ECONOMIC GLOBALIZATION AND UNEMPLOYMENT RATE IN NIGERIA

Ogbonnaya Ikechi Orji
Department of Economics, Ebonyi State University, Abakaliki
ogbonnaya.orji@ebsu.edu.ng

Abstract

This study examined the dynamic impact of economic globalisation on unemployment rate in Nigeria from a broad perspective in which two measures of economic globalisation were used: the trade flow, and the financial flow components. The Ricardian comparative cost advantage theory provides the backbone for the empirical analysis done in this study. Data were collected from National Bureau of Statistics, and the World Bank for the period 1986-2021 for unemployment rate, trade openness, foreign direct investment (FDI) inflow, inflation rate, and real gross domestic product.The interactions among the variables were analysed using the autoregressive distributed lag and the Bounds test methods and the results indicate that the trade flow component of economic globalization had significant positive impact in the long run; the financial/capital flow component has a significant negative impact; and inflation rate has negative relationship, with unemployment rate in Nigeria in the long run. The study concludes that that Nigeria should explore the capital flow component of globalisation more than the trade flow component to achieve the desired objective of curbing the country's soaring unemployment rate. Nigeria should therefore tailor her international economic policies towards greater inflow of FDI because this component of globalisation has unemployment-reducing effect.

Keywords: Bounds test; Economic globalization; Globalization; Trade openness; Unemployment rate

Introduction

The fact that no country exists in autarky implies some level of interdependence among countries to advance their economic prospects, among other motivations. This interdependence has grown in composition and magnitude over time and has metamorphosed into the term globalization, which simply means the world as one global entity in terms of being interconnected. As such, Todaro and Smith (2011) defined globalization as a process by which the economies of the world become more integrated, leading to a global economy, with a view to global economic policymaking. Being a diverse concept, Dreher (2006) identified three main forms of globalization – economic, political, and social – but the present work centres on the first. Argument for economic globalization include that in can improve extraterritorial capital movements (Altiner, Bozkurt &Toktas, 2018), though it can also distort the domestic labour market (Daly, Hullah, Rauf, & Khan, 2017; Ogunrinola&Osabuohien, 2010).

Nigeria embraced globalization more significantly from the mid-1980s and has not looked back ever since (Maduka, Madichie, & Eze, 2017). Historical data from the Central Bank of Nigeria Statistical Bulletin (2021) and World Bank (2021) reveal that Nigeria's trade openness index rose from 0.1 per cent in 1986 to 0.8 per cent in 1990, to 12.4 per cent in 2000, to 36.9 per cent in 2010 and then to 57.5 per cent in 2021 which indicates upward trend. Within the same period, foreign direct investment (FDI) net inflow, as percentage of gross domestic product, increased from 0.66 per cent in 1986 to 4.28 per cent in 1990, dropped to 1.69 per cent in 2000, rose slightly to 2.93 per cent in 2010 and then fell drastically to a mere 0.83 per cent in 2021 which suggests a downward trend.

Nigeria warmly embraced globalizationwith the expectation that improved free trade, competitiveness,

financial integration, foreign investment, and technological advancement would drive down unemployment in particular and ensure all round improvement of the domestic economy in general. This is hardly the case yet as the national unemployment rates have been surging alongside unstable macroeconomic environments like low economic growth and surging inflation. Indeed, these economic challenges have persisted, even worsened at times, despite the country vigorously implementing globalization policies. Specifically, the fact that Nigeria's total unemployment rate rose to 35 per cent (of the labour force population) in 2021 from 5.2% in 1981 leaves one wondering whether the country has really gained from economic globalization.

This worry is further fuelled by the controversy surrounding the contrasting gains of globalization to developed and developing countries which is thought to be skewed in favour of the former (Altiner, Bozkurt &Toktas, 2018). For instance, while there is a general consensus that third world countries like Nigeria can benefit from integration with the global economy, an unresolved issue is that of why the global poverty, unimpressive growth, and especially unemployment, remain predominantly a third world phenomenon.

Previous research interests have focused more on the impact of globalization on the economy as a whole rather than on unemployment (Raji, 2020; Maduka, Madichie, & Eze, 2017; Ajudua& Okonkwo, 2014; Aminu, Ahmad, & Salihu, 2013; Aremo&Alagbile, 2010). The present study therefore aims to investigate the impact of economic globalization on unemployment in the country using a disaggregated approach.

1. LITERATURE REVIEW

2.1.1Unemployment

Unemployment generally refers to a state of joblessness. According to the Resolutions adopted by the International Labour Organization (ILO)'s International Conference of Labour Statisticians in 1982 and 1998, unemployment refers to a situation where persons of working age are “without work”, “currently available for work”, and “seeking work” (i.e. taking specific steps to find employment) during the reference period (Sengenberger, 2011, p.11). The NBS Nigeria follows the ILO standard by using a definition of unemployment that covers persons aged 15-64 years, who during the reference period were available for work, actively seeking work, but were without work (NBS, 2018).

