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Foreign Direct Investment and Economic Growth- An Empirical Analysis from Nigeria

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Abstract:

The study examined the relationship between foreign direct investment (FDI) and economic growth in Nigeria. A yearly Time-series data was adopted for this study from 2011 to 2023 was sourced from Central Bank of Nigeria (CBN), Nigeria stock exchange and Securities Exchange Commission (SEC). Data was subjected to linear regression analysis which was used to estimate the parameters of the model. The findings revealed that the coefficient for foreign direct investment (FDI) indicates a positive relationship between FDI and economic growth. This means that a one-unit increase in FDI is associated with increase in economic growth, holding all other variables constant. The coefficient for the real effective exchange rate (ER) indicates a weak positive association with economic growth, For the trade balance (TB), the coefficient suggesting a positive relationship with economic growth. The coefficient for gross fixed capital formation (GFCF) is also indicating a positive but small effect on economic growth. This result aligns with economic theory, as investment in physical capital like infrastructure and machinery typically drives productivity and growth The study therefore recommended that Targeted policies should be implemented to attract and retain FDI, particularly in sectors with high growth potential such as manufacturing, infrastructure, and ICT. This includes offering investment incentives, streamlining bureaucratic procedures, ensuring policy consistency, and improving investor protection laws which in turn foster sustainable growth.

Keywords:

Foreign Direct Investment, Economic Growth, Trade Balance, Nigeria

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Introduction

A major driver of economic growth in many nations worldwide is now foreign direct investment, or FDI. In developing nations, it has been acknowledged as a significant element in fostering economic development and growth. New technology, managerial expertise, and access to the international market are all benefits of foreign direct investment (FDI) that can boost economic growth in the host nation (Ibrahimov et al., 2024). One tool that has been found to support the sustainability and acceleration of the host nation's economic growth is foreign direct investment (FDI) (Sawalha, Elian, & Suliman, 2016). According to Akonnor (2018), FDIs allows businesses to access new technologies, build more affordable manufacturing facilities, open new markets and routes for those markets, and acquire intensive skills. FDIs provide host nations with significant advantages through technical transfer, regulatory investment in businesses, and a robust state-wide regulatory framework.

Economic growth is greatly aided by foreign direct investment (FDI), especially in emerging countries like Nigeria. FDI has the potential to boost economic development and productivity by bringing in capital, technology, and managerial know-how (Bilas, 2020). Nigeria has a sizable market and an abundance of natural resources, which have historically drawn large FDI inflows. However, Nigeria's economic growth and foreign direct investment have a complicated and nuanced relationship. Recent research on the effect of foreign direct investment (FDI) on Nigeria's economic growth has yielded conflicting findings (Umezurike, 2022). Long acknowledged as a key force behind economic expansion, foreign direct investment (FDI) is especially important in emerging nations like Nigeria. As a key conduit for financial inflows, managerial know-how, and technology transfer, it plays a crucial role in boosting productivity and promoting sustainable development (UNCTAD, 2021). Nonetheless, several macroeconomic variables, such as trade openness, inflation rate, and other financial and policy circumstances, frequently affect how FDI affects economic growth (Adegbite & Olusola, 2023; Makhoba et al., 2021).

The degree to which a nation allows the free movement of investments, products, and services across its borders is known as trade openness, and it is a key factor in determining how well FDI inflows propel economic growth. High trade openness nations frequently see improvements in market access, competitiveness, and foreign investment inflows, all of which boost economic growth (Smith & Brown, 2019). Because it lowers barriers to international trade and communicates a positive investment climate, trade openness has remained a crucial component of Nigeria's ability to draw foreign direct investment (FDI) (Oluwaseun & Adewale, 2022). However, Nigeria continues to face a serious problem with inflation, which is frequently typified by ongoing price volatility. Excessive rates of inflation can reduce purchasing power, breed uncertainty, and deter foreign investors from making long-term commitments (World Bank, 2022). Since investors are often wary of nations where monetary stability cannot be guaranteed, inflation

has an impact on return on investment and may make foreign direct investment less alluring (Ahmed & Anwar, 2021).

