FOREIGN DIRECT INVESTMENT AND WELFARE IN NIGERIA: EVIDENCE FROM ARDL MODEL

OKEREKE, IKE GODSLOVE
PhD candidate, Economics Department
Email: okerekeikeg@gmail.com, Phone: +234(0)8035384874
Babcock University, Ilishan Remo, Ogun State

DUNIYA, THEOPHILUS GEORGE
PhD candidate, Economics Department
Email: softheo84@gmail.com, Phone: +234(0)9057529120
Babcock University, Ilishan Remo, Ogun State

LATEEF, ADEREMI JELILI
PhD candidate, Economics Department
Email: lateef0091@pg.babcock.edu.ng, Phone: +234(0)8034753910
Babcock University, Ilishan Remo, Ogun State

ABSTRACT

This study examined the effect of foreign direct investment on wellbeing in Nigeria from 1986 to 2021. Human development index was used to measure welfare while FDI inflows were used to measure foreign direct investment. Exchange rate (EXCH), inflation rate (INF), domestic investment (lnDI), trade openness (TOP), and corona virus (COVID19) were used as the study's control variables. To test for stationarity, a unit root test was performed using Augmented Dickey Fuller (ADF) and Philip Perron. According to the results of the unit root test, the exchange rate and trade openness were stationary at first levels, whereas the human development index, foreign direct investment inflows, the inflation rate, and domestic investment were stationary at levels. In order to examine for a long-term partnership, the ARDL bound test was used. According to the study, there is no significant long-term relationship between welfare and foreign direct investment. The outcome of co-integration and long-term analysis demonstrates that inflation and exchange rates have a negative, significant impact on the human development index. Covid19 and trade openness have insignificant effect on the human development index. Inflows of foreign direct investment and domestic investment have significant positive impact on the human development index. According to the research, Nigeria has to take the battle against corruption seriously. The amount to which foreign direct investment is misappropriated for personal gain would be constrained if corruption were to be reduced.

Key Words: Exchange Rate, FDI, Human Development Index, Inflation Rate, Welfare.

JEL Classification**:** C32, E22, F21, I131

1. INTRODUCTION

One way to address underdevelopment in developing nations is through foreign direct investment. Nigeria and other developing nations work extremely hard to ensure that their nations prosper, yet their efforts have not been successful. It is presumable that these governments ignore how foreign direct investment affects economic growth. Their economic well-being is below average as a result of their disregard for foreign direct investment.

Foreign direct investment, in the opinion of Olowe (2022), El-Rasheed and Abdullahi (2022), and Akanegbu and Chizea (2017), stimulates more domestic investment while simultaneously giving foreign cash. Additionally, they argued that foreign direct investment boosts economic activity by creating jobs, revenue, and other benefits. According to this, Adegbite and Ayadi (2010) hypothesized that FDI bridges the domestic revenue-generation gap in a developing economy since governments in most developing nations don't appear to be able to create enough money to cover their expenditure requirements. Externalities and the adoption of foreign technologies are two further advantages.

An individual or business making investments abroad is said to be engaging in foreign direct investment (Emmanuel, 2016). This includes starting a brand-new company, buying out rival businesses, or forming a joint venture. It offers market channels, talents, new markets, new technologies, products, and production facilities to the investor investing in other nations. Foreign direct investment provides the nation with additional resources or income that it needs to accomplish growth and development (Jugurnath, Chuckun & Fauzel 2016). This suggests that foreign direct investment benefits the investor as well as the host nation.

It is impossible to overstate the significance of foreign direct investment. It results in the availability of new goods, technologies, and talents, as well as a highly competitive corporate climate (Hussaini, & Kabuga 2016). A closed economy does not exist anywhere in the world. Foreign direct investment is welcomed by the economy, especially in developing nations like Nigeria. As a result, the economy of Nigeria supports policies that affect the flow of foreign direct investment. This is a result of FDI's strong positive spillover effects, which help the economy grow and boost her export sales (Khuda, Sobia, Muhammad & Najid 2017).

Nigeria is a well-known economy in Africa in terms of foreign direct investment, according to the UNCATD (2019) study. Nigeria is one of the growing economies that promotes investments in both human capital and material resources. Nigeria is one of the top investors in the energy, oil, construction, and other industries in Africa.
According to the UNCATD study, foreign direct investment inflows into Nigeria decreased from $1.9 billion in 2017 to $1.9 billion in 2018. This represents a 25.1% contribution to GDP. The United States, United Kingdom, Netherlands, and France are nations that consistently invest in Nigeria. The nation has recently aimed to diversify its economy away from oil. Nigeria therefore plans to develop a competitive manufacturing industry that would advance global
There is conflicting empirical evidence regarding how and to what extent Foreign Direct Investment (FDI) affects welfare in Nigeria, making it difficult to assess if FDI improves on welfare in Nigeria. Economists are very interested in conducting research on the implications of FDI inflow differentials and welfare discrepancy among emerging nations. Despite numerous

studies looking at the connection between FDI and wellbeing, the impact of FDI on welfare in Nigeria is still a contentious question. The varied variables, time frame, estimating approaches, and various measuring techniques used in these studies may be to blame for these discrepancies in conclusions (Easterly, 2003). It is also useful to understand why Nigeria hasn't been successful in luring sizable FDI over the years.

2. LITERATURE REVIEW
2.1 Conceptual Review
2.1.1 Concept of Foreign Direct Investment

Foreign direct investment is one of the most contentious issues in the theory of economic development. Many researchers have offered many theories and empirical data on foreign direct investment (Oseghale & Amonkhienan, 1987; Odozi, 1995; Oyinlola 1995; & Adelegan, 2000), but the issue is still open, necessitating further discussion and empirical investigation. An essential idea in economics is the relationship between welfare and foreign direct investment.