2.1.2Economic globalization

Globalization, according to Albrow and King (1990), is the process of international integration arising from the interchange of world views, products, ideas and other aspects of culture. More specifically, Shangquan (2000) defined economic globalization as the increasing interdependence of world economies as a result of the growing scale of cross-border trade of commodities and services, flow of international capital, and wide and rapid spread of technologies. This study aligns itself with this view. Later, Todaro and Smith (2011) opined that the term globalization refers to a process by which the economies of the world become more integrated, leading to a global economy with a view to global economic policy making.

Dreher (2006) reviewed globalization in four main domains, and he prepared four different indices. This index is composed of one globalization index and three sub-indices as a whole. The sub-indices are economic globalization, political globalization, and social globalization. This index, which is named as KOF globalization index, makes it possible to test the effects of globalization both separately and as a whole (Dorgan, 2016).

2.2 Theoretical review

2.2.1 Comparative (cost) advantage theory

David Ricardo developed the classical theory of comparative advantage in 1817 to explain why countries engage in international trade even when one country's workers are more efficient at producing every single good than workers in other countries (Ricardo, 1817). Premised on the assumption of labour immobility across border, he explained that if two countries capable of producing two commodities engage in the free market, then each country will increase its overall consumption by exporting the good for which it has a comparative advantage while importing the other good, as long as differences in labour productivity exist between both countries (Schumacher, 2012).

According to the tenets of the Ricardian theory, comparative advantage is the basis for free foreign trade which in turn decreases the unemployment rate. Given a small country, where there are two industries and the labour is the only production factor, the foreign trade would increase the relative domestic price of a product manufactured in the exporter industry and thus increase the marginal product of labour. Through the perfect specialization brought by the foreign trade, the marginal product of labour would decrease in the importer industry. Because of the large scale production meant for the importer country, the marginal product of labour would continue increasing in the exporter country, resulting in unemployment decreases through creation of job opportunities occasioned by increased investment incentives (Aremo&Alagbile, 2010).

The drawback of this theory is that it only considers labour costs and excludes all others factors of production. However, the theory is universally acclaimed superior to Adam Smith's absolute cost advantage theory before it.

2.2.2 Factor endowment theory

The Heckscher-Ohlin (H-O) trade theory is considered an improvement on the comparative advantage theory. The theory stipulates that world trade will substantially improve if the basis of trade is the intensity of factor endowment enjoyed by each country (Ohlin, 1933). This suggests that rich countries of the world endowed with abundant capital should specialize in the production of capital-intensive commodities while poor countries endowed with labour factor should specialize in the production of commodities with high labour content. The theory suggests that a consistency of this trend will ensure international convergences in international prices, and improvements in the returns to labour in less developed countries (Aremo&Alagbile, 2010).

The Heckscher-Ohlin theoryassumes that there are two sectors and two factors (labour and capital). Before the foreign trade, the relative price of labour-intensive product would be at lower level in a capital-rich country when compared to the rest of the world. So, it means that there would be an increase in the relative price of capital-intensive product in this country together with the free foreign trade. This would lead to an increase in demand for capital in return for the labour, and thus the average wage level would decrease and finally the unemployment would be increased. On the other hand, since the foreign trade will cause an increase in demand to labour in the labour-rich countries, the wages will increase and also the unemployment rates will decrease (Adamu, Kaliappan, Bani, & Nor, 2017; Dutt, Mitra, & Ranjan, 2009).

Both of the comparative advantage and the factor endowment theories are relevant to the current study because they address the key component of economic globalization – trade flow – and link it to unemployment reduction. As such, either theory fits well into the current study. For simplicity though, the comparative advantage theory provides the theoretical framework for the empirical analysis done in this study.

2.2.3 World system globalization theory

Wallerstein (1974) developed a theoretical framework to understand the historical changes involved in the rise of the modern world. Accordingly, the modern world system, essentially capitalist in nature, followed the crisis of the feudal system and helps explain the rise of Western Europe to world supremacy between 1450 and 1670. According to Wallerstein, his theory makes possible a comprehensive understanding of the external and internal manifestations of the modernization process during this period and makes possible analytically sound comparisons between different parts of the world.

The origins of the modern world-system lie in sixteenth- and seventeenth-century Europe, where colonialism enabled countries like Britain, Holland and France to exploit the resources of the countries they colonized. This allowed them to accumulate capital which was ploughed back into the economy; thus driving forward production even further. This global division of labour created a group of rich countries, but also impoverished many others, thus preventing their development. Wallerstein argues that the process produced a world-system made up of a core, a semi-periphery and a periphery. And although it is clearly possible for individual countries to move 'up' into the core - as have some newly industrialized societies - or to drop 'down' into the semi-periphery and periphery; the structure of the modern world-system remains constant (Giddens, 2009).

