TRADE OPENNESS AND UNEMPLOYMENT RATE IN NIGERIA

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Abstract
This study examines the effect of trade openness on unemployment rate in Nigeria, covering a period of thirty-eight years i.e. from 1985 to 2022. Absolute cost advantage theory guided the study. Time series data taken from the National Bureau of Statistics and the Central Bank of Nigeria (CBN) came under use in the study. The techniques of data analysis utilised were the Error Correction Model, the Autoregressive Distributive Lag (ARDL) method, and the Augmented Dickey-Fuller (ADF) statistic. The main conclusions of the study are that, both in the long and short terms, trade openness substantially and negatively influences unemployment rate in Nigeria. Similarly, both in the long and short terms, FDI has a negative and notable impact on unemployment rate. Still, the rate of unemployment in both the short and long terms is much favourably influenced by the exchange rate. This outcome implies that trade openness creates job possibilities, hence lowering the unemployment rate in Nigeria. Therefore, the research comes to the conclusion that unemployment in Nigeria is substantially influenced by trade openness. Among other things, the research suggested that the government of Nigeria institute calculated economic strategies aimed at luring private investment from outside the country. This would increase the overall amount of investment in the country and perhaps lead to the creation of more employment. Finally, in order to create more job possibilities, the government should look into new marketing areas that attract investors from other countries.

Key Words: Trade Openness, Foreign Direct Investment, Exchange Rate, Unemployment Rate, Nigeria

Introduction

The elimination of obstacles that prevent the free movement of goods and services between trading partners is an essential component of trade openness. Mostly driven by free commerce, globalisation has been achieved (International Labour Organisation, 2001). International commerce has propelled the trend of recent years of global integration (Eddy, 2005). It allows nations to concentrate on goods and services where they have a competitive advantage over other nations, therefore generating notable economies of scale. Many developing countries took this road in order to reach economic development and prosperity before the present. This idea envisions a free movement of cash, investment, and technology likewise of ideas (Olowe & Ibraheem, 2015). Under mercantilist trade policies (Umoh & Onye, 2013), Africans and developing nations were subject to tight rules including high implicit and explicit tariffs likewise import licencing regimes. Many underdeveloped nations started opening their trade policy around middle of the 1980s. To be eligible for loans, grants, and financial aid, the World Bank and the International Monetary Fund must specify this policy (Briggs, 2007). This approach has been embraced by many underdeveloped nations, therefore transforming the global economy. Greater mutual integration, agreement, and nation-wide cooperation have resulted in a rise in international commerce (Imoagwu, Ozoh, Madueke, & Mbah, 2021).

The oil glut that plagued Nigeria's economy in the late 1980s and early 1990s caused performance, development, and growth to fall. In an attempt to revive the failing economic policies, the government passed import substitution and export promotion programs. To try to resuscitate the economy of underdeveloped nations, Western donors and international financial institutions have instituted structural adjustment programs (SAPs). SAPs stress free market economy, privatisation, and macroeconomic stabilisation. Following this program seems to cause financial openness and economic development (Rajapatirana, 2000). SAP's improved macroeconomic policies concerning GDP, currency rate, inflation goal, and interest rate policies are seen to be able to revitalise many developing countries (Ekpo, 2005).

With exports of commodities valued well over $47.8 billion and imports of goods valued $39.5 billion, Nigeria was ranked the 49th biggest export nation in the world by the Organisation of Exporting Counties (OEC) 2015. In 2020, Nigeria's GDP in current US dollars was 26th, its total exports were 50th, its total imports were 48th, and its GDP per capita was 157th. The decline in shipments of crude oil (-6.9%), commodities (-79.1%), energy products (-86.4%), and solid minerals (-37.1%), which comprised the majority of the export value of ? 1,795 billion at the end of September 2022, contributed the most. Consistent with this, purchases of agricultural products augmented by 18.4%, raw commodities by 17.9%, and solid minerals by 11.8% (National Bureau of Statistics, 2022).