An important element of global economic integration is foreign direct investment (FDI). FDI forges enduring, direct, and stable connections between many economies. It makes it possible for knowledge and technology to be shared between nations, and it also helps the host economy to market its goods more aggressively abroad. Another way to finance investments is through foreign direct investment, which may likewise be a key driver of development in the correct policy environments (OECD Factbook, 2012). The phrase "foreign direct investment" refers to cross-border investments made by a resident of one economy with the intention of acquiring a long-term stake in a business operating in another. Foreign direct investment, according to Tadaro (1999), refers to investments made by multinational businesses with headquarters in industrialized countries. Amadi (2002) (2002)

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2.1.2 Welfare
Welfare refers to a variety of government initiatives that offer support—material or financial—to people or groups that are unable to help themselves. Since welfare's primary audience is the poor, it is utilized to close the gap between the rich and the poor. The government funds welfare programs with tax payer money. At times of need, it offers relief to those people. Welfare includes pursuit of education and a higher level of living as goals.

By the provision of food stamps, healthcare, unemployment benefits, child care aid, and housing support, welfare services help individuals or groups of individuals. The size of the family unit, the severity of any disabilities, and the current income levels are used to establish eligibility for welfare programs. Also, the state of the economy encourages the government to offer welfare services.

Poor social services in Nigeria are a result of both the general lack of development and the severity of inequality in the nation. Since independence, population growth rate in Nigeria has been on the high side, and there has been a major drop in income and urbanization. In addition, a high amount of corruption has caused many Nigerians to experience malnutrition, bad health, and poverty. According to a recent World Bank research, whereas there were 89 million poor people in Nigeria in the year 2020, there were 95.1 million in the following year, meaning that the population of the poor increased by 6.1 million, or 6.7%, between 2020 and 2021.

Nigeria's social security system is inadequate in that the vast majority of elderly people are not covered. There are fewer senior persons per family unit in urban settings due to the younger age of urban migrants. There is evidence that, given the hard conditions of shortage in metropolitan areas, the traditional practice of caring for parents is starting to deteriorate. Elderly individuals in rural Nigeria are still typically looked after by their children, spouses, grandchildren, siblings, or even ex-spouses. However, because of the uncertainty of this practice, elderly urban residents whose families had abandoned them or moved away could potentially face serious difficulties (Okpukpara, Chine, Uguru, et al 2006).

Traditionally, extended kinship groups and local authorities handle issues involving spouses or children in families. This approach is occasionally still being used in rural regions. Social services for families in dispute, foster children, runaway or abandoned children, and youngsters in the care of religious teachers are either nonexistent or infrequent in metropolitan areas. Nigeria, like many other emerging nations, has numerous social welfare issues that require immediate attention. There were encouraging signs of the awareness and public debate necessary for change and an adaptive response to its social problems, including the existence of a relatively free press and a history of self-criticism in journalism, the social sciences, the arts, and by religious and political leaders (Miller, 2007).

The Nigerian government recently asserted that between 2019 and 2022, 10.5 million Nigerians would no longer be considered poor. They further claimed that since 2015, the Bank of Industry had produced 9 million new jobs in Nigeria. Several programs have been developed, according to the Central Bank of Nigeria's report, to create jobs and combat the country's on-going poverty. In practice, though, these plans were a failure since so many Nigerians continue to live in poverty and because the country's welfare system has generally declined. A low income, a high rate of inflation, a high rate of currency fluctuation, a high rate of unemployment, and a high level of insecurity all contribute to a generally low standard of life.

The Nigerian government should make significant investments in education, particularly "The girl child education," according to a 2022 World Economic Forum recommendation. Prioritize the health and wellbeing of the populace, expand economic prospects, and adopt technology to boost the nation's total economic productivity and citizens' opportunities (Dolgoff & Stolnik, 1997).

2.2 THEORETICAL REVIEW

Kaldor-Hicks Efficiency (1939)

In the year 1939, Nicholas Kaldor and John Hicks advanced this welfare theory. According to this theory, resources should be distributed so that there would be Pareto improvement. This suggests resource reallocation in a way that, at the very least, benefits everyone involved and doesn't benefit anyone less. This theory presupposes that resources are distributed fairly within an economy. The theory contends that people of an economy should all have the same level of welfare and living conditions. The argument went on to argue that if those who benefit from the conclusion would make up for those who suffer losses, then the outcome will be an improvement. When it occurs, Pareto improving outcome has been achieved (Kaldor. 1939).

In general, Kaldor-Hicks efficiency is used to evaluate prospective enhancements rather than efficiency objectives. The theory is employed to determine if a project or government initiative would lead to Pareto efficiency. It is common knowledge that different economic activities benefit some people more than others. Hence, Kaldo-Hicks is used to examine the results of paying the losers by the winners in order to achieve Pareto efficiency. According to their theory, a policy or activity causes an economy to reach Pareto efficiency when the maximum amount that winners are willing to pay losers exceeds the minimum amount that losers are willing to take. The Kaldor-Hicks theory is frequently used in game theory fields including managerial economics and welfare economics. The standard is utilized because it is thought that it is acceptable for society as a whole to leave some people worse off in exchange for more benefits for others (Hicks, 1939).

2.3 EMPIRICAL REVIEW

The majority of research have focused on foreign direct investment and Nigeria's economic expansion. The relationship between foreign direct investment and economic growth in Nigeria was examined by El-Rasheed and Abdullahi in 2022. GDP was used to gauge economic expansion, whereas FDI, total labor force, gross fixed capital formation, and exchange rate were used to gauge foreign direct investment (RER). Time series data from 1990 to 2020 were used, and the estimation method was the Auto-Regressive Distributed Lag (ARDL) model. The results of the bound test indicated that foreign direct investment has a favorable impact on economic growth. Government should enhance the development of human capital in Nigeria, the report said.

In their study on the impact of foreign direct investment on the exchange rate in Nigeria, Rufai, Aworinde, and Ajibola (2022) discovered that this impact is unfavorable. Olowe (2022) also investigated the connection between Nigerian capital formation and foreign direct investment. The study discovered that capital formation in Nigeria is significantly impacted favorably by foreign direct investment. According to a 2020 study from emerging economies by Ashakah and Ogbebor, there is a strong correlation between foreign direct investment and financial development. According to this finding, foreign direct investment is an important factor influencing the financial development of emerging economies. The impact of infrastructure on foreign direct investment inflow to Nigeria was examined by Abdulrahmaman and Ajayi (2022). The study used VECM and discovered that corruption is a barrier to Nigeria's ability to attract foreign direct investment.