The modern world-system is a world-economy: it is "larger than any juridically defined political unit" and "the basic linkage between its parts is economic". It is a capitalist world-economy because the accumulation of private capital, through exploitation in production and sale for profit in a market, is its driving force; it is "a system that operates on the primacy of the endless accumulation of capital via the eventual commodification of everything" (Wallerstein, 1998).

2.3 Empirical review

Nwosa, Keji, Adegboyo, and Fasina (2020) examined the relationship between trade openness and unemployment rate in Nigeria from 1980 to 2018. The study utilized the auto-regressive distributed lag (ARDL) technique and the result of the study showed that trade openness had negative and significant impact on unemployment rate in Nigeria. The empirical research by Awad-Warrad (2018) focused on addressing whether achieving economic growth and liberalizing international trade contribute to creating more jobs and hence resulting in less unemployment. The study utilizes a cross-time series sample covering the period 1990-2015 for seven selected Arab countries (Algeria, Bahrain, Egypt, Jordan, Oman, Saudi Arabia, and Tunisia). The study used panel Weighted Least Squares (WLS) method and found large and significant negative impact of trade openness on unemployment rates in the selected Arab countries when taken as one pooled group.

Hossain, Tahrim, Hossain, and Rahman (2018) examined whether unemployment is affected by trade openness in Bangladesh using time series data for the period from 1990 to 2016. The study used the generalized least squares (GLS) technique and found a significant positive cointegration between trade openness and unemployment rate.

Martes (2018) examined the effect of trade openness on the unemployment rate in 28 Organization for Economic Cooperation and Development (OECD) countries over the period 2000-2016. The researcher reported that trade openness and unemployment are negatively related whether in the short run or the long run. Awad and Youssof (2016) studied the long-run impact of economic globalization on unemployment in Malaysia between 1980 and 2014 using the ARDL model and found that globalization has a significant and negative impact on unemployment in the country in the long run, though the study focused only on trade openness.

Similarly, Kirema (2019) and Nwaka, Uma, and Gulcay (2015) found that trade openness had a significant positive impact on the unemployment rate in Kenya and Nigeria respectively. Conversely, Erer and Erer (2014) looked at the effect of globalization on unemployment in 25 European Union countries covering the period 2000-2012 using spatial panel data analysis method and discovered that globalization reduces the unemployment rate in the studied countries. Gozgor (2014) had similar finding in a panel study of the G7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States).

Osabohien, Awolola, Matthew, Itua, and Elomien (2020) examined the relationship between FDI inflow and employment rate in Nigeria for the period 1985-2017. The authors used the Fully Modified Ordinary Least Squares (FMOLS) method and the Johansen co-integration econometric analytical approach and found that foreign direct investment is negatively affecting the unemployment level in Nigeria.

Onimisi (2014) examined the relationship between FDI and employment generation in Nigeria using a multiple linear regression model for data which covers the period from 2002 to 2012. The study found a negative relationship of FDI with the level of employment in Nigeria but the result is not significant at the 5% level. Zdravković, Đukić, and Bradić-Martinović (2017) examined the relationship between FDI inflow per capita and unemployment rates in 17 transition countries between 2000 and 2014. Fully Modified and Dynamic OLS (FMDOLS) panel estimations indicated that FDI and unemployment are not cointegrated. Effiong, Udofia and Okon (2020) investigated the effect of globalization on unemployment in 20 West African countries between 1991 and 2017. Findings from the VECM revealed that economic globalization reduces unemployment significantly in the short run but not in the long run.

The study by Adamu, Kaliappan, Bani, and Nor (2017) investigated the impact of globalization on unemployment in 35 Sub-Saharan African countries covering the period 2007-2014. The study used the Generalized Method of Moment (GMM) and found that political globalization had a negative impact on unemployment whereas the economic and social globalizations had positive impacts on unemployment. Daly, Hullah, Rauf, and Khan (2017) analysed the impact of globalization on unemployment in Pakistan using annual data for the period 1980 to 2013. Their study used the disaggregated KOF globalization index and employed the ARDL econometric framework and found that economic integration appears to be only marginally beneficial in the short run, but is significantly beneficial in the long run.

On the other hand, Dorgan (2016) reviewed the effects of globalization on employment in Turkey for the period 1970-2011. The study employed the ARDL Bounds test approach to cointegration and found that the series were in a co-integration correlation. The study reported that globalization affected employment positively (unemployment-reducing) in the long run.