Record demonstrates that Nigeria's exports and imports in US$ from 1980 to 2022 have been volatility in both exports and imports particularly when the country's imports surpass the exports. Trade openness has been seen in the nation throughout history. A key issue emerges from the continuous debate: Given Nigeria's high unemployment rate and job losses, has trade openness—that is, free trade—led to the development of additional jobs, or, on the other side, have they negatively impacted job creating? Notwithstanding shifting trade patterns, unemployment is declining globally. A substantial social-economic concern affecting many nations, unemployment has grown in popularity as a yardstick. Every nation measures this rate differently (NBS, 2018).

Many elements within a country affect the unemployment rate, including the form and character of its labour market likewise elements in the political and economic environment of every country. People in a nation may be unhappy about working below their potential, while others may be unhappy even when they are totally involved in their present career (Onifade, Asongu & Bekun, 2020). Between 1981 and 1999, Nigeria's unemployment rate was on average 4.11%. The rate rose in 2000 at a more than geometric pace. The Bureau of Labour Statistics reports that Nigeria's unemployment rate climbed from 13.1% in 2000 to 14.8% in 2003. From slightly declining to 11.9% in 2005, the rate has been rising since then. In 2006 there was a 12.3% rise; in 2008 there was a 14.9% rise. From 20.4% in 2017 to 23.1% in 2019, a 1.13% rise from 2018, 27.1% in 2020, a 1.17% surge from 2019 and 33.3% in 2021, a 1.23% upturn from 2020. The unemployment rate in Nigeria has been clearly growing. But in 2022 Nigeria's jobless rate would soar to 35% (NBS, 2022). With respect to the United States, Nigeria's inflation rate for the same time is 3.7%.

Under World Bank and International Monetary Fund (IMF) direction, Nigeria started a sequence of structural adjustment initiatives (SAPs) in the middle of the 1980s. With measures meant to lower trade barriers, devaluate the currency, and promote FDI, these changes signalled a major turn towards trade openness. Opening the economy would improve efficiency, encourage economic diversification, and let Nigeria more completely become a part of the world economy, the justification was. Though with different degrees of dedication and success, Nigeria has been pursuing policies of trade openness since SAPs were adopted. Two initiatives to further regional and continental commercial integration include the founding of the Economic Community of West African States (ECOWAS) and Nigeria's involvement in the African Continental Free commercial Area (AFCFTA). Nigeria has also signed many trade agreements meant to lower tariffs and non-tariff obstacles, therefore promoting simpler access to foreign markets.

Notwithstanding these initiatives, Nigeria's trade openness program has run into several difficulties. The whole realisation of trade openness advantages has been hampered by structural problems like poor infrastructure, bureaucratic inefficiency, and policy inconsistencies. Furthermore, the Nigerian economy is still mostly reliant on oil exports; therefore it is subject to changes in world oil prices and thereby limits the influence of trade diversification programs. However, a number of studies have attempted to investigate the correlation between Nigeria's trade openness and unemployment rates, with contradictory conclusions. By drawing foreign investment, encouraging industrial development, and hence supporting exports, some contend that trade openness may boost job creation and economic growth. On the other hand, others argue that growing competition from imported products might result in job losses in less competitive home businesses, especially in manufacturing and agriculture.

Most of these studies utilised annual time series data, which is considered to be too short to do a robust econometric analysis, and only a small number of them utilised panel data or quarterly data to conduct their data analyses. Furthermore, most of the earlier linked research link trade openness to economic development, poverty level, government expenditure, whereas just few connect to unemployment rate in Nigeria. Methodologically, very few relevant research carried out pre-estimation and post-estimation assessments. Finally, given most of the relevant research revealed lack of agreement in their results, there appears to be no clear conclusion on the direction and degree of the influence of trade openness on unemployment rate in Nigerian. All these confirmed the existence of a research gap and the need of further investigation in this field to close this difference.

