Journal of Commerce Management and Tourism Studies, Volume 2 Number 2 (Aug 2023), p. 116—125
e-issn 2964-9927 ©Yayasan Mitra Persada Nusantara
http://ympn.co.id/index.php/JCMTS

Effects of inflation on foreign direct investment in Nigeria

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Abstract - Inflation's effects on the volume of foreign direct investment (FDI) in Nigeria from 1995 to 2020 are examined in this study. In order to establish the relationship between the dependent variable (foreign direct investment) and the independent variables (inflation, real interest rate, and exchange rate), secondary data were gathered from the CBN Statistical Bulletin, Nigeria Bureau of Statistics and the World Bank Database. Johansen cointegration test was used to ascertain the long-term relationship between FDI and the independent variables, while the enhanced Dicker-Fuller test (ADF) was used to examine the data's time series property. It was decided to use the Vector Error Correction Model (VECM), and the error coefficient, which is correctly signed and significant, shows that the independent variables and FDI have a long-term relationship. The model's explanatory variables' effects on FDI were statistically insignificant. But as indicated by the probability of the F-statistic at the 5% level of significance, the overall regression was significant. The study suggests that efforts be made to use additional macroeconomic policies as a way to boos t foreign direct investment in the economy and that the government and monetary authorities should not solely rely on the tool and model for controlling inflation.

Keywords: inflation; foreign direct investment; exchange rates; interest rates

1. Introduction

It is obvious that no country can survive in isolation, which explains why many nations around the world have an open economy where investors from other parts of the world can choose to invest there. But there are elements that affect the nation of choice for foreign investors. These variables include the government's foreign investment policies, fiscal and monetary policies that affect interest rates and lending rates, exchange rate stability, national price stability, and government development initiatives (Adamu et al, 2012). Unfortunately, the Nigerian economy has struggled the most with inflation. Numerous studies and even empirical data have demonstrated in recent years how deeply the topic of inflation has impacted the nation's economy in a variety of ways. And recent years have demonstrated that more work needs to be done to offer a long-term solution to the damaging effects inflation has on the Nigerian economy.

Inflation is a long-term, sustained rise in the average price level of goods and services in an economy. The general price levels are rising steadily and persistently in this situation. It usually results from an increase in the amount of money credit that outpaces the supply of goods and services in the economy (Blanchard 2000). Because fewer goods and services can be exchanged for a given amount of money when the price of goods and services rises, this results in a decrease in the value of money. A commodity's price is simply the total sum of money required to buy it. The quality of goods

and services that a given amount of money can buy is referred to as the money's value. In Nigeria, the consumer price inflation rate fluctuated over the previous 61 years between -3.7% and 72.8%. The inflation rate for 2021 was calculated to be 17% (National Bureau of Statistics 2022).

The average annual rate of inflation from 1960 to 2021 was 16.1%. Overall, there was a 566,919.73 percent price increase. Beginning in 2022, a product that cost 100 naira in 1960 now costs 567,019.73 naira (CBN 2022). Nigeria's inflation rate has long outpaced that of other African and Sub-Saharan countries, peaking at more than 16 percent in 2017. This rate won't be going down in a real, meaningful way anytime soon (National Bureau of Statistics 2022). The bigger problem is its instability, though: An economy that is struggling will typically has an inflation rate that is erratic like this one, which will cause prices to fluctuate and lead to higher unemployment and poverty. Nigeria's economy, which is referred to as a "mixed economy," in which the state at least partially regulates the market economy, is not wholly in shambles.

The country's services sector, which includes the financial and telecommunications sectors, accounts for more than half of its GDP, and a sizable portion of its state revenues come from oil production. Banks must raise interest rates as a result of rising inflation rates in order to keep up with rising costs and maintain their profit margin. Higher interest rates frequently lead to rising unemployment as a result of declining investment. Price increases may occasionally trigger consumers' irrational consumption and spending, which may result in debt and impoverishment.

This is because, when savings is negatively affected, investment declines. Ezenwobi (2014) explained that hyperinflation is the extreme form of this, which is characterized by a sharp increase in prices that spirals out of control and results in widespread bankruptcies, a devaluation of the currency, and ultimately a currency reform. Perhaps, but only to a certain extent; for example, the monetary authority works to maintain an inflation rate of about 2% in order to keep the economy stable. However, as we get closer to deflation territory, things are starting to look gloomy again. The best course of action is to maintain a stable inflation rate in order to avoid uncertainty and rash decisions (Olayungbo & Ajuwon, 2015).