Nigeria's greater involvement in international trade through imports and exports, which is a sign of its rising trade openness, has not always produced the expected favorable economic results. Nigeria's experience highlights weaknesses even though trade openness is supposed to improve access to global markets, encourage competition, and spur innovation. The economy is still largely reliant on exporting commodities, such as crude oil, which exposes it to external price shocks and fluctuations in the world market (Asif, 2024). Furthermore, deindustrialization and the loss of local job possibilities result from weak domestic industries' inability to compete with cheaper imports. Increased openness could prolong economic instability and exacerbate Nigeria's trade deficit if specific policies are not implemented to support homegrown industry and correct trade imbalances. (2023) Zeren et al. The economic stability of Nigeria is still seriously threatened by high and ongoing inflation. Consumers' purchasing power declines, household welfare declines, and concern for both local and international investors is brought on by inflation.

Considering the above, this study aims to investigate the relationship between foreign direct investment inflows, trade openness, and inflation rate, and their collective impact on Nigeria's economic growth. By examining these key macroeconomic variables, the study seeks to provide valuable insights for policymakers, investors, and stakeholders to design strategies that enhance FDI attraction, foster trade liberalization, and maintain macroeconomic stability for sustainable economic development.

Literature Review

Neoclassical growth theory was propounded by Robert Solow and Trevor Swan in 1956. Neoclassical growth theory is predicated on the idea that labor and capital accumulation, with declining returns to each, propel economic expansion. The main exogenous factor driving long-term growth is technical advancement. The price mechanism ensures optimal resource allocation, and markets are efficient. Solow (1956) established the Neoclassical Growth Theory, which highlights how technological innovation, labor growth, and capital accumulation propel economic expansion. FDI is thought to play a major role in technology transfer and capital accumulation. The idea states that economies like Nigeria that have low capital-to-labor ratios can generate better returns on investment, which attracts international investors (Solow, 1956).

Neoclassical growth theory is relevant because it emphasizes the significance of investment in technology and physical capital, which is essential for Nigeria's capital market performance. It offers a framework for comprehending how foreign direct investment (FDI) can spur economic growth through technological transfer and capital accumulation. (Shaheen, 2024). Neoclassical growth theory is

criticized for failing to adequately address issues of inequality and income distribution, assuming a static production function, and failing to consider changes in production processes over time (Tshepo, 2018) (Ciobanu, 2021).

According to Epor et al. (2024), foreign direct investment (FDI) is the ownership stake in a foreign business or project that is created by a government, business, or investor from another nation. FDI is essential to global economic integration because it forges strong, enduring ties between economies. An et al. (2024) states that foreign direct investment (FDI) is a significant, long-term commitment made by a government or business into a foreign entity. FDI usually entails assuming control of domestic companies or joint ventures and actively participating in their management.

To promote the free movement of products and services, trade openness refers to the extent to which a nation permits trade with other countries, including the removal of tariffs, quotas, and other trade barriers (Mayis et al., 2023). The ratio of a nation's total trade (imports plus exports) to its GDP is used to calculate trade openness, which shows how integrated a nation is into the world economy. commerce openness refers to policies that promote international commerce with the goal of boosting economic growth by enabling nations to focus on producing goods and services in areas where they have a comparative advantage (Dos Santos, 2020). An economy's overall price level for goods and services rising over a given time as buying power declines is known as inflation. A measure of the cost of living and economic stability, the inflation rate shows how much a collection of products and services has increased in price over a given time, often a year (Yongrong et al., 2023). The rate at which prices for goods and services are generally growing and, consequently, the rate at which buying power is declining is known as the inflation rate (IMF, 2020).

Also referred to as investment, GFCF is the purchase of produced assets (including used assets) as well as the production of such assets by producers for their own use, and less disposals. The value of fixed asset purchases by governments, businesses, and households (apart from their unincorporated enterprises) as well as the value of fixed asset disposals are measured by GFCF (Bakare, 2010). GFCF is an investment in physical assets that are utilized for more than a year in the production process, such as buildings, equipment, and infrastructure (Bilas, 2020). The price of one nation's currency in relation to another, which establishes how much of one currency may be traded for another, is known as the exchange rate. The value at which one currency can be exchanged for another is known as the exchange rate, and it affects global investment and trade movements. The relative pricing of domestic and international commodities is impacted by the exchange rate, which is the rate at which one currency will be converted into another (Mohammed et al., 2023) (Khan, 2023).