Objectives of the Study

The aim of this study is to empirically determine the effect of trade openness on unemployment rate in Nigeria. Other Specific objectives include to:

a. Ascertain the effects of trade openness on unemployment rate in Nigeria.
b. Determine the effect of foreign direct investment on unemployment rate in Nigeria.
c. Examine the effect of exchange rate on unemployment rate in Nigeria

Review of Literature

Theoretical Framework

Theoretical review models of economic growth and development proposed by different scholars have identified various theories that explain the links between trade openness and unemployment rate. These include Absolute Cost Advantage theory and Classical Theory

Absolute Cost Advantage Theory

This research rests on the theoretical framework of absolute benefit proposed by Adam Smith. In congruent with Smith, two nations may often achieve a comparative advantage when they use the same unit of labour. In congruent with Meier (1988), a nation may be said to have absolute advantage if it can manufacture a product employing less resources than other countries. Take Ghana and Nigeria as examples of two countries that produce cocoa and groundnuts, respectively. Nigeria is able to produce more ground nut units than Ghana does with the same quantity of workers and less resources (Gbosi, 2005). When it comes to cocoa output, Ghana will experience the exact opposite. As a result, Nigeria is head and shoulders above Ghana. It was Smith's (1776) contention that the nation would export its surplus and use the proceeds to pay for imported products that it could not manufacture domestically. In light of the above, it stands to reason that Nigeria stands to gain economically by honing its groundnut production capabilities via more commerce with Ghana. In congruent with Gbosi (2005), Nigeria plans to purchase cocoa from Ghana and use the money from groundnut exports to pay for it. In the long and near term, this will cause the economy to grow and create jobs. This kind of thinking has the potential to boost global specialisation in manufacturing, which would be good for both countries' economies.

Classical Theory

The founder of macroeconomics, John Maynard Keynes (1936), argued that fixing unemployment will need more nuanced approaches than just adjusting prices and wages. You can't purchase the nation's production with family money, as Keynes pointed out. This means that full employment isn't always achievable. Unemployment is caused by a lack of aggregate demand. So, he pushed for the state to step in. Government action, in congruent with Keynes, encouraged aggregate demand, which ran counter to classical views. The case for governmental involvement shifted. More and more people wanted the government to step in. J. M. Keynes essentially offered a theory that foretold and explained the 1930s' protracted unemployment. Fiscal policy, in congruent with Keynes's argument, can keep production and employment levels high. In Keynesianism, fiscal measures that encourage growth also boost employment. Most economists, particularly macroeconomists, believe that Keynesians support spending more money than is really available.

Empirical Literature

The authors Brigs, Nteegah & Ohale (2022) discovered that trading with other countries greatly decreased unemployment in Nigeria. Not only did we break down the data by oil imports and exports, but also by non-oil exports, trade openness, FDI, and real effective exchange rate. This research utilised the ARDL model. The research found that international trade had a greater short-term effect on unemployment than long-term effects. Employing data collected from 1981 to 2018, Ogundipe (2022) appraised the consequences of trade openness on decreasing poverty and employment creation in Nigeria. Co-integration, unit root, and the ARDL approach were utilised to analyse the short- and long-term impacts. The research found that trade is a major factor in the unemployment and poverty rates in Nigeria.

As stated by Onyendi (2021). Granger causality, Johansen co-integration, and unit root were the three tests that were taken. Therefore, trade openness could not account for the average income of Nigerians across the time frame that was considered. The authors Nwosa, Keji, Adegboyo & Fasina (2020) discovered a correlation between trade openness and the unemployment rate. ARDL model is utilised in this research. The research found that unemployment rates in Nigeria are adversely affected by trade openness. This finding suggests that trade openness may help bring down Nigeria's unemployment level. The correlation between the rate of unemployment and trade openness in the DRC was appraised by Famode, Ngbolua & Makalamba (2020) appyling data ranging from 1991 to 2017. Researchers found no statistically substantial connection between trade openness and the unemployment rate when they utilised the vector error correction estimation method.

The correlation between trade and unemployment was appraised by Onifade, Ay, Asongu & Bekun (2019). While market openness and domestic investment did affect unemployment throughout the research period, the nation's terms of trade did not. Ikechukwu, Kalu & Gulna (2015) utilised vector error correction as their approach to study the effects of trade policy on unemployment rates in Nigeria. Trade openness, public education expenditure, real GDP, income per capita, and foreign price shocks are some of the factors that are appraised in the research. Real production and income per capita reduce unemployment in the long term, in congruent with a research, while trade openness policies raise it.