Using annual time series data from 1981 to 2020, Sabuur and Ismaila (2020) investigated the relationship between foreign direct investment and economic growth in Nigeria. Ordinary Least Squares was used in the investigation (OLS). According to the report, foreign direct investment (FDI) significantly boosts Nigeria's economy. Also, it was noted that over time, Nigeria's economy had benefited from the input of foreign direct investment. They suggested that the Nigerian government should concentrate on human capital development in light of their findings.

Dike (2018) investigated the relationship between foreign direct investment in agricultural and economic growth in Sub-Saharan African nations (Nigeria, Sudan, South Africa and Tanzania) using the Vector Error Correction Model (VECM) and annual time series data from 1995 to 2016. The Johansen co-integration analysis showed a long-term substantial relationship between agricultural foreign investment and SSA's economic growth. The results of the VECM revealed a considerable positive relationship between foreign agricultural investment and economic growth in SSA.

A similar empirical study on the impact of foreign direct investment on the expansion of SSA economies was conducted by Jugurnath et al. (2016) from 2008 to 2014. The study looked at 32 Sub-Saharan African nations. The study used dynamic panel regression, and it was found that during the study period, foreign direct investment had a positive, substantial impact on SSA countries. The 2009 Euro crisis was also included in the empirical analysis to see how it affected SSA. Using panel data from 30 developing countries in the SSA lower middle-income group, the result likewise confirmed the favorable significant impact of foreign direct investment on SSA.

Trang et al. (2019) investigated the short- and long-term impacts of FDI on economic growth in SSA. The study used fully modified OLS, and it was found that while foreign direct investment has a short-term negative impact on economic growth in SSA, it has a long-term favorable substantial impact. The study found that domestic credit, domestic investment, human capital, and money supply all have positive long-term effects on economic growth when the variables were tested for their partial effects.

Similar research was conducted by Tran and Hoang (2019), who looked at the impact of domestic investment, foreign direct investment, human resources, and skilled labor on the development of Vietnam. The research used panel data from 2012 to 2015. Fixed effect estimation was used because the Hausman finding was non-significant. The study indicated that throughout the study period, foreign direct investment, domestic investment, and human resources all had a positive significant effect on gross domestic product, whereas the level of trained workers had a positive negligible impact.

Hanafy and Marktanner (2018) used the GMM estimation technique to analyze the effects of overall and sectoral foreign direct investment on Egypt's economic growth. Data from the annual times series were utilized from 1992 to 2007. The studies' findings demonstrate that foreign direct investments in Egypt's manufacturing, service, and agricultural sectors have a consistent positive impact on the country's economy. Moreover, total foreign direct investment has a conditional impact on Egypt's economic expansion. The study also found that while human capital does not serve as a conduit for absorbing capacity, interactions between foreign direct investment in the services sector and domestic private investment can promote growth. The study concluded that when the government has a minimal level of domestic private investment to absorb foreign

technology and expertise, foreign direct investment in the service sector stimulates economic growth.

3. METHODOLOGY

3.1 Theoretical Framework

This is anchored on Kaldor-Hicks Efficiency (1939). This theory assumes that resources should be allocated in such a way that there will be Pareto improvement. This theory is applied to check an outcome of compensating the losers by the gainers so that there will be Pareto efficiency. It concentrated on the welfare of citizens in an economy.

3.2 Data and Data Sources

The human development index, inflation rate, exchange rate, domestic investment, and trade openness are the variables considered in the study. The Global Development Indicators were the source (WDI). Welfare is the dependent variable, and the human development index was used to calculate it. FDI inflows, the exchange rate, the inflation rate, domestic investment, and trade openness were used to measure the independent variable, foreign direct investment, whereas COVID19 was employed as a dummy variable

3.3 Model of the Study

The linear functional form of the model is state as
HDI = f(FDI)…………………………………………(3.1)

FDI = FDI, INF, DI, TOP, REXCH…………………(3.2)

HDI = f(FDI, INF, DI, TOP, REXCH)……………………..(3.3)

The econometrics form of the model:

$$HDI_t = \beta_0 + \beta_1 FDI_t + \beta_2 INF_t + \beta_3 DI_t + \beta_4 TOP_t + \beta_{5R}REXCH + \varepsilon_t… \quad (3.4)$$

$$HDI_t = \beta_0 + \beta_1 lnFDIt + \beta_2 INFt + \beta_3 lnDIt + \beta_4 TOPt + \beta_5 REXCH + \varepsilon t…..(3.5)$$

ARDL Model:
$$HDI_t = a_0 + \alpha_{1t} + \sum_{i=1}^{p} \alpha_{2i} \Delta HDI_{t-1} + \sum_{i=1}^{p} \alpha_{3i} \Delta lnFDI_{t-1} + \sum_{i=1}^{p} \alpha_{4i} \Delta INF_{t-1} + \sum_{i=1}^{p} \alpha_{5i} \Delta lnDI_{t-1} + \sum_{i=1}^{p} \alpha 6i \Delta TOP_{t-1} + \sum_{i=1}^{p} \beta_1 \Delta lnFDI_{t-1} \sum_{i=1}^{p} \beta_2 \Delta INF_{t-1} + \sum_{i=1}^{p} \beta_3 \Delta lnDIt-1 + \sum_{i=1}^{p} \beta_4 \Delta TOP_{t-1} + \sum_{i=1}^{p} \beta5 \Delta REXCH_{t-1} + u_t..........................(3.6)$$

Where:

Δ are the first difference operator,

α_0 denotes the constant term,

α_1 is the trend,

p is the optimal lag length,

α_2 - α_6 represent the short-run dynamics of the model

β_1 - β_5 are the long-run coefficients,

u_t = is the white-noise error term

ECT_{t-1} = the error term

3.4 *A Priori* Expectations

This suggests making judgments based on economic theory. Through the channels of increased investment and output, it is anticipated that an increase in foreign direct investment will result in an increase in welfare. Given that inflation reduces purchasing power, it is anticipated that inflation will have a negative impact on welfare. Exchange rate is predicted to have a comparable detrimental impact on wellbeing. Demand for local currency affects exchange rate movement. When the exchange rate is high, it suggests that there is little demand for local currency, which is a sign of little investment.