A nation's monetary and fiscal policies are literally built around economic growth. The company's business and industrial operations are influenced by this main objective. And recent studies and research have revealed that one of the key factors influencing economic growth is the amount of investment made in a country's economy (Ezenwobi, 2014).

Mankiw (2015) pointed out that Investment as the act of devoting resources with the expectation of realizing benefits in the future, typically dispersed over a predetermined period of time. It describes a type of economic activity where businesses, individuals, or even the government purchase assets in the hopes of generating equivalent returns over time. Investments are described by Ozekhome (2016) as changes to the capital stock over time. Investment implies the profitable future postponement of consumption. Additionally, higher consumption expectations can only be met if the resources invested produce consistent returns relative to the capital's opportunity cost. Production of capital goods is another definition of investment. Capital goods are products that are used in production processes rather than being consumed immediately.

The amount of FDI in Nigeria is among the best indicators of investment in that country. Foreign direct investment, according to Ozekhome (2016) is an investment made with the intention of acquiring a long-term managerial stake in a company (for example, 10% of the voting stock and at least 10% of the equity). In Africa's most populous nation, Nigeria, more foreign direct investments are attracted every year. The UNCTAD 2021 World Investment Report shows that Nigeria's inflow of foreign direct investments (FDI) increased by 3 points 5 percent from 2019 to 2020 despite the global economic crisis brought on by the COVID-19 pandemic. FDI flows increased significantly once more in 2021 (National Bureau of Statistics 2022).

The third-largest host economy for FDI in Africa, after Egypt and Ethiopia, is Nigeria. The country attracts a lot of investors because it is one of the continent's most promising growth poles for the oil, energy, construction, etc. industries. According to UNCTAD (2022) World Investment Report, FDI flows to Nigeria reached USD 4.8 billion in 2021, more than doubling from USD 2.3 billion in 2020 and significantly higher than the pre-pandemic level. Around 20.08 percent of the country's GDP, or USD 91.08 billion, was estimated to be the total stock of FDI in the same year. Agriculture,

telecommunications, manufacturing, real estate, and oil and gas are the primary industries bringing in FDI to Nigeria. Oil and gas is by far Nigeria's largest recipient of FDI. Nigeria and the UK have a long history of trade and investment, and the UK is still one of Nigeria's largest investors. China has increased its investment in Nigeria over the past few years, particularly in infrastructure initiatives like power plants, railroads, and roads.

Another significant foreign investor in Nigeria is the United States of America, particularly in the oil and gas sector. According to information provided by the Bank of Nigeria, the total amount of capital imported into the country in Q2 2022 was USD 10.5 billion, up from USD 875.76 million in the corresponding quarter of 2021.This is an increase of 75.34% (National Bureau Of Statistics 2022). Portfolio investments were the main source of capital importation, contributing 49.33 percent (USD 757.32 million), followed by other investments with 41.09 percent (USD 630.87 million), and foreign direct investment contributed 9.58 percent (USD 147.16 million) of the total capital imported. The next two biggest investors after the UK (50.8% of the total) were South Africa (8%) and Singapore (9%) (UNCTAD 2021).

One of the Central Bank of Nigeria's (CBN) main objectives is to guarantee rising and sustained economic growth with a stable low inflation rate. This is due to the fact that a high inflation rate would harm the country's economic performance. Furthermore, recent studies claim that the high rate of inflation has had a negative impact on the nation's investment levels and on the growth of the economy (Mankiw, 2015).

As a result of inflation, investor returns are reduced. A two million naira investment made today will therefore lose value over time due to inflation. Even if you consistently receive the same amount despite inflation, your purchasing power will decrease. Inflation, which happens after changes in the price of goods and services, reduces one's purchasing power (Olayungbo, & Ajuwon, 2015).

High inflation is indicated by a rise in the cost of almost everything, including essentials and other goods and services. Rising inflation typically has a negative impact on investments because it raises interest rates and the cost of the goods and services provided by businesses (Agwu, 2015). Investors lose value if inflation raises prices without increasing their value. Inflation jeopardizes the long-term purchasing power and higher returns that are the objectives of investing. Consumers pay more for less as an investment's value decreases because money loses value as inflation rises.