In their study, Madanizadeh & Pilvar (2019) employed data from 93 nations between the years 1990 and 2012 to investigate the connection between trade openness and the rate of participation from labour force. Based on the findings of the research, which were derived utilising a fixed effect panel estimate approach, it was shown that the rate of labour force participation is greatly augmented when trade is open.

In their 2018 study, Mohler, Wyss & Weder appraised the connection between foreign trade and Switzerland's unemployment rate. Approximately 33,000 people working in manufacturing were surveyed between 1991 and 2008. The research found no statistically substantial correlation between foreign trade and unemployment rates when employing the panel regression method. In 2018, Martes appraised 28 OECD (Organisation for Economic Cooperation and Development) nations to determine the correlation between trade openness and unemployment rate. Employing the panel regression estimate method, the research spanned the years 2000– 2016. Both the long and short term effects of trade openness on the unemployment rate were negative and statistically substantial, in congruent with the research.

By looking at the influence of trade openness as it affects a nations development in terms of its economic, Awad-Warrad (2018) undertook a study with the end goal of evaluating how it could reduce unemployment. The research, which spanned the years 1990–2015, concentrated on seven Arab nations: Saudi Arabia, Egypt, Jordan, Bahrain, Oman, and Tunisia. Economic development alongside trade openness considerably declined the unemployment level in the Arab area, in congruent with the study's findings, which were derived employing the panel weighted least square estimate method.

The effects of trade openness on inequality and poverty were studied by Amedo, Fekadu & Kebede (2012). A decline in GDP and a rise in poverty were noticed after the policy's implementation, while the agricultural sector reaped the benefits. The analysis found that import volume has gone up while export volume has gone down.

Methodology

This study utilised an ex post facto research technique. The use of time series data was also made. For this data set, which spans 37 years (from 1985 to 2022), we looked to the CBN statistics bulletin.

Model Specification

The analytical technique of this work was theoretically based on Adam Smith's (1776) Absolute Cost Advantage Model. This is due to the fact that the theory is thought to provide an all-encompassing and rigorous approach to dealing with trade openness and unemployment rate, as crucial factors in analysing economic growth. The study empirically utilised a multiple regression model to reduce collinearity and increase degrees of freedom, which improved economic estimating accuracy. Model parameters include exports, imports, exchange rate, and trade openness, with unemployment rate serving as the dependent variable.

Umoru (2013) utilised VECM to look at how foreign trade flows affected job creation in Nigeria, and this model was utilised to build the research. The Employment Rate (EMP) = f(TT) was the formula utilised in the VECM model, where TT stands for Total Trade. Nevertheless, in order to accommodate this study's objectives, the model was somewhat adjusted by removing the employment rate and adding trade openness, FDI, currency rate, and extending the time frame to 2022. Therefore, this is the expression of our model:

The model's functional form is defined as:

$UMR = f(\beta_0, TOP^{\beta 1}, FDI^{\beta 2}, EXR^{\beta 3})$ (2)

To make estimation easier, we describe the model in equation 2 in logarithmic form as follows:

$UMR_t = \beta_0 + \beta_1 TOP_t + \beta_2 FDI_t + \beta_3 EXR_t + \mu_t$ (3)

Where:

UMR = Unemployment Rate;

TOP = Trade Openness

FDI = Foreign Direct Investment;

EXR = Exchange Rate;

UMRt = error term

The constant term of the model, denoted as β0, represents the intercept of the estimated regression line. The parameters β1 through β3 are the co-efficient corresponding to the independent variables influencing the dependent variable, which is economic development (measured by Unemployment). The expected signs for the explanatory variables are as follows: $\beta 1 < 0$, $\beta 2 < 0$, and $\beta 3 > 0$. Consequently, the ARDL model employed in this study is based on the endogenous growth models proposed by Lucas (1988) and Romer (1986), and is specified as follows:

$$\Delta(UMR_t) = \lambda_{01} + \lambda_{1i}\Delta(UMR_{t-1}) + \lambda_{2i}\Delta(TOP_{t-1}) + \lambda_{3i}\Delta(FDI_{t-1}) + \lambda_{4i}\Delta(EXR_{t-1}) + \sum_{t=1}^{q} \beta_{1i}\Delta(UMR_{t-1}) + \sum_{t=1}^{q} \beta_{2i}\Delta(TOP_{t-1}) + \sum_{t=1}^{q} \beta_{3i}\Delta(FDI_{t-1}) + \sum_{t=1}^{q} \beta_{4i}\Delta(EXR_{t-1}) + \varepsilon_{1t}$$