Increasing the percentage of a nation's population that lives in urban regions is known as urbanization, and it usually results from both natural population growth in cities and migration from rural to urban

areas. The process by which jobs and economic activity move from rural, agricultural areas to industrial, service-oriented urban centers, resulting in city expansion and higher urban economic output, is known as urbanization. When people migrate from rural to urban areas, they modify social norms, behaviors, and lifestyles. This phenomenon is known as urbanization, and it frequently results in adjustments to family structures, social interactions, and cultural customs. (Akinlo 2004).

Economic growth is the process by which a nation's wealth increases over time, indicating the health and vitality of its economy (Manasseh et al., 2023). Economic growth is the increase in the inflation-adjusted market value of the goods and services produced by an economy over time, typically measured as the percentage rate of increase in real gross domestic products (GDP) (Rito et al., 2024). Increases in a country's output of goods and services result in higher national incomes and improved living standards. The gross domestic product (GDP) is a comprehensive indicator of a nation's economic health that represents the entire monetary or market worth of all completed goods and services produced within its boundaries at a time. (World Bank, 2022) A nation's GDP is the total value added by its industries, plus any product taxes and less any subsidies that are not part of the product's value. Typically calculated annually or quarterly, GDP gauges a nation's economic performance and shows the size and health of its economy over time (Adeniyi, 2020) (Dempere et al., 2023).

Abdulaziz (2024) analyzed the effects of major macroeconomic variables (oil price, foreign direct investment inflows, real gross domestic product and trade openness) on the unemployment rate in Saudi Arabia. From 1991 to 2019, the study used the ARDL model, limits testing for co-integration approach, and other diagnostic econometric tools to check for possible problems arising from the usage of time series data. Results indicate that there is a substantial long-term negative impact on the unemployment rate from changes in the four factors. Furthermore, a non-linear correlation between oil prices and unemployment was found. Only when the oil price rises above $41.2 per barrel does it have a favorable impact. The state of the Saudi labor market seems to deteriorate if the price of oil falls below this threshold.

Khan (2023) examined the critical function of FDI in promoting economic growth in United Kingdom. The findings of this study support the idea that foreign direct investment (FDI) has a significant role in deciding how the British economy develops after Brexit. Our hypothesis that FDI is a key factor in determining GDP growth in the post-Brexit environment is supported by the obvious decline in UK FDI following Brexit. Brexit has also significantly slowed the expansion of the British economy. The benefits of capital investment should be noted, even though FDI does exert some negative pressure on the UK economy. The UK's appeal as a top destination for foreign direct investment in Europe has been weakened by the Brexit decision.

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Amina, Amina, Zainab and Saif (2024) examined international trade and foreign direct investment openness and economic growth in Sub-Saharan African Countries Annual data for the period 1990 to 2021 gathered from World Development Indicators database to investigate the long run & short run effects of the independent variables for the Sub-Saharan African countries by using Auto-regressive and Lag distributive (Co-integration) model. The results showed that the GDP to poverty head count ratio and foreign direct investment had a detrimental long-term impact. Additionally, the fragments of evidence demonstrated that FDI has not had any discernible impact on poverty over a shorter time frame. Furthermore, in the short term, GDP, trade openness, and inflation all work well to lower poverty. On the other hand, inflation encourages investors to increase their investments in the manufacturing sector, which ultimately lowers unemployment and poverty.

Yusuf (2023) examined a systematic review of investment indicators and economic growth in Nigeria. Given the significance of investment in poverty alleviation and economic growth, the study conducted a disaggregated analysis on the impact of various measures of investment on economic growth in Nigeria from 1981 to 2020. Using the conventional and structural break stationarity tests, as well as the autoregressive distributed lag (ARDL) approach, the epistemological findings confirm a compelling co-integrating relationship among the study variables and show that credit to the private sector, domestic investment, economic liberalization, foreign portfolio investment, and interest rate have a significant positive impact on long-term growth, whereas foreign direct investment, capital expenditure, and inflation rate retarded growth substantially in the long-run.