We have reviewed several local and international empirical studies and found that there is divergence of opinion as to the impact of economic globalization on unemployment. In terms of measurement of economic globalization, the literature is dominant with studies that measured the concept using the trade flow component (trade openness index) whereas empirical evidence on the unemployment effect of the capital flow component is not abundant. In Nigeria for example, Nwosa, Keji, Adegboyo and Fesina (2020), Nwaka, Uma, and Gulcay(2015), Osabohien, Awolola, Mathew, Itua, and Elomean (2020), and Onimisi (2014) are among the empirical studies that have explored the unemployment-globalization nexus though limited to either of the trade flow and capital flow aspects of economic globalization only. Whereas, Adamu, Kaliappan, Bani, and Nor (2017) and Effiong, Udofia, and Okon (2020) are panel studies on West Africa using the aggregate or disaggregated KOF globalization index. From the review, we noticed the previous studies did not disaggregate economic globalization into the trade and capital flow components. This study filled this research gap.

3. METHODOLOGY AND DATA

The empirical model of this study is hinged on the comparative advantage theoretical underpinning. According to the tenets of the Ricardian theory, comparative advantage engineers free trade between or among countries, and the free foreign trade decreases the unemployment rate in the countries through improved labour productivity and specialization. In fact, Shiozawa (2009) stated that unemployment is the vital question in any trade conflict, implying some connection between both variables. The present study therefore follows the process of model specification used by Effiong, Udofia, and Okon (2020) with some modifications. The modifications come in form of the variables used to represent economic globalization which is more expanded in this study than theirs. Thus,

$$UNR = f(\text{Economic globalization}) \quad 1$$

Where, economic globalization is measured particularly as free trade (trade flow), and capital flow. Therefore,

$$UNR = f(\text{Trade openness, Foreign direct investment}) \quad 2$$

We have opted to estimate the model in Equation 2 taking into account the overall macroeconomic situation in Nigeria within the study period; hence two macroeconomic variables, namely, inflation rate, and economic growth, were incorporated into the model as controls. Thus,

$$UNR = f(\text{Trade openness, Foreign direct investment, Inflation rate, economic growth}) \quad 3$$

Introducing proxies and the error term, the regression equation of interest is,

$$UNR = \beta_0 + \beta_1 TOP_t + \beta_2 FDI_t + \beta_3 INF_t + \beta_4 GDP_t + \varepsilon_t \quad 4$$

A priori, we expect that β_0, β_1, β_2, &< 0 each if economic globalization were to be unemployment-reducing. Then, $\beta_3 < 0$, and $\beta_4 < 0$ highlight the negative trade-off between unemployment and inflation and the expectation that economic growth reduces unemployment, respectively.

All data used in this study are annual time series obtained from secondary sources as follows.

Table 1: Sources of data

Abbreviation	Variable name	Source	Web address
UNR	Unemployment rate	National Bureau of Statistics	https://www.nigerianstat.gov.ng
TOP	Trade openness	Computed using Total trade and real GDP data from 2021 Central Bank of Nigeria Statistical Bulletin	https://www.cbn.gov.ng/documents/statbulletin.asp
FDI	Foreign direct investment	World Bank World Development Indicators	https://databank.worldbank.org/source/world - development -indicators
INF	Inflation rate	Central Bank of Nigeria	https://www.cbn.gov.ng/rates/inflrates.asp
GDP	Real GDP	2021 CBN Statistical Bulletin	https://www.cbn.gov.ng/documents/statbulletin.asp

Source: Researcher's compilation

4.RESULTS

Table 2: Descriptive statistics

Statistic	UNR	TOP	FDI	INF	RGDP
Mean	15.01167	21.25581	1.670437	19.38000	39514.39
Median	13.55000	17.55770	1.412202	12.55000	33365.00
Maximum	35.10000	57.46180	5.790847	72.80000	72393.67
Minimum	2.000000	0.097800	0.352544	5.400000	15237.99
Std. Dev.	9.735598	17.76980	1.215558	17.59206	20954.43
Skewness	0.329362	0.405763	1.795985	1.741491	0.382952
Kurtosis	1.922058	1.947843	6.119480	4.701702	1.512558
Jarque-Bera	2.393814	2.648411	33.95010	22.54043	4.198636
Probability	0.302127	0.266014	0.000000	0.000013	0.122540
Sum	540.4200	765.2090	60.13575	697.6800	1422518.
Sum Sq. Dev.	3317.365	11051.80	51.71537	10831.82	1.54E+10
Observations	36	36	36	36	36

Source: Researcher's computation from EViews 12, 2023

Table 2 shows the descriptive statistics of the study data such as the central tendency and dispersions. Unemployment rate averaged 15% annually withing the period covered in this study, trade openness averaged 21%, FDI inflow averaged 1.7% of GDP, and inflation rate averaged 19.4%. Skewness, Kurtosis, Jarque-Bera, and its p-value are all measures of distribution. Variables with p-values of at least 0.05 are normally distributed, e.g., UNR, TOP, and real GDP.

We used the Augmented Dickey-Fuller (ADF) and the Phillips-Perronmethods to conduct the unit root test, as presented in Tables 3 and 4.