Additionally, it is anticipated that domestic investment will improve wellbeing. The employment rate will rise and income levels will rise when there is significant domestic investment spread throughout the nation. The impact of trade openness might be favorable or detrimental. It depends on the imports and exports the nation makes. An increase in a country's imports of raw materials will benefit trade openness. A nation's welfare will be negatively impacted by trade openness if it imports more finished goods.

In terms of mathematical equations and symbols, the *a priori* expectations are summarized in Table below.

Summary Table of the *A Priori* Expectations

Equation of the Hypothesized Relationship	Parameter and the Expected Sign
$HDI = \alpha_0 + \alpha_{1FDI} + \mu$	$\alpha_1 > 0$: Positive (+)
$HDI = \alpha_0 + \alpha_{2INF} + \mu$	$\alpha_2 < 0$: Negative (-)
$HDI = \alpha_0 + \alpha_{3DI_t} + \mu$	$\alpha_3 > 0$: Positive(+)
$HDI = \alpha_0 + \alpha_{4TOP} + \mu$	$\alpha_4 > 0$: Positive (+)or $\alpha_1 < 0$: Negative (-)
$HDI = \alpha_0 + \alpha5R_{EXCH} + \mu$	$\alpha_4 > 0$: Negative (-)
$HDI = \alpha_0$	$\alpha_0 > 0$: Positive (+)

Source: Researcher's hypothesized relationships (2022)

## 4. RESULTS AND DISCUSSION OF FINDINGS

Table 4.1 Tabular Representation of the Augmented Dickey Fuller Test Result

Series	5% Critical Value At levels	5% Critical Value At first differences	ADF at levels (Prob.)	ADF at first differences(Prob.)	ADF Test at levels	ADF Test at first difference	Equation Specification	Order of integration
EXCH	-2.9525	-	0.0031	-	-4.1008	-	Intercept	I(0)
HDI	-2.9511	-2.9540	0.8149	0.0003	-0.7696	-4.9188	Intercept	I(1)
INF	-2.9762	-	0.0014	-	-4.5071	-	Intercept	I(0)
LnDI	-2.9511	-2.9540	0.6960	0.0000	-1.1212	-6.7666	Intercept	I(1)
LnFDI	-2.9511	-2.9604	0.1148	0.0118	-2.5424	-3.5927	Intercept	I(1)
TOP	-2.9511	-	0.0073	-	-3.7639	-	Intercept	I(0)

Source: Authors computation using E-Views 9.0 (2023)

According to the results of the unit root test, while the human development index (HDI), foreign direct investment (lnFDI), and domestic investment (lnDI) were stationary at the first difference, the exchange rate (EXCH), inflation rate (INF), and trade openness (TOP) were stationary at the level. This suggests that even though the series are 1(1) and 1(0) variables, they are not integrated in the same order. The variables were not incorporated into one another, hence the analysis was conducted using the Auto Regressive Distributed Lag method (ARDL).

Trend Analysis
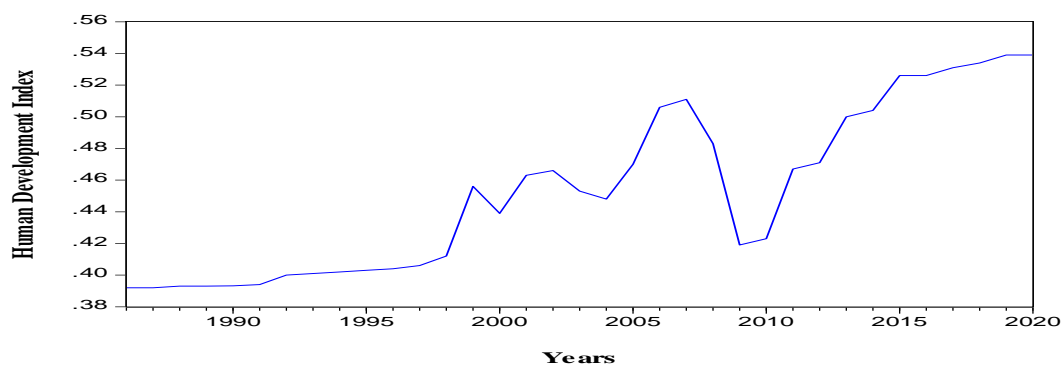
Figuer 4.1: Trend for human Development Index in Nigeria from 1986-2020