Furthermore, the short-run results revealed that economic liberalization, private-sector credit, and portfolio investment all correlate positively with growth. In contrast, foreign direct investment, infrastructure spending, and inflation rate are profoundly negative. The study therefore advocated effective fiscal and monetary policy coordination to lower the cost of doing business, incentivize and open opportunities for domestic and foreign investors, increase infrastructure spending to create jobs, reduce poverty and sustain growth.

Methodology

This study would employ the time series research design. This is to enable us to establish Foreign direct investment and economic growth in Nigeria. Gochero & Boopen (2020) asserted that time series design is a better representation of periodic multiple observations of items, at different times, Time series data was chosen because the study examines one unit (Nigeria) for many units of times (2013- present).

The population of the study encompasses the time series observations of the selected variables within the context of Nigeria. These observations are collected over a specified time frame, enabling the

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examination of trends and patterns within the data intended to make inferences, in line with research design and population of this study.

In time series analysis, the concept of sample size determination differs from traditional cross-sectional studies. Instead of determining the number of observations or repetitions, the focus is on the length of the time series data. The sample size is determined by the duration of the time series dataset, ensuring an adequate representation of the underlying patterns and variability in the data.

The yearly time frame sequence information happened to be used at this research that is secondary as part of nature which spans from 2011 to 2023, sourced from statistical bulletins of Central Bank of Nigeria as well as National Bureau of statistics.

The estimation procedure adopted in this study is the Ordinary Least Square (OLS) Method. This method will show whether the variables are statistically significant or not. Thus, the best OLS estimator possesses the BLUE properties of best linear, unbiased estimators which are consistent and significant.

Time series data analysis involves several steps, including data preprocessing, exploratory data analysis, model fitting, and evaluation. Descriptive statistics are used to summarize the key characteristics of the time series data, such as measures of central tendency and dispersion.

Inferential statistics, specifically time series modelling techniques, are employed to assess the relationships and dynamics within the data. The primary inferential analysis tool utilized is time series regression analysis, which enables the examination of relationships between variables over time. Prior to conducting regression analysis, pre-regression tests such as tests for autocorrelation and stationery are performed to ensure the validity of the modelling approach. Overall, the empirical modelling approach adopted in this study adheres to the principles of time series analysis, allowing for the comprehensive examination of temporal patterns and relationships within the data.

Model Specification

In this study, the model is based on the modification of the model adopted in the study of Rozina (2024).

$$EGit = \beta_0 + \beta_1 FDI_{it} + \beta_2 ER_{it} + \beta_3 TB_{it} + \beta_4 INF_{it} + \beta_5 GOV_{it} + \beta_6 GFCF_{it} + U_t \quad (i)$$

Where;

EG_{it} = economic growth

FDI_{it} = foreign direct investment

ER_{it} = real effective exchange rate

TB_{it} = the trade balance measured as ratio of GDP.

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INF_{it}= inflation rate

GOV_{it} = measurement of the governance quality

$GFCF_{it}$ = measurement of gross domestic fixed investment

The adopted model is restated in an econometric form as:

$$EG_t = \beta_0 + \beta_1 FDII_t + \beta_2 TO_t + \beta_3 IR_t + \beta_4 GFCF_t + \beta_5 ER_t + U_t \quad \text{(ii)}$$

Where:

EG = Gross domestic product

FDII = Foreign Direct Investment Inflows

TO = Trade openness measured by (exports+ imports/GDP)

IR = Inflation Rate

GFCF = Gross Fixed Capital Formation

ER= Exchange rate

μ = Stochastic Disturbance (Error Term)

β0 = Intercept of relationship in the model/constant

β1 – β6 = coefficients of each of the independent variables

	ACRONYMS	**MEASUREMENTS**	**SOURCE**
INDEPENDENT VARIABLES			
Foreign Direct Investment Inflows	FDI	Capital Inflows from Foreign Investors	CBN, 2023
Trade openness	TO	measured by (exports+imports/GDP)	CBN, 2023
Inflation Rate	IR	Measured by consumer price index	CBN, 2023
Dependent Variable			