Businesses appear to be doing well when inflation is high because their revenue and earnings rise at the same rate as inflation. Although revenue and earnings have increased, there may not have actually been any value added to the company—inflation may have just been creating a facade of increased value. To develop and prosper, an economy needs Foreign Investment (Mankiw, 2015).

Theoretical and empirical studies by Dauda (2006) and Akinlo (2004) demonstrate the significance of FDI on economic growth and development in developing countries. Research over the years has shown that inflation has a negative impact on the quantity and quality of investment in an economy. The public and private sectors are affected, along with those looking for investment opportunities. Costs of information and transactions rise with inflation. Planning investments becomes challenging as a result of the uncertainty surrounding nominal values. Furthermore, when inflation is difficult to predict, people might be hesitant to sign contracts (Agwu, 2015).

A reduction in the total amount of credit made available to businesses by the banking industry could have an adverse effect on investment. Real rates of return on assets may fall in an environment of higher inflation. Savings will decrease as interest rates drop, while borrowing will increase. Currently available borrowers are more likely to be of lower quality and to default on their loans. Banks may ration credit in an effort to address these effects caused by the influx of riskier borrowers and the decreased real returns on their loans. In other words, if banks find it difficult to differentiate between good and bad borrowers, they may refuse to lend money or, at the very least, limit the amount they do. Lenders are unable to solve the problem by merely increasing nominal interest rates. Because low risk borrowers are leaving, the situation will only get worse. Additionally, it might not be possible to raise the nominal interest rate in nations with governmental regulations or interest rate ceilings (Ezenwobi, 2014). As a result, inflation has an impact on financial institutions' capacity to offer intermediation. Inflation will have a negative effect on investments and slow long-

term economic growth and activity. Therefore, research into how much inflation affects Foreign Direct Investment in Nigeria is required.

A long-term correlation between investment and inflation was looked for between 1929 and 1987 using time series techniques by McClain, Katherine, & Nichols, (1994). Their findings indicate a significant and positive relationship between investment and inflation. They also claimed that the income effect of inflation increased savings, the incomplete Fisher effect decreased the real cost of capital, and inflation-related bond price movements increased corporate real wealth and encouraged more real investment.

Inflation rates in 168 different countries were estimated by Khan & Senhadji in 2001. The analysis's findings showed that, above a certain threshold, inflation had little impact on financial depth and might even be advantageous. Below that, inflation made no difference. They discovered that inflation rates between 3 and 6 percent had a significant detrimental effect.

Li (2006) investigated the nonlinear relationship between investment and inflation between 1961 and 2004 in 27 developed and 90 developing nations. The findings show that the path by which inflation adversely and nonlinearly affects economic growth is investment efficiency. Even the amount of investment in those countries is significantly positively impacted when inflation is low to moderate, specifically when it is below 65 percent for developing countries and below 42 percent for developed countries. These conflicting findings imply that there is some uncertainty regarding the relationship between investment and inflation.

Ehimare (2011) sought to determine the effects of inflation, exchange rates, as well as the reciprocal influences between FDI and economic growth in Nigeria in his investigation into the effects of FDI and its connection to economic growth. The relationship between FDI inflows, exchange rates, and economic growth will be examined using a thirty year data set. The study showed that FDI, which is unaffected by inflation, follows economic growth brought on by trade opening, which resulted in the entry of some significant businesses, especially telecommunication businesses. However, his research concluded that FDI impacted by exchange rates.

Iqbal and Nawazi (2012) looked at the relationship between investment and inflation in Pakistan between 1961 and 2008. The outcome demonstrates that investments are a channel by which inflation affects economic growth. The results show a nonlinear relationship between these two variables, with just one threshold at 7%. It was discovered that inflation rates below the threshold had a positive impact on investment, while inflation rates above the threshold had a significant negative impact.

Ezenwobi (2014) used time series data spanning 25 years, from 1987 to 2011, obtained from the Central Bank of Nigeria annual reports and statistical bulletins for the nation, to study the impact of inflation on investment. The regression model with least squares (LS) was employed. The results of her study showed that inflation has a negative and non-significant impact on Nigeria's primary private sector credit, a positive and non-significant impact on the country's foreign exchange availability, a negative and non-significant impact on non-infrastructure investment, and a negative and significant impact on infrastructure investment. She suggested that in order to ensure steady growth in Nigeria, the monetary policy authorities should ensure that policies are pursued that will support maintaining a stable general price level.