Where: _ represents the difference operator and indicates the optimal lag; t denotes the time lag; λ01 - λ04 are constant variables; β1 – β4 are the long-run dynamic co-efficient of the model (the associated long-run multipliers); λ1 – λ4 are the short-run dynamic co-efficient of the model (the related short-run multipliers); ε1i – ε4i are serially uncorrelated stochastic terms with a mean of zero and constant variance. To obtain the short-run co-efficient for the variables, an error correction model (ECM) is estimated. The ARDL specification of the ECM is shown below:

$$\Delta(UMR_t) = \beta_0 + \sum_{t=1}^{p} \lambda_{1i}\Delta(UMR_{t-1}) + \sum_{t=1}^{p} \lambda_{2i}\Delta(TOP_{t-1}) + \sum_{t=1}^{p} \lambda_{3i}\Delta(FDI_{t-1}) + \sum_{t=1}^{p} \lambda_{4i}\Delta(EXR_{t-1}) + \delta ECT_{t-1} + \varepsilon_{1i}$$

The terms λ1i to λ4i represent the short-run dynamic co-efficient indicating how the model adjusts towards equilibrium. The parameter δ refers to the speed of adjustment, which should be negative. ECT stands for the lagged error correction term, derived from the estimated cointegration model.

Result and Discussion

Data collected for research objectives lack significance if not subjected to analysis. The time series data obtained for this investigation were analysed and interpreted via the Autoregressive Distributed Lag (ARDL) method of data analysis. This approach was utilised due to the ADF unit root test results indicating that all variables exhibit mixed stationarity, including both stationary at levels and stationary at first differences. Finally, the diagnostic assessments performed include the normalcy test, serial correlation test, heteroscedasticity test, stability test, and Ramsey RESET test. The data analysis was conducted employing the E-views 12.0 statistical software.

Table 1: Descriptive Statistic

	UMR	TOP	FDI	EXR
Mean	4.771842	30.89421	1613.267	127.8445
Maximum	10.10000	55.02100	7671.550	425.9800
Minimum	1.900000	7.521000	0.360000	0.890000
Std. Dev.	2.126812	10.68344	2083.385	118.9257
Skewness	1.314540	-0.272500	1.237016	0.926969
Observations	**38**	**38**	**38**	**38**

Source: Computation by Authors (2024), E-view 1

In congruent with Table 1, the average unemployment rate from 1985 to 2022 is 4.771842, and its standard deviation is 2.126812, which suggests that the unemployment rate does not cluster around its mean value. Therefore, the unemployment rate does not cluster around these values. As an additional point of interest, the average value of trade openness is 30.89421, and its standard deviation is 10.68344. This suggests that the departure of trade openness from the mean is somewhat modest. Furthermore, the standard deviation of the value of FDI is 2083.385, while the mean value of this kind of investment is 1613.267. Therefore, it is reasonable to assume that the FDI is highly concentrated around its mean value and exhibits very little volatility from that point on. The average exchange rate is 127.8445 with a standard deviation of 118.9257, to round things out. The fact that the exchange rate is not tightly clustered around its mean value indicates that there is a considerable amount of dispersion around it. The fact that there is a narrower gap between the lowest and maximum values of trade openness, on the other hand, indicates that a smaller number of Nigerian merchants and investors are participating in international commerce as a result of the rise in tariffs and currency rates.