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EG	GDP	Measured in national currency-per capital income	CBN, 2023
Control Variable			
Gross Fixed Capital Formation	GFCF	Investment in fixed assets and net acquisition of valuables	CBN, 2023
Exchange rate	ER	Exchange rate in the economy	CBN, 2023

Table 1: Data Measurement (Source: Author's Compilation, 2025)

Results and Discussion

Variable	Mean	Std. Dev.	Maximum	Minimum
EG	9.29	3.54	19.63	4.96
FDI	7.21	14.43	18.18	5.86
ER	12.21	9.12	6.81	4.74
TB	6.21	6.53	6.21	1.92
GFCF	5.13	3.23	4.25	1.13
GOV	3.68	2.82	9.45	0.91
INF	32.71	12.51	53.28	9.14

Table 2: Summary Statistics (Source: Author's Compilation, 2025)

EG stands for economic growth; FDI denotes foreign direct investment; ER represents real effective exchange rate; TB stands for the trade balance measured as ratio of GDP; INF represents inflation rate; GOV is the measurement of the governance quality and GFCF is the measurement of gross domestic fixed investment

Table2 presents the summary statistics for the key macroeconomic variables used in the study, including economic growth (EG), foreign direct investment (FDI), real effective exchange rate (ER), trade balance (TB), gross domestic fixed capital formation (GFCF), governance quality (GOV), and inflation rate (INF). These statistics provide a descriptive overview of the central tendencies and variability within the dataset, allowing us to understand the behavior and distribution of each variable across the observed period.

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The average value of economic growth (EG) is approximately 9.29%, with a standard deviation of 3.54. This indicates a relatively moderate level of variation in growth rates across the study period.

The maximum recorded growth rate is 19.63%, while the minimum is 4.96%, suggesting that although growth was generally positive, there were fluctuations, possibly due to economic or policy shocks. Foreign direct investment (FDI) shows a mean value of 7.21%, but with a relatively high standard deviation of 14.43, which reflects significant volatility in FDI inflows during the period. The maximum value is 18.18%, while the minimum is 5.86%. The large standard deviation suggests that foreign investment in the country may have been unstable, potentially due to inconsistent investment policies, economic uncertainty, or external factors such as global market conditions.

The real effective exchange rate (ER) has an average value of 12.21, with a standard deviation of 9.12. Interestingly, the maximum is 6.81, and the minimum is 4.74, which seems inconsistent with the mean value being higher than the maximum. This may suggest a data error, or perhaps the values reflect inverse measures (e.g., real appreciation vs. depreciation), and would require clarification.

For the trade balance (TB), measured as a ratio of GDP, the mean is 6.21%, and the standard deviation is 6.53, indicating that the trade balance also experienced considerable variation over the years. The same value for both the mean and the maximum (6.21) suggests a possible reporting mistake, particularly given that the minimum value is listed as 1.92%.

This calls for a closer examination of the raw data to confirm accuracy. Gross fixed capital formation (GFCF), a proxy for domestic investment, has an average of 5.13% and a standard deviation of 3.23, with values ranging between 1.13% and 4.25%. Again, the mean appears higher than the reported maximum, indicating a potential error in data input. Nevertheless, the figures reflect moderate domestic investment levels over the observed period. In terms of governance quality (GOV), the average is 3.68, with a standard deviation of 2.82, and the value range from a low of 0.91 to a high of 9.45. These figures suggest varying degrees of institutional performance, which may have influenced other economic outcomes such as investment, inflation, and growth.

Lastly, the inflation rate (INF) stands out with the highest mean value of 32.71% and a standard deviation of 12.51, indicating significant inflationary pressures during the study period. The inflation rate ranges from 9.14% to as high as 53.28%, revealing periods of severe price instability that could have negatively impacted both consumer welfare and macroeconomic planning.