The graph above showed the human development index, which indicated that it increased between 1986 and 2008 before sharply declining in 2010. After that, it started to rise.
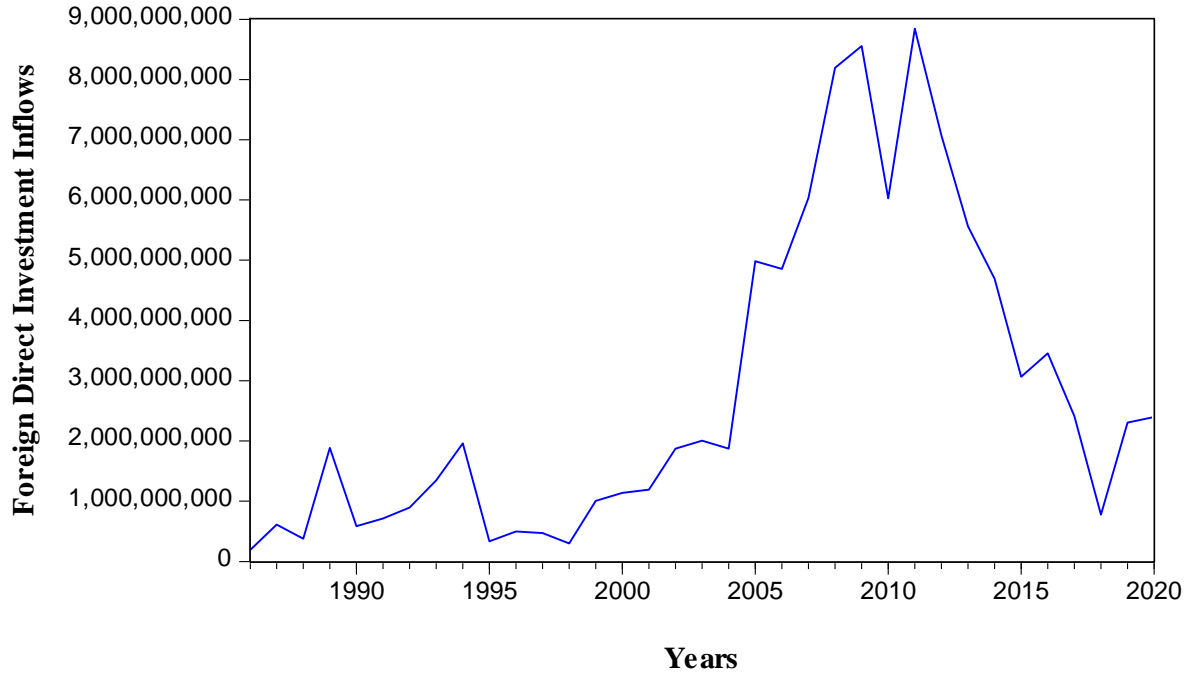
Figure 4.2: Trend for Foreign Direct Investment in Nigeria from 1986-2020
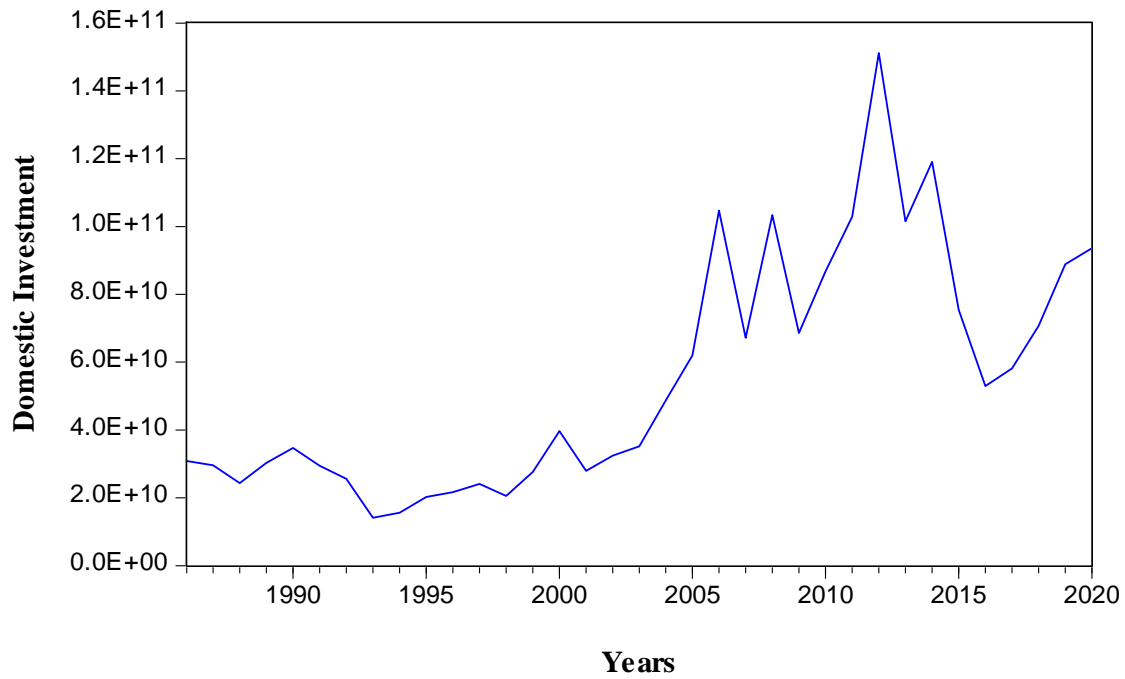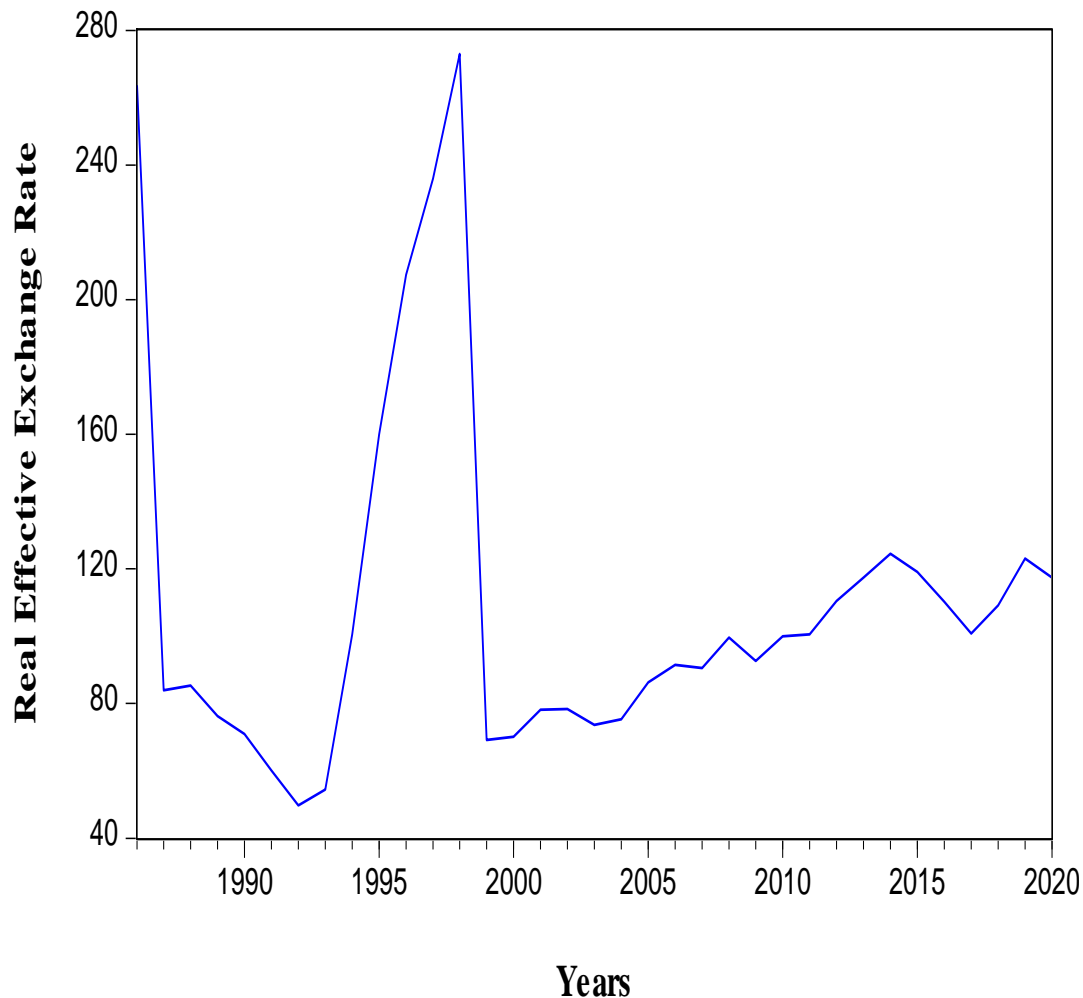