Ozekhome's (2016) in his research, disclosed that high inflation rates and inflation volatility make it difficult for a country to attract investment (Gross Capital Formation). He achieves this using the Two Stage Least sq\.s algorithm and the GARCH framework. s formula. Quarterly time series data from Nigeria covering the years 1981–2013, along with a (2SLS) instrumental variable technique. To encourage the development of gross fixed capital and hasten economic growth, the study suggests that sound macroeconomic policies and institutional frameworks be implemented.

2. Method

Secondary data for the analysis were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin (2021), Nigeria Bureau of Statistics and the World Bank Database. Due to the amount of data and to guarantee accuracy in the calculations, Multiple Regression was used to analyze the collected data with the help of E-views. Researchers used the Unit Root Test, Johansen

Cointegration Test, Vector Error Correction Model, and Granger Causality Test on the data they had gathered in an effort to study the relationship between investment and inflation in Nigeria. Foreign Direct Investment is the dependent variable in this research project, and inflation, interest rates, and exchange rates are the independent variables.

Two models were chosen for this study in order to first determine how closely the dependent variable is related to the independent variables. Second, between the years 1995 and 2020, identify how the variables Granger cause each other. Comparable, the model for this research followed that of Ehimare's (2011) with little modifications on the method of analysis. This research work conducted Unit Root Test, Johansen Cointegration Test, Vector Error Correction Model, in order to establish how Inflation, Exchange rates and Interest rates affect Nigeria's foreign direct investment as well as the direction of the Causality using the Granger Causality Test.

For this study, we have the model as follows.

Model 1

But stated economically as follows

$$\mathbf{FDI = \beta_0 + \beta_1 INF + \beta_2 INT + \beta_3 EXC + \mu_1} \text{ ---------- (1)}$$

Where;

FDI = Foreign direct investment

INF = Inflation (Foreign Direct Investment)

INT = Interest rate (Real Interest Rate)

EXC = Exchange rate

β_0 = The intercept.

β_1= parameters to be estimated from the regression equation.

μ_1= random error term.

3. Results and Discussion

To determine whether a unit root existed in the data used for the empirical analysis, a unit root test was performed. The Augmented Dickey-Fuller (ADF) test was used, and the test results are shown below.

Table 1 Unit Test Root Result

	Level	Level	1st difference	1st difference		
Variable	ADF Value	5% CV	ADF Value	5% CV	Order of Integration	Remarks
FDI	-2.67146	-2.98623	-8.13301	-2.99188	I(1)	Stationary
INF	-2.1826	-2.98623	-4.62608	-2.99188	I(1)	Stationary
INT	-3.76292	-3.00486			I(0)	Stationary
EXR	-1.6889	-2.98623	-5.56507	-2.99188	I(1)	Stationary

Only one of the variables, INT, with an ADF value greater than its 0 point05 critical value of 3 point004861 (see Table 1 above), was stationary at level. In comparison to their respective 0.05 critical values of 2.986225, 2.986225, and 1.688903, FDI, INF, and EXR all have ADFs that are less than 2.671463, 2.186262, and 1.688903. which show that they are not stationary at level. However, at first difference, or order 1, I(1), with an ADF value of 8.133005, 4.626083, and 5.56507 and a 0.05 critical value of 2.99188, 2.99188, and 2.99188, FDI, INF, and EXC are stationary. We now conduct a cointegration test and measure the short-run speed of recovery from long-run disequilibrium because the variables are stationary.

Cointegration Test The table below presents empirical findings from the Johansen cointegration analysis. The Johansen's check begins with the null hypothesis that there is no cointegrating relation and is designed to determine whether or not a long-run relationship between the series exists. The existence of at least one cointegrating equation is checked. We then test whether there are zero, one, two, three, or four cointegrating equations given that the model contains four variables.