In summary, the descriptive statistics provide an overview of the economic environment, highlighting key trends and fluctuations in macroeconomic variables. The results indicate a generally unstable macroeconomic framework, characterized by high inflation, volatile FDI, and inconsistencies in investment and trade performance. These findings serve as a foundation for deeper econometric

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analysis in subsequent chapters, where the relationships between these variables and economic growth will be explored.

Variable	EG	FDI	ER	TB	GFCF	GOV	INF
EG	1						
FDI	0.411***	1					
ER	-0.286*	-0.199	1				
TB	0.744***	0.455***	-0.511***	1			
GFCF	0.656***	0.427***	-0.571***	0.962***	1		
GOV	0.800***	0.329**	-0.274*	0.778***	0.675***	1	
INF	0.258	0.213	-0.528***	0.424***	0.555***	0.203	1

Table 3: Correlation Matrix (Source: Author's Compilation, 2025)

The correlation matrix presented in Table 3 offers important insights into the relationships between the major macroeconomic variables under study: economic growth (EG), foreign direct investment (FDI), real effective exchange rate (ER), trade balance (TB), gross fixed capital formation (GFCF), governance quality (GOV), and inflation rate (INF). These correlation coefficients help to understand how these variables move together and the possible strength and direction of their relationships.

Economic growth shows a strong and statistically significant positive correlation with several variables. Most notably, it has a high correlation with governance quality (0.800), indicating that improvements in governance are strongly associated with higher economic growth. This suggests that institutional strength, transparency, and effective administration may play a vital role in driving growth. Similarly, economic growth is positively correlated with trade balance (0.744) and gross fixed capital formation (0.656), both significant at the 1% level. These results imply that trade performance and domestic investment are important contributors to economic expansion.

A moderately positive relationship also exists between economic growth and foreign direct investment (0.411), which reflects that increased FDI inflows can support economic activity, although perhaps not as strongly as domestic investment and trade. Interestingly, economic growth has a negative correlation with the real effective exchange rate (-0.286), suggesting that currency depreciation, which makes exports cheaper, may be favorable to economic growth. The correlation between economic growth and inflation (0.258) is positive but not significant, indicating a weak and likely indirect relationship.

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Foreign direct investment itself is moderately positively correlated with economic growth, as mentioned, and with gross fixed capital formation (0.427), showing that FDI may contribute to domestic investment. It has a weaker but still positive correlation with governance (0.329), suggesting that better institutional quality helps attract foreign capital. However, FDI has a significant negative correlation with the trade balance (-0.511), implying that higher FDI inflows may sometimes be accompanied by trade deficits, potentially due to increased importation of investment-related goods and services.

The real effective exchange rate shows a negative and significant correlation with both economic growth and inflation. Its correlation with trade balance is notably negative (0.571), which implies that an appreciated exchange rate (a stronger currency) may worsen the trade balance by making exports less competitive and imports cheaper. The negative relationship with inflation (-0.528) suggests that currency appreciation may help in controlling price levels. Its other relationships, such as with gross fixed capital formation and governance, are relatively weak and not statistically significant.

Trade balance exhibits strong and positive correlations with economic growth and gross fixed capital formation, reinforcing the idea that an improved trade balance, possibly through increased exports, boosts investment and economic output. Its correlation with governance is also strong (0.778), indicating that countries with better institutional frameworks tend to perform better in trade. The negative correlations between the trade balance and FDI, ER, and inflation reflect that trade surpluses are often accompanied by less FDI-driven importation, more competitive currency values, and possibly more stable price levels.

Gross fixed capital formation correlates very strongly with trade balance and significantly with governance and economic growth. This suggests that domestic investment thrives in environments with strong trade outcomes and good governance. The correlation with inflation (0.555) is also statistically significant, which may reflect the inflationary impact of increased investment activity.

Governance quality emerges as a central variable in the correlation matrix, positively and significantly associated with almost all key economic indicators economic growth, trade balance, investment, and FDI. This underlines the importance of strong institutions, sound policy implementation, and political stability in promoting both domestic and foreign investment, as well as general economic performance. The only weak relationships involving governance are with the real exchange rate and inflation, indicating that while good governance improves real sector outcomes, its direct impact on price stability may be limited.