Table 3: Summary of Augmented Dickey Fuller (ADF) unit root test result

Variable	ADF Test Statistic @ Level	5% critical value	P-value	ADF Test Statistic @ 1st Difference	5% critical value	P-value	Order of Integration
UNR	-0.1839	-2.9484	0.932	-5.3581	-2.9511	0.000	I(1)
TOP	0.0203	-2.9484	0.954	-5.8109	-2.9511	0.000	I(1)
FDI	-4.0391	-2.9484	0.004	-	-	-	I(0)
INF	-3.4037	-2.9511	0.018	-	-	-	I(0)
LRGDP	-0.9893	-2.9511	0.746	-3.2570	-2.9511	0.025	I(1)

Source: Researcher's computation from EViews 12, 2023

The result in Table 3 shows that the variables have varied or mixed orders of integration, namely, zeros (FDI & INF) and ones (UNR, TOP & LRGDP) according to the ADF method.

Table 4: Summary of Phillips Perron (PP) unit root test result

Variable	Phillips-Perron Test Statistic @ Level	5% critical value	P-value	Phillips-Perron Test Statistic @ 1st Difference	5% critical value	P-value	Order of Integration
UNR	0.2061	-2.9484	0.969	-5.6631	-3.6394	0.000	I(1)
TOP	0.3384	-2.9484	0.977	-5.8283	-2.9511	0.000	I(1)
FDI	-3.9437	-2.9484	0.005	-	-	-	I(0)
INF	-2.8955	-2.9484	0.056	-7.1813	-2.9511	0.000	I(1)
LRGDP	-0.5559	-2.9484	0.868	-3.2570	-2.9511	0.025	I(1)

Source: Researcher's computation from EViews 12, 2023

As presented in Table 4, the Phillips-Perron unit root test method confirms the earlier results from the ADF method that at least one variable (FDI) is stationary at level whereas the others (UNR, TOP, INF, & LRGDP) are stationary at first difference. Based on the results, the researcher used the autoregressive distributed lag (ARDL) method to estimate the study model.The optimum lag length for the ARDL estimation was determined using the vector autoregression (VAR) lag order selection criteria which we have shown in Table 5.

Table 5: Vector autoregression (VAR) lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-405.4124	NA	43660.07	24.87348	25.10023	24.94977
1	-282.2550	201.5303	116.2339	18.92455	20.28501*	19.38230
2	-247.5231	46.30923*	72.07821	18.33473	20.82891	19.17395
3	-211.9700	36.63048	51.95181*	17.69515*	21.32305	18.91583*

* indicates lag order selected by the criterion

Source: Researcher's computation from EViews 12, 2023

As shown in Table 5, the Final Prediction Error (FPE) and the Akaike information criteria (AIC) recommended various 3 lag lengths. The study goes by this since it is the majority take.

Table 6: Short-run result (Dependent variable: UNR)

Variable	Coefficie	Std. Err	t-Statist	Prob.
C	85.7139	39.1873	2.18728	0.039
UNR(-1)*	-0.4723C	0.14263	-3.31126	0.003
TOP(-1)	0.4469C	0.11794	3.78910	0.000
FDI**	0.60384	0.55785	1.08244	0.290
INF(-1)	-0.16965	0.06805	-2.49312	0.020
LRGDP(-1)	-7.90231	3.93544	-2.00798	0.056
D(TOP)	0.16083	0.10604	1.51670	0.143
D(TOP(-1))	-0.26712	0.12397	-2.15460	0.041
D(INF)	-0.1160C	0.05431	-2.13601	0.043
D(INF(-1))	0.10875	0.04986	2.18092	0.039
D(LRGDP)	-50.6529	19.7111	-2.56976	0.017
CointEq(-1)*	-0.4723C	0.08031	-5.88090	0.000
R-squared	0.54439	Mean dependent var		0.82647
Adjusted R-squared	0.46303	S.D. dependent var		3.41577
S.E. of regression	2.50300	Akaike info criterion		4.83164
Sum squared resid	175.421	Schwarz criterion		5.10100
Log likelihood	-76.138C	Hannan-Quinn criter.		4.92350
Durbin-Watson stat	2.00559			

Source: Researcher's computation from EViews 12, 2023

Judging from the p-values of the results in Table 6, the first lag of trade openness value, (TOP_{-1}), exerts a significant positive influence on unemployment rate; whereas FDI has no significant impact on unemployment rate.The first lag of inflation rate and its first difference have a significant negative impact on unemployment rate in Nigeria; economic growth has a significant negative impact on UNR; the short-run model has a speed of adjustment of 47% per annum, per annum which means convergence towards long-run equilibrium in a little over one year following disequilibrium.

The study tested for long-run relationship among the study variables using the ARDL Bounds test and obtained the following result.