Table 2 Johansen Cointegration Test Result

Hypothesized No. of CE(s)	Eigen Value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.72167	56.01529	47.85613	0.0071
At most 1	0.551406	25.32057	29.79707	0.1503
At most 2	0.221568	6.081274	15.49471	0.6859
At most 3	0.002909	0.069914	3.841466	0.7914

In one of the equations, the trace statistics is greater than the critical value at a 5 percent level of significance, according to the cointegration results in the table above. This demonstrates the cointegration of the variables that were used to model the relationship between investment and inflation in Nigeria during the time of the study. They are precisely 56.01529>47.85613. The p-value is also lower than 0.05 (0.0071). Or, to put it another way, the null hypothesis that there is no cointegration between the variables is rejected. Therefore, at a 5 percent significance level, the test result demonstrates the existence of a long-run relationship in one cointegrating equation.

The normalized cointegrating coefficients for one co-integrating equation given by the long-run relationship is:

FDI = 0.047126INF + 0.107980INT - 0.006898EXR
(0.01541) (0.03436) (0.00524)

The dependent variable in this equation is FDI, and the INF, INT, and EXR coefficients are 0.047126, 0.107980, and -0.006898, respectively. The sign carried by the adjusted coefficient estimates of EXR is negative while that of INF and INT is positive. This suggests that while inflation and interest rates have a positive long-term relationship, foreign direct investment and the exchange rate have a negative one. This deviates from the a priori expectation of the relationship between foreign direct investment and inflation.

Vector Error Correction Model (VECM).

Table 3 Vector Error Correction Model (VECM) Test Result

	Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	ECM	-0.530551	0.098318	-5.396269	0
C(2)	FDI	-0.237685	0.173251	-1.371913	0.1869
C(3)	INF	0.010285	0.009553	1.07658	0.2959
C(4)	INT	0.215	0.013839	1.553649	0.1377
C(5)	EXR	-0.001287	0.009621	-0.133776	0.8951
C(6)	C	-0.258117	0.124073	-2.080371	0.0521

R Square = 0.715899 Adjusted R Square = 0.636982 F statistic = 9.071531 Prob(F-statistic) = 0.000191 Durbin Watson = 1.696979

In view of the presence of a cointegrating vector among the variables as evidenced by the cointegration tests, VECM will be conducted to check the speed of adjustment from short-run dynamics to their long-run static disposition:

$$\Delta FDI_{t-1} = -0.53055ECT_{t-1} - 0.237685FDI_{t-1} + 0.010255INF_{t-1} + 0.021500INT_{t-1} - 0.001287EXR_{t-1} - 0.258117$$

Inferring a negative value from the table, ECM (1) was consistent. It implies that the ECM may be able to correct any skewedness in the long-run equilibrium relationship between FDI and the explanatory variables.

The coefficient denotes a quick adjustment of 53.05% per year. Inferred from this is that after a short-run disequilibrium, 53.05% of the adjustment to the long-run occurs within a year. The above result indicates that the adjusted R^2 is 0.636982, indicating that the model accounts for about 64% of the total variations in FDI over the study period, with the remaining 36% being explained by other unaccounted-for variables not included in the model. The outcome likewise reveals that the F-statistic is equal to 9.071531. which is used to evaluate the study's model and determine whether the parameters are significantly correlated. The probability of the F-statistics value is 0.000191, and it indicates that the independent variable(s) and dependent variable(s) were statistically significant when the probability value was less than 0.05 level of significance.

The Durbin-Watson statistics indicate that there is no evidence of auto-correlation at 1.696979.
Pairwise Granger Causality Test

Table 4 Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistic	Prob.
INF does not Granger Cause FDI	24	0.42516	0.6597
FDI does not Granger Cause INF		1.97454	0.1663
INT does not Granger Cause FDI	24	1.29847	0.2961
FDI does not Granger Cause INT		6.36899	0.0076
INT does not Granger Cause INF	24	0.79105	0.4677
INF does not Granger Cause EXR		0.64776	0.5344
INT does not Granger Cause INF	24	1.64580	0.2192
INF does not Granger Cause INT		1.10769	0.3507
EXR does not Granger Cause INF	24	0.15535	0.8572
INF does not Granger Cause EXR		1.27879	0.3013
EXR does not Granger Cause INT	24	1.37702	0.2764
INT does not Granger Cause EXR		1.57639	0.2326

The findings showed that foreign direct investment is not caused by inflation, with the null hypothesis being accepted at a 5 percent significance level (high probability value 0.6597).
The outcomes additionally demonstrated that Foreign Direct Investment does not generally cause inflation; the null hypothesis is accepted at a 5 percent significance level, as shown by the high probability value 0.1663.