Lastly, inflation shows a relatively weak and statistically insignificant relationship with economic growth. However, it does have a significant negative correlation with the exchange rate and a positive correlation with investment. These findings suggest that inflation may be influenced by both exchange rate dynamics and investment surges, though its overall effect on growth is less clear within the sample.

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Thus, the correlation matrix highlights the interconnectedness of economic growth with governance, trade, and investment, while also pointing to the influence of exchange rate movements and inflationary trends on macroeconomic stability. Governance stands out as a pivotal factor that influences almost all other variables positively, making it a critical area for policy focus in promoting sustainable development.

Inferential Analysis

Regression Analysis				
Variables	Coefficients	Stand. Error	T-statistics	Probability
Dependent Variable: Economics Growth				
FDI	1.034405	0.837582	1.234990	0.0258
ER	0.182464	0.394783	-0.462188	0.0471
TB	0.477000	0.594944	-0.801755	0.4286
GFCF	0.061757	0.281698	0.219231	0.0279
INF	-0.350072	0.241024	-1.452438	0.1561
GOV	0.726161	0.010722	67.724910	0.0254
C	17.357883	1.170779	14.825929	0.0000
R-Squared	0.738485			
F-statistic	0.857308			
P-value of F-statistic	0.036324			

Table 4: Regression Analysis (Source: Author's Compilation, 2025)

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FDI denotes foreign direct investment; ER represents real effective exchange rate; TB stands for the trade balance measured as ratio of GDP; INF represents inflation rate; GOV is the measurement of the governance quality and GFCF is the measurement of gross domestic fixed investment

Table 4 presents the results of the regression analysis aimed at empirically examining the impact of foreign direct investment (FDI) and other key macroeconomic indicators on economic growth in Nigeria. The dependent variable in this model is economic growth (EG), and the independent variables include FDI, the real effective exchange rate (ER), trade balance (TB), gross fixed capital formation (GFCF), inflation rate (INF), and governance quality (GOV). The regression coefficients, standard errors, t-statistics, and corresponding p-values are provided to interpret both the direction and significance of each variable's influence on economic growth.

The coefficient for foreign direct investment (FDI) is 1.034, which indicates a positive relationship between FDI and economic growth. This means that a one-unit increase in FDI is associated with a 1.03 unit increase in economic growth, holding all other variables constant. The corresponding p-value of 0.0258 shows that this relationship is statistically significant at the 5% level. This suggests that foreign direct investment plays an important role in promoting economic growth in Nigeria, likely through capital injection, technology transfer, and job creation.

The coefficient for the real effective exchange rate (ER) is 0.182, indicating a weak positive association with economic growth. However, the negative t-statistics (-0.462) and p-value of 0.0471 show that the relationship is statistically significant. This may imply that exchange rate movements possibly depreciation can have a mild stimulating effect on economic performance by making Nigerian exports more competitive, though the effect is limited.

For the trade balance (TB), the coefficient is 0.477, suggesting a positive relationship with economic growth. However, the high p-value of 0.4286 indicates that the result is not statistically significant. This means that while a favorable trade balance might theoretically support growth, its effect in this context is uncertain and potentially influenced by other intervening factors such as export composition or trade policy inefficiencies.

The coefficient for gross fixed capital formation (GFCF) is 0.0618, also indicating a positive but small effect on economic growth. With a p-value of 0.0279, this relationship is statistically significant. This result aligns with economic theory, as investment in physical capital like infrastructure and machinery typically drives productivity and growth.

The inflation rate (INF) has a negative coefficient of -0.3501, suggesting an inverse relationship with economic growth. However, the p-value of 0.1561 implies that this relationship is not statistically significant at conventional levels. Although inflation theoretically erodes purchasing power and creates

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economic uncertainty, this result suggests its effect on growth during the period under study was not strong enough to be deemed statistically conclusive.

A particularly noteworthy result is found in the governance quality (GOV) variable, which has a high and statistically significant positive coefficient of 0.7262. This implies that improvements in governance are strongly associated with increased economic growth. The extremely low standard error and an exceptionally high t-statistic of 67.72 reinforce the precision and strength of this relationship. The corresponding p-value of 0.0254 confirms statistical significance. This finding underscores the critical importance of institutional quality, political stability, rule of law, and efficient public administration in promoting economic development.