Table 7: ARDL Bounds test result

F-Bounds Test		Null Hypothesis: No levels relatic		
Test Statistic	Value	Signif	I(0)	I(1)
F-statistic	4.734856	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Researcher's computations from EViews 12, 2023

As indicated in Table 7, the F-statistic of 4.7 is greater than the 5% upper Bound value of 3.49. This is the necessary condition for rejecting the null hypothesis that 'No long run relationships exist'. We therefore conclude that long-run relationships exist among the study variables.

Table 8: Long-run result (Dependent variable: UNR)

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficie	Std. Erro	t-Statisti	Prob.
TOP	0.94622	0.32505	2.91100	0.007
FDI	-0.27852	0.13144	2.11898	0.034
INF	-0.35921	0.17012	-2.11155	0.045
LRGDP	-16.7315	10.9054	-1.53423	0.138
C	181.481	110.421	1.64354	0.113

Source: Researcher's own computations from EViews 12, 2023

The result in Table 8 shows that TOP has positive impact on long-run unemployment rate, FDI and inflation rate have significant negative effects on the long-run unemployment rate, and economic growth does not have significant impact on unemployment rate in the long run, even though it is negatively signed.

We conducted model diagnostics on the estimated model by administering normality, autocorrelation, heteroskedasticity, and stability test.

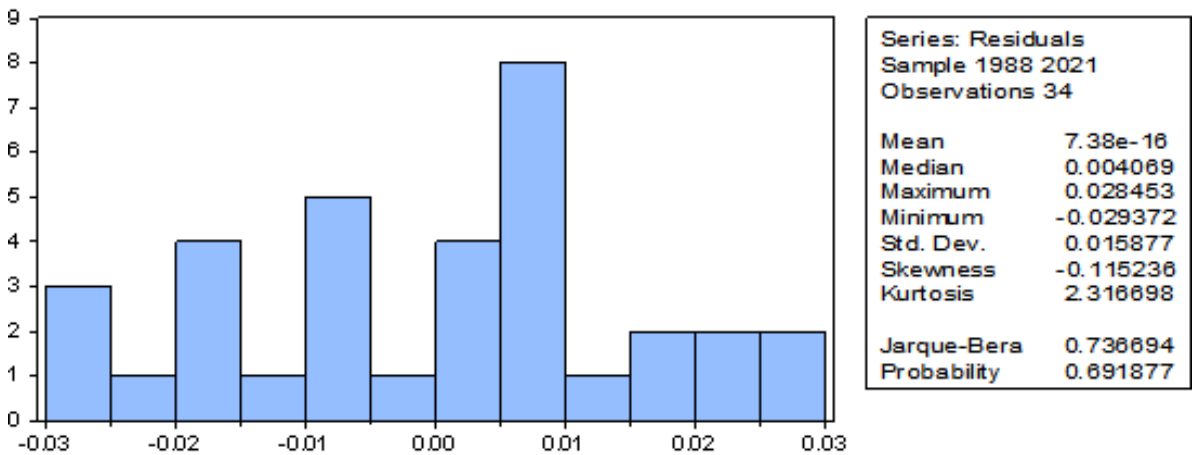

Fig. 1: Histogram normality test result
Source: Researcher's own computations from EViews 12, 2023

In Fig.1, the skewness, kurtosis, and Jarque-Bera statistics are measures of distribution. The p-value is used to test the null hypothesis that the residuals are normally distributed. The p-value of 0.69, greater than 0.05, implies acceptance of the null hypothesis at the 5% level of significance.

Table 9: Autocorrelation and serial correlation results

Date: 07/02/23 Time: 10:42 **(Panel A)**
Sample (adjusted): 1988 2021
Q-statistic probabilities adjusted for 1 dynamic regressor

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
. | . |	. | . |	1	-0.013	-0.013	0.005	0.939
.*| . |	.*| . |	2	-0.160	-0.160	1.062	0.588
**| . |	**| . |	3	-0.217	-0.222	2.919	0.404
. |** |	. |** |	4	0.250	0.227	5.495	0.240
. | . |	.*| . |	5	-0.013	-0.090	5.509	0.357

*Probabilities may not be valid for this equation specification.

Panel B

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 3 lags

F-statistic	0.935044	Prob. F(3,20)	0.442
Obs*R-squared	4.182213	Prob. Chi-Square(3)	0.242

Source: Researcher's own computations from EViews 12, 2023

The result in Panel A in Table 9 shows that the p-values of the Q-Statistics are greater than 0.05 for each of the five lags, and in Panel B the p-values of the F-statistics and Chi-Square statistics are each greater than 0.05. These two sets of results indicate that there is no autocorrelation in the estimated ARDL model which is desirable.