This result suggests that there is no link between foreign direct investment and inflation. The findings showed that interest rates do not increase as a direct result of foreign direct investment; the null hypothesis is accepted at a 5 percent significance level, as shown by the high probability value 0.2961.

The results showed that Foreign Direct Investment increases Interest rates; the null hypothesis is rejected at a 5 percent significance level, as shown by the low probability value 0.0076.
Therefore, this result suggests that Foreign Direct Investment and Interest Rate are causally related in a one-way fashion.

The findings showed that the exchange rate does not affect foreign direct investment; the null hypothesis is accepted at a 5 percent significance level, as shown by the high probability value 0.4677.
The findings showed that Foreign Direct Investment does not cause changes in exchange rates; at a 5 percent level of significance, the null hypothesis is accepted, as shown by the high probability value of 0.5344. This outcome therefore suggests that there is no causal relationship between foreign direct investment and exchange rate.

The findings demonstrated that an increase in interest rates does not lead to an increase in inflation; the null hypothesis is accepted at a 5 percent level of significance, as shown by the high probability value of 0.2192.

The findings showed that there is no correlation between inflation rate and interest rates; at a 5 percent level of significance, the null hypothesis is accepted, as shown by the high probability value 0.3507. This result therefore suggests that there is no causal relationship between inflation and interest rates. The results also showed that inflation rate is not caused by exchange rate; the null hypothesis is accepted at a 5 percent significance level, as shown by the high probability value 0.8572.

The findings showed that inflation rate does not generally cause exchange rate; the null hypothesis is accepted at a 5 percent significance level, as shown by the high probability value 0.3013. Accordingly, this result excludes the possibility of an exchange rate–inflation causal chain. The findings showed that the relationship between the interest rate and the exchange rate is not causal; the null hypothesis is accepted at a level of significance of 5%, as shown by the high probability value of 0.2764. The findings showed that interest rates do not directly affect exchange rates; at a 5 percent level of significance, the null hypothesis is accepted, as shown by the high probability value of 0.2326. This result therefore suggests that there is no causal relationship between the interest rate and the exchange rate.

Journal of Commerce Management and Tourism Studies, Volume 2 Number 2 (Aug 2023), p. 116—125
e-issn 2964-9927 ©Yayasan Mitra Persada Nusantara
http://ympn.co.id/index.php/JCMTS

$$\Delta FDI_{t-1} = -0.53055ECTt_{-1} - 0.237685FDI_{t-1} + 0.010255INF_{t-1} + 0.021500INT_{t-1} - 0.001287EXR_{t-1} - 0.258117$$

As was previously stated, the estimated regression equation used to analyze inflation and foreign direct investment in Nigeria is shown in the equation above. According to the equation, foreign direct investment has a positive impact on inflation with a coefficient of 0.010255, a positive impact on interest rates with a coefficient of 0.021500, and a negative impact on exchange rates with a coefficient of 0.001287. This implies that Foreign Direct Investment will change by 0.010255 units if a unit change in inflation occurs as a result of monetary policies and fiscal measures implemented by the government and other financial authorities/intermediaries. Foreign Direct Investment will change by 0.021500 units if the interest rate changes by a unit as a result of direct policies affecting the money supply in the economy. Foreign Direct Investment will change by 0.001287 if the exchange rate changes as a result of government policies on the public debt, terms of trade, market openness, and balance of payments.

According to the findings, the coefficient of inflation, interest rate, and exchange rate are all statistically insignificant, as shown by their probability values of 0.2959, 0.1377, and 0.8951, respectively. This implies that the government cannot rely on policies and measures that checkmate inflation, interest rates, or exchange rates alone as a measure to boost foreign direct investment. This is due to the fact that, despite having a long-term relationship with foreign direct investment, they are statistically unimportant in predicting changes in foreign direct investment.

The F-statistics of 9.071531—a measurement of the combined significance of the explanatory variables—shows that the explanatory variables are statistically significant at the 0.0191 percent level, as shown by the corresponding probability value of 0.000191. This suggests that the level of foreign direct investment in the economy will significantly change by 0.0191 percent if policies and measures are put in place to affect the inflation rate, interest rate, and exchange rate together.