Figure 4.3: Trend for Domestic Investment in Nigeria from 1986-2020

Figure 4.3 represents trend for domestic investment in Nigeria from 1986-2020. The trend shows that from 1986, there was an increase in domestic investment and it was at its peak in the year 2013. Thereafter, domestic investment declined.


Years
Figure 4.4: Trend for Exchange Rate in Nigeria from 1986-2020

The Federal Government of Nigeria implemented a structural adjustment program in 1986. (SAP). As a result, the country transitioned from a pegged to a flexible exchange rate regime, where the forces of supply and demand were totally allowed to control the exchange rate. The real effective exchange rate fell from $325.41 per dollar to $267.465 per dollar in 1986. In a same vein, the real exchange rate fell by 77.58% from $267.465 to #59.968 per dollar in 1991, compared to the value in 1986. The real exchange rate did, however, dramatically increase in 1996, rising from #59.968 per dollar in 1991 to #207.633 per dollar in 1996, and then falling by 62.55% in 2001. The following years saw exchange rates of #78.08, #73.2, #74.908 and #85.546 per dollar, respectively, in 2002, 2003, 2004 and 2005. This showed that at such times, imports were more expensive than exports, which benefited commerce. Yet, from 2012 and 2020, the real effective exchange rate for a dollar varied between $111.389 and $117.45.
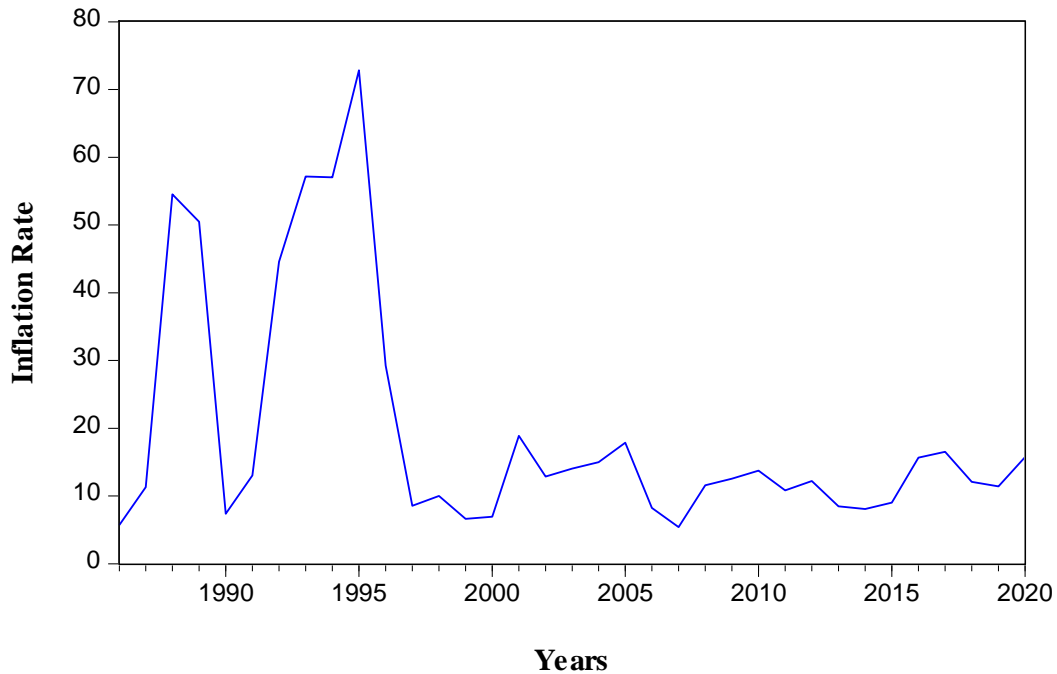
Figure 4.4: Trend for Inflation Rate in Nigeria from 1986-2020

Inflation in Nigeria has been trending inconclusively. This demonstrates that Nigeria's inflation rate fluctuates (increase and decrease). The inflation rate in 1986 was 20.81%. Following that, it fell to 13.7% in 1986, a 34.17% decline from the rate in 1981. In addition, the inflation rate in 1991 was 23%. This demonstrated a rise in the inflation rate from 13.7% in 1986 to 23% in 1991. In addition, the inflation rate reached its peak in 1994 at 76.8%. The inflation rate in 1999 was only 0.2%.Yet it eventually rose to 23.8% in 2003 before falling to 15.1% in 2008. The inflation rate was 7.96%, 7.98%, and 9.55%, respectively, in the years 2013, 2014, and 2015. This suggests that Nigeria maintained a one-digit inflation rate during those times. The inflation rate for the years 2016, 2017, and 2020 was 18.5%, 15.37%, and 15.75%, respectively..