Table 10: Result of heteroskedasticity test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	1.783488	Prob. F(10,23)	0.121
Obs*R-squared	14.84977	Prob. Chi-Square(10)	0.137
Scaled explained SS	10.40488	Prob. Chi-Square(10)	0.405

Source:Researcher's own computations from EViews 9

In Table 10, the F-statistic and the Chi-Square statistic are used to determine whether the regression residuals are homoskedastic (constant variance of the error terms). As shown in the Table, the p-values of these statistics are each greater than 0.05 which implies that the null hypothesis that there is no heteroscedasticity is accepted. Thus the assumption of constant variance is not violated.

Model stability implies that the regression equation is correctly specified in its linear form. The Ramsey regression specification error (RESET) test was used to verify this in the current study.

Table: 11: Ramsey RESET Test

	Value	Df	Probabilit
F-statistic	0.421710	(2, 21)	0.6614
F-test summary:			
	Sum of Sc	Df	Mean Squares
Test SSR	6.773383	2	3.386692
Restricted SSR	175.4214	23	7.627016
Unrestricted SSR	168.648(	21	8.030857

Source: Researcher's own computations from EViews 12, 2023

The result in Table 11 shows an F-statistic of 0.42 and a p-value of 0.66. Since the p-value is greater than 0.05, we accept the null hypothesis that the regression model is correctly specified in its linear form. Thus, the model is stable, fit for prediction.

We also performed hypothesis test on the three null hypotheses of interest to the study.

Hypothesis One

H_0: Trade flow component of economic globalization does not have significant impact on total unemployment rate in Nigeria.

Decision rule: Reject H_0 if the p-value of the estimated t-Statistic of the trade openness (TOP) variable is less than 0.05; otherwise, do not reject H_0.

Result and conclusion: The ARDL result in Table 6 shows that the short-run coefficient of the TOP variable is 0.45 with T-statistic 3.79 and p-value 0.001. Similarly, the long-run coefficient of the variable is 0.95 with T-statistic of 2.9 and p-value of 0.008. In both cases, the p-values are clearly less than 0.05, so we have enough evidence to reject the null hypothesis which implies that the trade flow component of economic globalization is driving the nation's unemployment rate upward.

Hypothesis Two

H_0: Capital flow component of economic globalization does not have significant impact on unemployment rate in Nigeria.

Decision rule: Reject H_0 if the p-value of the estimated T-statistic of the foreign direct investment (FDI) variable is less than 0.05; otherwise, do not reject H_0.

Result and conclusion: The ARDL result in Table 6 shows that the short-run coefficient of the FDI variable is 0.6 with T-statistic 1.08 and p-value 0.29. However, the long-run coefficient of the variable is -0.28 with T-statistic of -2.12 and p-value of 0.034. In the latter case, the p-value is less than 0.05, so we reject the null hypothesis. This implies that the capital flow component of economic globalization is driving the nation's unemployment rate downward in the long-run.

Hypothesis Three

H_0: Inflation does not significantly impact total unemployment rate in Nigeria.

Decision rule: Reject H_0 if the p-value of the estimated T-statistic of the inflation variable (INF) is less than 0.05; otherwise, do not reject H_0.

Result and conclusion: The ARDL result in Table 6 shows that the short-run coefficient of the INF variable is -0.17 with T-statistic -2.49 and p-value 0.02; and the long-run coefficient is -0.26 with T-statistic -2.11 and p-value of 0.046. In both cases the p-values are less than 0.05, so we reject the null hypothesis. This implies that increase in inflation has a negative effect on unemployment rate in the country.

In summary, the study found that the trade flow component of economic globalization is increasing unemployment rate in Nigeria. This implies that the structure of Nigeria's foreign trade between 1986 and 2021 has not translated into unemployment reduction in the country which calls for a review of the country's foreign trade policies to align more with the country's need to curb unemployment. Secondly, the finding that the capital flow component of economic globalization, as measured by foreign direct investment (FDI) as a percentage of the GDP, has significant negative impact on unemployment rate in Nigeria implies that inflow of foreign capital is instrumental for unemployment reduction in Nigeria and so should be encouraged.

The study therefore concludes that economic globalization is helping to curb unemployment rate through increased inflow of foreign direct investment. The study recommends as follows:

1. Nigeria should employ import restrictive measures and embrace export promotion measures so as to lessen the adverse effect of trade openness on unemployment rate in the country.
2. Nigeria should tailor their international economic policies towards attraction of more inflow of FDI because this component of globalization has unemployment-reducing effect.
3. The monetary authorities in Nigeria should use contractionary monetary policy to keep inflation in check so as to limit the pressure on unemployment rate in the country.

References

Adamu, P., Kaliappan, S. R., Bani, Y., & Nor, M. N. (2017). Impact of globalization on unemployment in Sub-Saharan African (SSA) countries. *Governance and Sustainability of Global Business Economics Conference, 14-15 August 2017,* Malaysia, Universiti Putra Malaysia.

Ajudua, E.I. & Okonkwo, O.N. (2014). Empirical review of globalization and Nigerian economic performance, *European Journal of Business and Management, 6*(33), 36-45.

