) was 0.0000. This also revealed that it was statistically significant using 5% level of significance in impacting economic development.

The next step is to check if the significant relationship was negative or positive. The coefficient figures were examined to determine this

From Table 4.2, the coefficient of inflation (INF) was -0.579147 and carried a negative sign; this showed a negatively significant connection with GDP\_pc. Also, the coefficient of exchange rate (EXR) was -0.000261, which carried a negative sign. Hence, this showed that it was negatively

negative in impacting GDP\_pc. Finally, the coefficients of log of foreign direct investment (LFDI), log of mobile banking transaction (LMBT), and log of point-of-sale usage (LPOS) were 0.539550, and it showed a positive connection between FDI and GDP\_pc (economic development).

**Table 2: Multiple Regression Result**

| Variable                                                                   | Coefficient | Std. Error  | t-Statistic | Prob.    |
|----------------------------------------------------------------------------|-------------|-------------|-------------|----------|
| C                                                                          | -5.658700   | 6.777391    | -0.834938   | 0.4051   |
| LFDI                                                                       | 0.670073    | 0.224120    | 2.989788    | 0.0033   |
| INF                                                                        | -0.579147   | 0.227623    | -2.544326   | 0.0120   |
| EXR                                                                        | -0.000261   | 0.000148    | -1.761482   | 0.0434   |
| LMBT                                                                       | 0.337023    | 0.150162    | 2.244397    | 0.0263   |
| LPOS                                                                       | 2.368976    | 0.564771    | 4.194577    | 0.0000   |
| Adjusted R <sup>2</sup> = Durbin-Watson F-Statistics = Prob(F-statistic) = |             |             |             |          |
| R <sup>2</sup> = 0.87                                                      | 0.74        | Test = 1.93 | 5.159873    | 0.000078 |

Source: Author's Computation using Eviews 9 (2025)

### Post Estimation Technique Heteroskedasticity Test

This means that the error term has a constant variance. When this happens, it can make the regression estimators not be the Best Linear Unbiased Estimators (BLUE). If the probability value and probability chi-square figures are significant at 5% level of significance, the null hypothesis would be rejected, and this proves there existed heteroskedasticity in the adopted model.

From Table 4.3, the probability value of 0.1109 and the probability chi-square values of 0.1474 and 0.3632 are insignificant at 5% level of significance. Therefore, the null hypothesis was accepted that the result has no heteroskedasticity.

**Table 3: Breusch-Pagan-Godfrey Heteroskedasticity Test**

|                     |          |                     |        |
|---------------------|----------|---------------------|--------|
| F-statistic         | 2.138503 | Prob. F(6,22)       | 0.1109 |
| Obs*R-squared       | 2.849115 | Prob. Chi-Square(6) | 0.1474 |
| Scaled explained SS | 2.363194 | Prob. Chi-Square(6) | 0.3632 |

Source: Author's Computation using Eviews 9 (2025)

### Hypothesis Testing Hypothesis 1

H<sub>0</sub>: Foreign direct investments do not significantly impact the development of the Nigerian economy.

Based on the multiple regression result above, the null hypothesis was therefore rejected. Hence, there is a significant relationship between foreign direct investment and the development of the Nigerian economy.

### Hypothesis 2

H<sub>0</sub>: Exchange rates do not significantly impact Nigeria's economic development.

From Table 4.2, the exchange rate was significant in impacting economic development. Hence, the researcher also rejected the null hypothesis. This proves a significant relationship between the exchange rate and the development of the Nigerian economy.

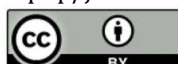
### Hypothesis 3

H<sub>0</sub>: Inflation does not significantly improve the Nigerian economic development.

From Table 4.2, the null hypothesis was further rejected as a significant relationship exists between inflation and the development of the Nigerian economy.

### Hypothesis 4

H<sub>0</sub>: Mobile banking transactions do not significantly impact Nigerian economic development.



From Table 4.2, the null hypothesis was further rejected as a significant relationship exists between mobile banking transactions and the development of the Nigerian economy.

### **Hypothesis 5**

H<sub>0</sub>: Point-of-sale usage does not significantly impact Nigerian economic development.

From Table 4.2, the null hypothesis was further rejected as a significant relationship exists between point-of-sale usage and the development of the Nigerian economy.

### **Discussion of Results**

The findings of this study indicate that foreign direct investment (FDI) plays a significant role in enhancing Nigeria's economic development. Increased foreign investment inflows stimulate economic activities, promote industrial growth, and strengthen overall national development. This result aligns with the findings of Adeniyi (2020), who asserted that FDI significantly boosts a nation's economic growth and long-term development prospects.

Furthermore, both inflation and the exchange rate were found to have statistically significant effects on Nigeria's economic development. This suggests that inflation remains a critical macroeconomic variable influencing price stability and economic growth. The Central Bank of Nigeria (CBN) employs monetary policy to manage inflationary trends due to their direct effect on the general price level. Similarly, the exchange rate impacts the value of a nation's currency relative to that of its trading partners, influencing import and export prices and overall investment dynamics. These findings are consistent with the results of Chete et al. (2024), who found that macroeconomic indicators such as inflation and exchange rate stability are essential for driving Nigeria's economic development.

Finally, the study revealed that financial technology (fintech)—specifically mobile banking transactions and point-of-sale (POS) usage—significantly contributes to Nigeria's economic growth. The utilization of fintech platforms facilitates faster and more efficient transactions, reducing waiting times in banking halls and promoting the CBN's cashless policy. These technological advancements have improved transaction efficiency, financial inclusion, and overall economic activity. This result is consistent with the findings of Isibor et al. (2018), who concluded that fintech innovations, particularly POS systems and mobile banking, significantly enhance financial sector performance and stimulate economic development in Nigeria.

### **CONCLUSION**

1. The government should provide economic stability in the country to attract foreign investors. They can do this by designing incentives for foreign investors while targeting high-tech industries
2. The government should ensure stable macroeconomic policies, like the exchange rate, as a motivating factor for the attraction of foreign direct investment into Nigeria.
3. Also, the government should aim to reduce inflation to a single digit, as this would boost economic development.
4. Government regulatory bodies should ensure that fintech products are used in financial transactions. This can be done by reducing the charges put in place for using such fintech products.
5. The government should invest in digital infrastructure and fintech platforms to boost fintech usage in international transactions.

### **RESEARCH LIMITATIONS**

This research was limited to Nigeria as a case study. This was due to the availability of data on all variables for Nigeria. Also, the study was limited in scope to cover only from 1990 to 2023, as the researcher could only access data for those years.

## AREAS FOR FURTHER RESEARCH

Other scholars could examine the same subject matter in other nations, like the sub-Saharan nations. Also, other studies could examine other variables, like foreign portfolio investment.

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