Unit Root Test

The upshots of the unit root test are presented in table 2 below:

Table 2: Unit Root Test Result

Variables	ADF	Mackinnon Critical Value @ 5%	Prob.*	Decision	Order of Integration
(UMR)	-4.016954	-2.945842	0.0036	Stationary at First Difference	I(1)
(TOP)	-3.159454	-2.943427	0.0307	Stationary at Levels	I(0)
(FDI)	4.871517	-2.971853	1.0000	Stationary at Levels	I(0)
(EXR)	-4.085306	-2.945842	0.0030	Stationary at First Difference	I(1)

Source: Computation by Authors (2024), E-view 12

On the basis of a comparison between the test statistic value and the Mackinnon critical value at a 10% level of significance, it was discovered that the Unemployment Rate and Exchange Rate in the test (also known as ADF) were both stationary at first difference and all substantial at 5%.. Outside of ADF, other factors including trade openness and foreign investment were found to be stationary at levels and had a significance level of 5%. In congruent with the upshots, it can be reasonably concluded that our study's variables were not integrated with a degree of I(2). Our empirical study fits the requirements for utilising the ARDL estimation technique, however, the variables in our model have a mixed order of integration.

Table 3: ARDL Bounds Cointegration Test

Series: UMR TOP FDI EXR		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	3.895738	3
Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound
10%	2.37	3.20
5%	2.79	3.67
2.5%	3.15	4.08
1%	3.65	4.66

Source: Computation by Authors (2024), E-view 12

Table 3 displays the upshots of the ARDL Bounds correlation test. At all critical levels (lower and upper limits), the data show an F-statistic of 3.895738, which rejects the null hypothesis that the variables do not have a long-run connection. The variables seem to be cointegrated, in congruent with this finding. Indicators of trade openness, such as the currency rate, FDI, and trade openness itself seem to have a long-term link with the unemployment rate. Verification of long-term links between the variables necessitated additional evaluation of the strength of the connection between the two sets of data.

ARDL Long Run Dynamics

The study appraised the long-term effects of trade openness, foreign direct investment (FDI), and currency rate on Nigeria's unemployment rate after establishing a long-term link among the various factors. We used the ARDL approach to undertake the long-term analysis. Table 4 shows the calculated normalised long-run co-efficient.

Table 4: Autoregressive Distributive Lag (ARDL) Long Run Dynamics Results

Dependent Variable: (UMR) Selected Model: ARDL (4, 4, 4, 1)				
Variables	**Co-efficient**	**Std. Error**	**T-Statistic**	**Prob.**
TOP	-0.011102	0.003798	-2.922606	0.0095
FDI	-0.000292	0.000258	-1.132991	0.2729
EXR	0.016585	0.003530	4.697726	0.0002
C	2.207852	1.562292	1.413214	0.1756

Source: Computation by Authors (2024), E-view 12

Unemployment rates are negatively and statistically substantially affected by trade openness, in congruent with Table 4 of the ARDL research. Assuming a one-unit upturn in trade openness, this points to a long-term decrease of 0.011102 in the unemployment rate. In addition, there is a negative and insubstantial correlation between FDI and the unemployment rate. Because of this, the long-term effect of a one-unit upturn in FDI on the unemployment rate is a statistically insubstantial drop of 0.000292. At the end of the day, the unemployment rate and the exchange rate are positively and substantially correlated. Accordingly, the long-term unemployment rate is expected to rise by 0.016585 points for every one unit upturn in the exchange rate.

RDL Short Run Dynamics

In order to determine the rate of adjustment, we use an error correction model (ECM) once we have confirmed the existence of a long-run equilibrium connection between the dependent and independent variables. Tabulated in Table 5 are the ECM results.

Table 5: Autoregressive Distributive Lag (ARDL) Error Correction Estimate Result

Dependent Variable: (UMR) Selected Model: ARDL (4, 4, 4, 1)				
Variables	**Co-efficient**	**Std. Error**	**T-Statistic**	**Prob.**
D(UMR(-1))	0.353970	0.155114	2.282003	0.0356
D(UMR(-2))	0.051171	0.160462	0.318895	0.7537
D(UMR(-3))	0.418367	0.126285	3.312875	0.0041
D(TOP)	0.059230	0.011624	5.095568	0.0001
D(TOP(-1))	0.056730	0.014144	4.010948	0.0009
D(TOP(-2))	0.055833	0.015659	3.565541	0.0024
D(TOP(-3))	0.047075	0.012994	3.622723	0.0021
D(FDI)	-0.000619	0.000116	-5.328741	0.0001
D(FDI(-1))	-0.001167	0.000152	-7.675365	0.0000
D(FDI(-2))	0.000608	0.000215	2.833912	0.0115
D(FDI(-3))	-0.000827	0.000305	-2.712312	0.0148
D(EXR)	0.023457	0.006047	3.878895	0.0012
CointEq(-1)*	-0.669383	0.136461	-4.905294	0.0001
Adjusted R-squared = 0.905388; Durbin-Watson stat = 2.173972				