The analysis also reveals that the adjusted R2, which gauges the model's explanatory power, is predicted to be 0.636982. This indicates that the explanatory variables account for about 63 point 70 percent of the systematic variation in FDI, while the remaining 36 point 30 percent is attributed to other variables outside the scope of the model. In order to analyze Nigeria's inflation and foreign direct investment, the overall model has strong statistical significance. This has the implication that if the rate of inflation changes, so will the amount of foreign direct investment in Nigeria because inflation only slightly influences this type of investment. There is no evidence of autocorrelation, according to the 1.696979 Durbin-Watson statistics. Only one of the variables, INT, with an ADF value greater than its 0 point05 critical value of 3 point004861, was found to be stationary at level according to the unit root test. The ADFs for Foreign Direct Investment, Inflation Rates, and Exchange Rates are each less than their corresponding 0.05 critical values of 2.986225, 2.986225, and 1.688903, respectively, which show that they are not level and stationary. With an ADF value of 8.133005, 4.626083, and 5.56507 and a 0.05 critical value of 2.99188, 2.99188, and 2.99188, Foreign Direct Investment, Inflation Rates, and Exchange Rates are stationary at first difference, or order 1, I(1). Causation analysis showed that there is no relationship between Inflation rates and Foreign Direct Investment, Exchange Rates and Foreign Direct Investment, Interest Rates and Inflation Rates, Exchange Rates and Inflation rates, or Exchange rates and Interest Rates. A one-way causal relationship exists between Interest Rates and Foreign Direct Investment.

4. Conclusion

This study has shown how the rate of inflation and the interest rates had a positive long-term effect on the amount of foreign direct investment in the country. In order to support foreign direct investment in the economy, it is necessary to maintain inflation at a healthy level. Fiscal and monetary policies should be implemented in order to avoid a high inflation rate that could scare away investors from the economy. Policies that affect the equilibrium of the money supply and interest rates should be implemented to ensure that interest rates can have a favorable impact on the amount of foreign direct investment in the economy.

The exchange rate had a negative effect on the amount of foreign direct investment in the country over time. As a result, it's important to take precautions to prevent an increase in the exchange rate that would harm foreign direct investment in the economy.

The government and monetary authorities shouldn't only rely on this tool and model for controlling inflation in their efforts to increase foreign direct investment. They should implement additional macroeconomic measures to support this model. The federal government, the Central Bank of Nigeria, and other economic stakeholders are advised to create efficient monetary policies that would lower and effectively control inflation. This can be accomplished by taking one or more of the following actions: The federal government must create sensible and useful fiscal and monetary policies that would support the economy. The government should use inflation targeting to prevent overprinting money through price stabilization. The government should also allow free markets and foreign direct investment inflows. The investment climate in Nigeria should be supported by the government. They can do this by putting in place the infrastructure required to entice reputable investors, such as reliable energy sources, transportation facilities, skilled labor, etc. The federal government should develop regulatory policies as well in order to balance the exchange rate system and make it advantageous for the naira. To control borrowing and investment interest rates, the CBN and other financial regulators should implement fiscal policies.

References

Adamu, P.A., Ighodaro, C.A. & Iyoha, M.A. (2012). Trade, foreign direct investment and economic growth: Evidence from the countries of the West African Monetary Zone. *The West African Economic Review*, 1(2), 10-31.

Agrawal, P. (2001). "Interest Rates and Investment in Asia: an Empirical Evaluation of Various Financial Liberalization Hypotheses", *Journal of Business*, 6(1)

Agwu, C. (2015). Determinant of investment in Nigeria: an econometric analysis. *Journal for Studies in Management and Planning, 3(4)*

Akinlo, A. (2004). Foreign direct investment and growth in Nigeria: an empirical investigation. *Journal of Policy Modeling, 26 (6)*

Blanchard L. and G. Kiyotaki. (1987). "Inflation Targeting as a Tool for Price Stability", *International Journal of Business Finance*, 5(1),

Caroline, B. (2019). *Interest rate.* Retrieved from https://www.investopedia.com/terms/i/interestrate.asp

Central Bank of Nigeria, (2011). Inflation Forecasting Models for Nigeria. *Macroeconomic Modeling Division Research Department, CBN,* Abuja. Occasional Paper No. 36.