Years
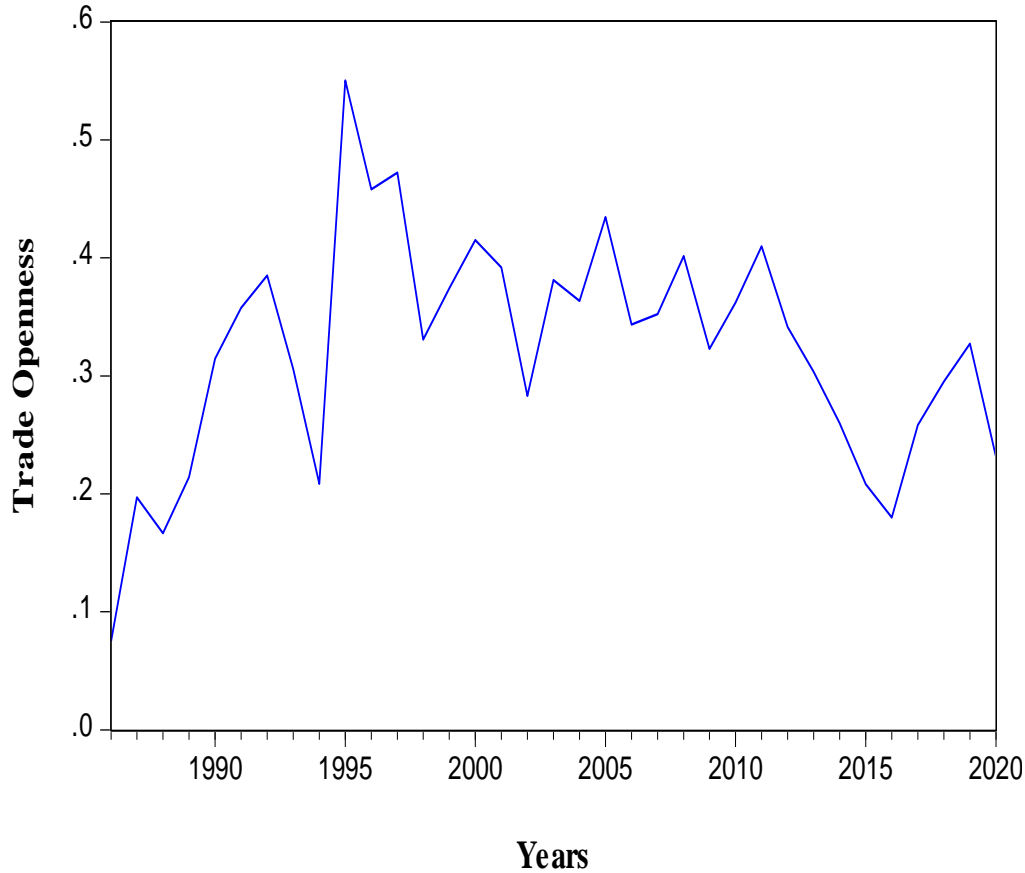
Figure 4.6: Trend for Trade Openness in Nigeria from 1986-2020

Openness to trade shows the degree to which a country is involved in international trade. The figure shows that from 1986-2020, Nigeria has been actively involved in international trade.

Hypothesis: there is no long run significant effect of foreign direct investment on welfare in Nigeria.

Table 4.2: F-statistics

F-Statistics	Less than or Less than	Upper Bound Value	Decision Rule
0.409674	<	3.61	Do not Reject H_0

Source: Authors computation using E-Views 9.0(2023)

The outcome indicates that the null hypothesis was not rejected, indicating that there is no long-term association between the explanatory variable and the dependent variable. Hence, there is no long-term meaningful impact of foreign direct investment on Nigeria's welfare.

Table 4.3: Tabular representation of co integration Form

VARIABLE	COEFFICIENT	STANDARD ERROR	T-STATISTICS	PROBABILITY
D(LNFDI)	0.002893	0.006568	0.440561	0.6632
D(EXCH)	-0.000005	0.000085	-0.058511	0.9538
D(INF)	-0.000104	0.000265	-0.392357	0.6980
D(LNDI)	0.012674	0.012182	1.040412	0.3077
D(TOP)	-0.005242	0.043616	-0.120182	0.9053
D(COVID19)	0.003581	0.017833	0.200838	0.8424
CointEq(-1)	-0.163558	0.114546	-1.427880	0.1652

Source: Authors computation using E-Views 9.0(2023)

None of the variables had a short run significant impact on welfare, according to the co integration form above, at 5% significant levels. In the long term, 16.3% of corrections to the disequilibrium can be made, according to the equilibrium ARDL (ECM) version coefficient of -0.163. As a result, in the current year, about 16% of the disequilibria from the prior year return to the long run equilibrium.

Table 4.4: Tabular Representation of Long Run Association

VARIABLES	COEFFICIENT	STANDARD ERROR	T-STATISTICS	PROBABILITY
LNFDI	0.017690	0.043552	0.406188	0.6879
EXCH	-0.001590	0.000520	-3.058229	0.0040
INF	-0.007067	0.001608	-4.395238	0.0059
LNDI	0.077490	0.077042	1.005819	0.3238
TOP	-0.032049	0.262344	-0.122163	0.9037
COVID19	-0.021897	0.104461	-0.209620	0.8356
C	1.022753	1.279308	0.799458	0.4313

Source: Authors computation using E-Views 9 (2022).

HDI = 1.022 + 0.017lnFDI − 0.0015EXCH − 0.007INF + 0.077lnDI − 0.032TOP − 0.021COVID19…………………….4.1

According to equation 4.1, foreign direct investment has a favorable impact on Nigeria's human development index. According to the coefficient, an increase in foreign direct investment of 1% is predicted to result in a 0.017% improvement in welfare. The likelihood threshold of $0.6879 > 0.05$ suggests that foreign direct investment has no significant impact on Nigeria's wellbeing. Moreover, the wellbeing of Nigeria is negatively impacted by the exchange rate, inflation rate, trade openness, and COVID19. Hence, an increase in the exchange rate, inflation rate, trade openness, and COVID19 will, respectively, result in a 0.0015%, 0.007%, 0.032%, and 0.021% fall in Nigerian wellbeing during the study period. The likelihood levels demonstrate that Nigeria's wellbeing is negatively impacted by the exchange rate and inflation rate. Also, there is a significant impact on

welfare from domestic investment. Nigeria's welfare will rise by 0.07% for every percentage point increase in domestic investment.

Granger Causality Test

Granger causality test results were explained at a 10% significant level. As a result, exchange rate does not cause inflation rate, whereas inflation rate does not cause exchange rate. This suggests that the relationship between the inflation rate and the exchange rate is one-way. While the inflation rate does not cause domestic investment, it does contribute to it. This also suggests that there is a one-way relationship between domestic investment and inflation rate. While foreign direct investment alone does not create inflation, the rate of foreign direct investment does. Inflation rate and foreign direct investment have a one-way relationship. The outcome also indicated that trade openness is not a source of inflation rate or domestic investment, but rather that they are both caused by trade openness.