Source: Computation by Authors (2024), E-view 12

There is a notable and statistically substantial link between trade openness and the unemployment rate, in congruent with the ECM data shown in Table 6. As a result, for every unit upturn in trade openness, the unemployment rate is projected to climb considerably by 0.059230 in the near term. The adverse link between FDI and unemployment rates, on the other hand, is big and noticeable. This indicates that there will be a short-term decrease of 0.000619 in the unemployment rate as a consequence of a rise in FDI. Furthermore, there is a substantial and noticeable effect of the exchange rate on the unemployment rate. This indicates that there will be a noticeable upturn of 0.023457 in the unemployment rate in the near term for every unit upturn in the exchange rate. In addition, the regressors (trade openness, FDI, and exchange rate) in the model explain almost all of the variance in the dependent variable (unemployment rate), with a coefficient of determination (R2) of 0.905388. In addition to fitting the data well, the model exhibits an impressive amount of explanatory power. There is no evidence of serial autocorrelation, in congruent with the Durbin-Watson statistic of 2.173972. The significance and negativeness of the error correction term's related coefficient are ultimately shown. Its significance is highlighted by the presence of the negative sign. If there are any deviations from the long-term equilibrium, the ECM will help to correct them. With an ECM coefficient of 0.669383, we can see that we are now reversing any prior deviation, suggesting a rate of adjustment towards long-run equilibrium of 67%. There is a clear correlation between changes in trade openness, FDI, and exchange rates and the present value of the unemployment rate.

Table 6: Post-Estimation Test Results

Test	Null Hypothesis	F-Statistic	Probability	Decision
Serial Correlation Test	**H_0:** No serial correlation	0.420602	0.6642	Retain H_0
Normality Test	**Ho:** Normal distribution	0.058976	0.9709	Retain H_0
Heteroskedasticity Test	**H_0:** Homoscedasticity	0.615874	0.8308	Retain H_0
Ramsey RESET test	**H_0:** Correctly specified	2.537194	0.1308	Retain H_0

Source: Computation by Authors (2024), E-view 12

Given that the probability value of 0.6642 is more than the 0.05 significance threshold, the null hypothesis of no serial correlation remains uncontested, in congruent with the Breusch-Godfrey Serial Correlation LM test findings shown in Table 6. Therefore, the null hypothesis is accepted, and it is concluded that the model does not have any serial correlation difficulties. Also, the probability value (0.9709) is greater than the 0.05 significance level, which means that the null hypothesis of a normal distribution is still uncontested, in congruent with the upshots of the Jarque Bera test for normality. This proves that the model follows a normal distribution, as it leads to accepting the null hypothesis. In addition, the Breusch-Pagan-Godfrey heteroskedasticity test yielded a probability value of 0.8308, which is more than the 0.05 significance level. This indicates that the homoscedasticity null hypothesis is not being challenged. Because of this, we may conclude that the model is homoscedastic and accept the null hypothesis. Accordingly, it seems that relevant variables were not omitted. In conclusion, the Ramsey RESET test shows that the probability value (0.1308) is more than the 0.05 significance threshold, which means that we cannot reject the null hypothesis about accurate specification. Because of this, we may conclude that the model is well-specified and accept the null hypothesis. This provides support for the validity of the model's functional form.