CBN. (2022). Central Bank of Nigeria Statistical Bulletin, *Central Bank of Nigeria*

Dauda, R. O. S. (2007). The impact of FDI on Nigeria's economic growth: trade policy matters. *Journal of Business and Policy Research 3(2).*

Diptimai K. (2019). *Top 3 Theories of Investment – Explained.* Retrieved from http://www.economicsdiscussion.net/investment/theories-investment/top-3-theories-of-investment-discussed/14585

Dunning J. and A. Rugman. (1985). The Influence of Hymer's Dissertation on the Theory of Foreign Direct Investment. *America Economic Review, 75(2).*

Ehimare, A. O. (2011). The Effects of Exchange Rate and Inflation on Foreign Direct Investment and its Relationship with Economic Growth in Nigeria. *Economics and Applied Informatics, 1(2)*

Ezenwobi, C. (2014). Effects of inflation on investment in Nigeria. *University of Nigeria, Nsukka,* 2014.

Iqbal, N. & Nawazi, S. (2012). Inflation and economic growth nexus. Evidence from Pakistan. *Journal of Development Economics, 3(5).*

James, C. (2019). *Foreign direct investment.* Retrieved from https://www.investopedia.com/terms/f/fdi.asp

Jim, C. (2019). *Real Interest Rate.* Retrieved from https://www.investopedia.com/terms/r/realinterestrate.asp

Khan & Senhadji. (2001). Threshold effect in the relationship between inflation and growth. *IMF Staff Paper 48(1)*

Kimberley, A. (2019). *Types of Inflation: The Four Most Critical Plus Nine More.* Retrieved from https://www.thebalance.com/types-of-inflation-4-different-types-plus-more-330610

Li, M. (2006). *Inflation and economic growth: Threshold effects and transmission mechanisms, University of Alberta*, Working papers.

Mankiw, N. G. (2015). *Macroeconomics: 9th Edition*. Worth Publishers.

McClain, Katherine T. & Nichols, L. M. (1994). On the relationship between investment and inflation: some results from cointegration, causation, and sign tests. *Journal of Finance and Investment*, 19 (1).

National Bureau of Statistics. (2011). *The review of the Nigerian economy, Federal Office of Statistics*, Abuja, Nigeria.

National Bureau of Statistics. (2012). *The review of the Nigerian economy, Federal Office of Statistics,* Abuja, Nigeria.
National Bureau of Statistics. (2022). *The review of the Nigerian economy, Federal Office of Statistics,* Abuja, Nigeria.
Ndibe, B. C., Ojiula, U.B. & Asalu, E. (2021). Is foreign direct investment the way forward for manufacturing sector renaissance in Nigeria? *International Journal of Business, Economics and Management, 8(4).*
Nitisha. (2019). *Top 3 Theories of Inflation (With Diagram).* Retrieved from http://www.economicsdiscussion.net/inflation/top-3-theories-of-inflation-with-diagram/4071
Olayungbo, D.O. & Ajuwon, K.T. (2015). Dollarization, inflation and interest rates in Nigeria. *CBN Journal of Applied Statistics, 6(1).*
Ozekhome, H.O. (2016). Trade openness, investment and economic growth: Evidence from ECOWAS countries. *West African Economic and Financial Review*, 14(1).
Ozekhome, H.O. (2016). Interest rate volatility, inflation instability and gross capital formation: Evidence from Nigeria. *CBN Journal of Applied Statistics*.
Shraddha, B. (2018). *Inflation- Meaning and types.* Retrieved from https://www.businesstopia.net/economics/macro/inflation-meaning-types
Smriti, Chand. (2019). *Main Types of Foreign Exchange Rates.* Retrieved from http://www.yourarticlelibrary.com/macro-economics/balance-of-payment/main-types-of-foreign-exchange-rates/30435
Smriti, Chand. (2019). *Inflation: Meaning, Causes and Effects of Inflation.* Retrieved from http://www.yourarticlelibrary.com/inflation/inflation-meaning-causes-and-effects-effects-of-inflation/29293
UNCTAD. (2021). United Nations Conference on Trade and Development. *UNCTAD report 2021*
UNCTAD. (2022). United Nations Conference on Trade and Development. *UNCTAD report 2022*
WB. (2022). The World Bank Data. *World Bank*