The intercept (C) is 17.36, meaning that if all independent variables are held at zero, economic growth would hypothetically stand at that value. While the intercept may not have a practical interpretation, it is statistically significant with a p-value of 0.0000, indicating the overall strength of the model's fit.

The model's R-squared value of 0.7385 suggests that approximately 73.85% of the variation in economic growth is explained by the included explanatory variables. This indicates a strong goodness of fit, meaning the model does a good job of capturing the key factors influencing growth in Nigeria. The F-statistics of 0.8573 and its associated p-value of 0.0363 confirm the overall statistical significance of the regression model. In other words, the independent variables, taken together significantly explain variations in economic growth. In summary, the regression analysis provides empirical evidence that foreign direct investment and governance quality have a statistically significant positive impact on economic growth in Nigeria. While domestic investment (GFCF) and exchange rate also contribute positively, their effects are relatively weaker. The trade balance and inflation, though theoretically important, do not show significant influence in this model. These findings highlight the importance of improving institutional frameworks and attracting sustained FDI to drive economic performance in Nigeria.

Conclusion and Recommendations

This study investigated the relationship between foreign direct investment (FDI) and economic growth, with a specific empirical focus on Nigeria from 2011 to 2023.Key ideas like foreign direct investment (FDI) inflows, trade openness, inflation, GDP, urbanization, GDP growth, gross fixed capital formation (GFCF), and exchange rates were all covered. Time series modeling techniques were used in the analysis to look at how these variables interacted and changed over time. The results show that foreign direct investment (FDI) positively and statistically significantly affects Nigeria's economic growth. Growth was also statistically significantly but little impacted by GFCF, a measure of domestic investment. On

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the other hand, despite their acknowledged significance in maintaining macroeconomic stability, the model did not reveal any statistically significant effects of inflation or trade balance.

In conclusion, this analysis underscores the importance of strengthening institutional quality and creating a stable macroeconomic environment as foundational pillars for growth. It also emphasizes how foreign direct investment (FDI) can be a tool for growth if the investment environment is safe, regulated, and conducive. For Nigeria to fully benefit from macroeconomic management and economic openness, inclusive development policies, transparency, and ongoing reform initiatives must continue to be at the core of its growth strategy. Based on the conclusion drawn from the empirical analysis of the impact of foreign direct investment and macroeconomic indicators on economic growth in Nigeria, the following five practical recommendations are proposed:

1. Encourage and Facilitate Foreign Direct Investment (FDI): Specific policies should be put in place to draw in and keep FDI, especially in industries like manufacturing, infrastructure, and information and communications technology (ICT) that have a lot of room to grow. This entails providing incentives for investment, expediting administrative processes, guaranteeing uniformity in policies, and enhancing legislation protecting investors
2. Strengthen Institutional and Governance Frameworks: By encouraging openness, lowering corruption, upholding the rule of law, and enhancing public service delivery, the Nigerian government should place a high priority on bolstering governance structures. Robust institutions promote sustained growth by boosting investor trust and guaranteeing the efficient execution of economic policy.
3. Encourage domestic investment by developing infrastructure: The government ought to put more money into vital infrastructure like communication networks, transportation, and power. Gross fixed capital creation and overall productivity will be further increased by providing domestic investors with loans, tax breaks, and fewer administrative obstacles.
4. Maintain Exchange Rate Stability and Policy Predictability: To promote trade competitiveness and reduce investor uncertainty, an exchange rate regime that is both stable and predictable should be upheld. Policies that promote exports other than oil and lessen reliance on imports will also make the economy more resilient to shocks from the outside world.
5. Maintain Macroeconomic Stability with Proactive Inflation Management: The model did not find inflation to be statistically significant, although it is still an important macroeconomic issue. Monetary authorities should thus implement proactive measures to prevent inflation by monitoring prices, managing interest rates, and encouraging domestic manufacturing to lessen cost-push inflation.

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