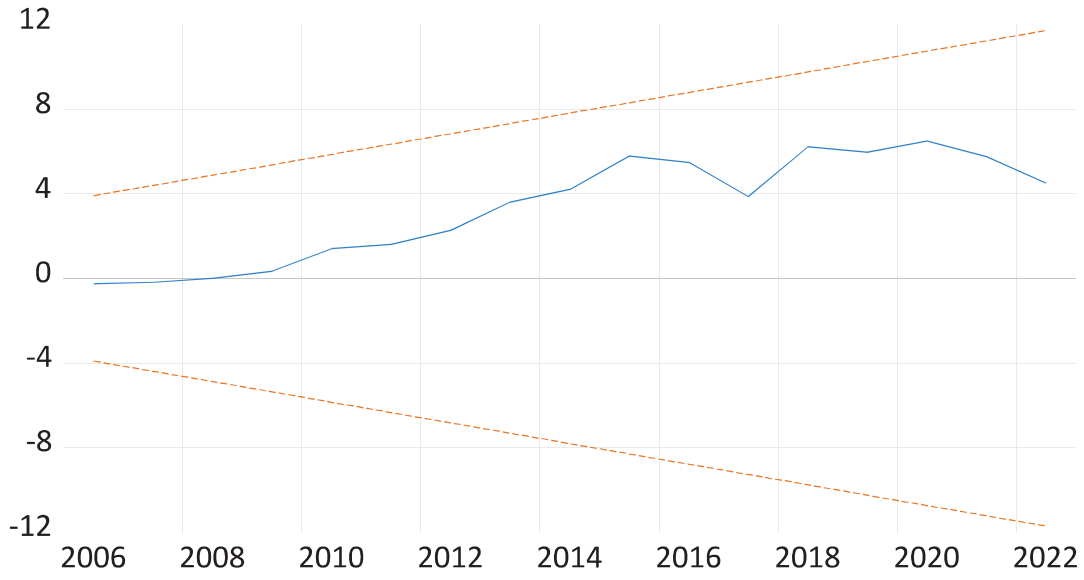

Figure 1: Stability Cusum Test

In addition to the short-run dynamics, the stability of the long-run coefficient was evaluated using the cumulative sum (CUSUM). Notably, the CUSUM plot did not cross the 5% crucial lines, and the stability test results shown in Figure 1 show that the CUSUM line stayed within those parameters. This provides some evidence of stability in the long-run coefficients of the regressors impacting private sector investment in Nigeria.

Discussion of Findings

The analysis focused on how trade openness affected Nigeria's unemployment rate. A solid and statistically substantial association exists between trade openness and Nigeria's unemployment rate, as supported by both the short-term and long-term implications of the findings. This provides more evidence that supports the findings of Brigs & Martes (2018), which said that trade openness has a large and detrimental impact on Nigeria's unemployment rate both in the short term and over the long run. In addition, there is a strong and noticeable negative correlation between FDI and the unemployment rate in Nigeria. This correlation holds true for both the short and long term. It is in line with what Awad-warrad (2018) found, that FDI has a negative and substantial effect on Nigeria's unemployment rate. In essence, there is a substantial and noticeable link between Nigeria's unemployment rate and the exchange rate, and this link holds true in both the short and long term. This confirms what Onyedi (2021) found: that the exchange rate had a favourable and substantial outcome on Nigeria's unemployment rate.

Summary and Conclusion

The present study appraised the relationship between Nigeria's unemployment rate and trade openness from 1985 to 2022. The rate of unemployment in Nigeria was statistically significantly and adversely affected by trading policies, which is consistent with the ARDL approach employed in the study. Therefore, the results of this study contradict the null hypothesis and demonstrate that Nigeria's unemployment rate is significantly influenced by trade openness. Awad-Warrad (2018), Martes (2018), & Madanizadeh & Pilvar (2019) all report comparable results in their respective investigations. The findings of this investigation are in direct opposition to those of Famode, Ngbolua & Makalamba, (2020) and Mohler, Wyss & Weder (2018). In accordance with the implications of this outcome, trade policy has generated employment opportunities that have contributed to the reduction of Nigeria's unemployment rate. Consequently, the study's results underscore the significance of trade policy in the formation of Nigeria's unemployment rate.

Recommendations

On the basis of the findings, the subsequent recommendations are proposed:

a. A trade strategy that encourages the creation of jobs will help reduce Nigeria's high unemployment rate, hence the government should do it.
b. Foreign direct investment (FDI) should also be encouraged since promising business opportunities would attract investors from other countries.
c. Economic policies must be put in place with the intention of increasing government spending on the real sector; this will hopefully rise investment throughout the country and lead to more employment opportunities.

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