Impulse Response Function

Response of HDI to Cholesky
One S.D. Innovations
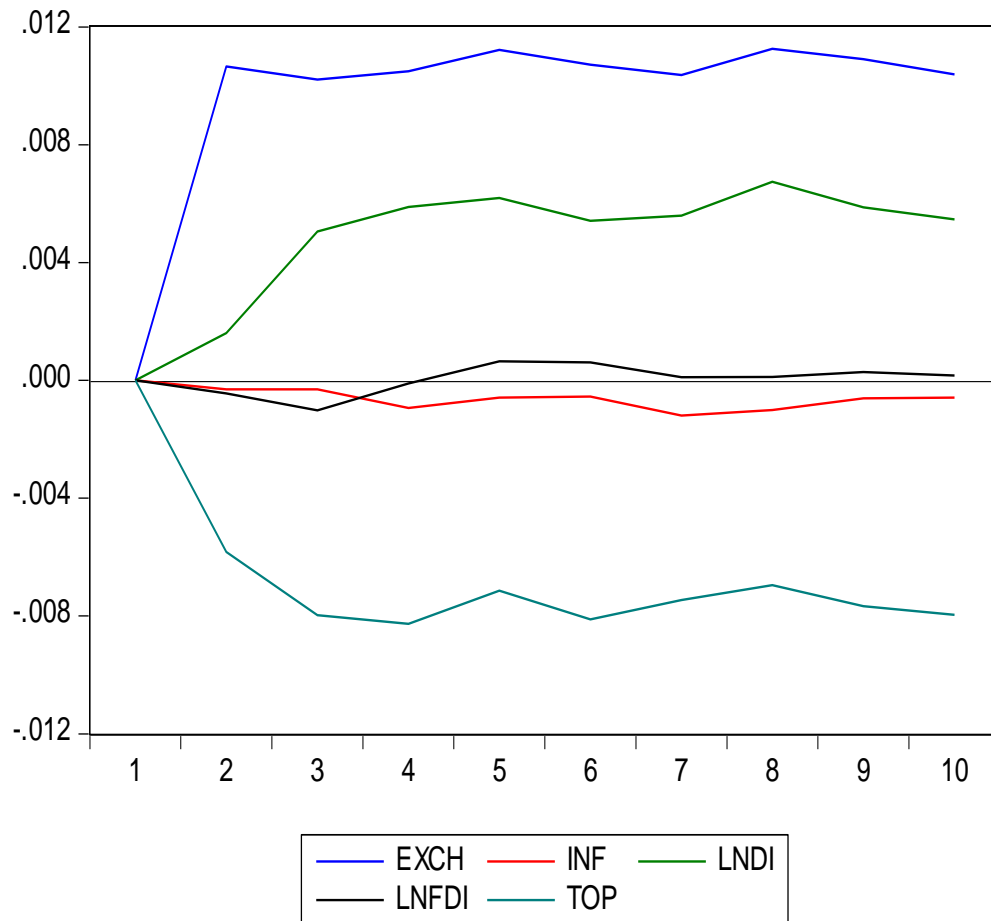
The impulse function's findings indicate that one standard deviation in domestic investment and the exchange rate will cause the human development index to be higher than the steady state line from period one to period ten. Yet, domestic investment and an inflation rate shock of one standard deviation will result in negative welfare from the first period through the tenth period. However, from the first period to the fourth period, human development fell below the steady state line due to a shock of one standard deviation in foreign direct investment. After then, the human development index rose starting in the fifth year and continued to be over the line until the tenth period.

Post Estimated Test
Breusch-Godfre Serial Correlation LM Test
Table 4.5

F-statistic	0.453043	Prob. F(2,24)	0.6410
Obs*R-squared	1.236924	Prob. Chi-Square(2)	0.5388

Source: Authors computation using E-views 9 (2023)

The results above showed the prob. (chi-square) having a value of 0.5388 which is greater than the 5% level of significance so therefore we accepted the null hypothesis which stated that there is no serial correlation.

Table 4.6: Tabular representation hetroscedasticity result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.945941	Prob. F(7,26)	0.4894
Obs*R-squared	6.901379	Prob. Chi-Square(7)	0.4392
Scaled explained SS	9.781312	Prob. Chi-Square(7)	0.2013

Source: Authors computation using E-views 9 (2023)

At 5% significant level, probability level is 0.2013 which is greater than 0.05. Therefore, null hypothesis is accepted. This means that the variance for the residuals is uniform (homoscedasticity).

Table 4.7 Ramsey Reset Test Analysis

	Value	Df	Probability
t-statistic	0.147392	25	0.8840
F-statistic	0.021724	(1, 25)	0.8840

Source: Authors computation using E-Views 9.0(2023)

Given that the probability of the F-statistics as shown in the table above is 0.8840, we accept the null hypothesis, meaning there is no linearity in the model.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The analysis in the paper used the ARDL (Auto Regressive Distributed Lag) approach. A bound test was also used to look for any long-term effects between the variables. The study concluded that foreign direct investment had no meaningful long-term impact on welfare. This suggests that foreign direct investment is not always a determining factor in Nigerians' well-being. Yet, it was discovered over the course of this study that while inflows of foreign investment have an impact on the growth of the Nigerian economy, the analysis revealed that this increase is not associated with an improvement in the welfare of Nigerians. Moreover, the human development index is significantly impacted negatively by the rates of inflation and exchange. This bears the inference that Nigeria's high inflation rate has negatively impacted the welfare of Nigerians. The welfare of Nigerians has also been impacted by exchange rates, namely the depreciation of the naira. The study also found that the corona virus epidemic had a bad impact on Nigerians' welfare.

The following suggestions were given in response to the study's findings with a focus on enhancing welfare in Nigeria:
First and foremost, Nigeria needs to take the fight against corruption seriously since doing so would reduce the amount of foreign direct investment that is diverted for personal gain. A contractionary monetary policy should be implemented in order to reduce the money supply, which is the second recommendation, as the study indicated that the money supply had a negative impact on welfare in Nigeria. Using an export promotion strategy will help to generate demand for the naira, ensuring the appreciation of the naira. Finally, as the study found that the corona virus pandemic has a bad impact on Nigeria's welfare, there is a need to raise awareness about vaccination against the pandemic in Nigeria.

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