Albrow, M., & King, E., (1990, eds.), *Globalization, knowledge and society*. London: Sage.

Altiner, A., Bozkurt, E. & Toktaş, Y. (2018). The effect of economic globalization on unemployment in emerging market economies. *Journal of Ataturk University Institute of Social Sciences 22*(2), 1763-1783.

Aminu, U., Ahmad, A.H. & Salihu, M. (2013). Globalization and its impact on the performance of the Nigerian economy. *Munich Personal RePEc Archive*, *MPRA Paper No. 75231*, posted 24 Nov 2016 15:11 UTC, available online at: https://mpra.ub.uni-muenchen.de/75231/

Aremo, A. G. & Alagbile, M. A. (2010). Empirical analysis of the impact of globalization on labor force utilization: Evidence from Nigeria. *African Economic and Business Review 8*(1), 1-18.

Awad, A. & Youssof, I. (2016). The impact of economic globalization on unemployment: The Malaysian experience. *The Journal of International Trade & Economic Development, 15*(2), 1-21.

Awad, A. (2019). Economic globalization and youth unemployment – Evidence from African countries. *International Economic Journal, 33*, 252-269, https://www.doi.org/10.1080/10168737.2019.1604787

Awad-Warrad, T. (2018). Trade openness, economic growth and unemployment reduction in Arab region. International Journal of Economics and Financial Issues, 8(1), 179-183.

Central Bank of Nigeria (2021). *Statisticalbulletin*. Abuja: Central Bank of Nigeria.

Daly, V., Hullah, F. Rauf, A., & Khan, G. Y. (2017). Globalization and unemployment in Pakistan. *Asian Economic and Financial Review, 7*(7), 634-643.

Dorgan, B. (2016). The effects of globalization on employment: Bounds test approach in Turkey sample. *Asian Economic and Financial Review, 6*(10), 620-633, https://doi.org/10.18488/journal.aefr/2016.6.10/102.10.620.633.

Dreher, A. (2006). Does globalization affect growth? Evidence from a new index of globalization. *Applied Economics, 38*(10), 1091-1110.

Dutt, P., Mitra, D., & Ranjan, P. (2009). International trade and unemployment: Theory and cross-national evidence. *Journal of International Economics*, *78*(1), 32-44.

Effiong, U. E. (2021). The state, globalization and development: The case study of Nigeria. *International Journal of Research, 8*(2), 130-150.

Effiong, U. E., Udofia, B., & Okon, J. I. (2020). Globalization and unemployment: Empirical evidence from West African Sub-Region. *International Journal of Economics and Management Studies, 7*(10), 13-21, https://doi.org/10.14445/23939125/IJEMS-V7I10P103.

Erer, D. & Erer, K. (2014). The effects of globalization on unemployment in EU countries: Spatial panel

data analysis. *Çukurova University Journal of FEAS, 18*(2), 21-26.

Gozgor, G. (2014). The impact of trade openness on the unemployment rate in G7 countries. *Journal of International Trade & Economic Development, 23*(7), 1018-1037.

Gozgor, G. (2016). International trade and manufacturing employment in developed economies: An empirical study. *Regional and Sectoral Economic Studies*, *16*(1), 5-16.

Hossain, M. I., Tahrim, F., Hossain, S., & Rahman, M. (2018). Relationship between trade openness and unemployment: Empirical evidence for Bangladesh. *Indian Journal of Economics and Development*, *6*(8), 1-12.

Kirema, P. K. (2019). Effect of trade openness on unemployment rate in Kenya. *Masters thesis.* University if Nairobi, Kenya.

KOF (2015). Globalization index database. Available from http://globalization.kof.ethz.ch/ [Accessed 27.04.2022].

Maduka, A. C., Madichie, C. V., & Eze, E. A. (2017). Globalization and economic growth: Evidence from Nigeria. *International Journal of Social Science and Economic Research, 2*(8), 4177-4191.

Martes, E. (2018). The effect of trade openness on unemployment: Long-run versus short-run. *B.Sc. Thesis,* Erasmus School of Economics, Erasmus Universiteit Rotterdam. Available at: https://thesis.eur.nl/pub/43403/.

National Bureau of Statistics (2018). Unemployment and underemployment watch. Abuja: National Bureau of Statistics Nigeria.

Nwaka, I. D., Uma, K. E., & Gulcay, T. (2015). Trade openness and unemployment: Empirical evidence for Nigeria. *The Economic and Labour Relations Review, 26,* 117–136. https://www.doi.org/10.1177/1035304615571225

Nwosa, P., Keji, S., Adegboyo, S., & Fasina, O. (2020). Trade openness and unemployment rate in Nigeria. *Oradea Journal of Business and Economics,5*(2), 52-62.

Obayelu, A. E. (2007). Effects of economic globalisation on employment trend and wages in developing countries: Lessons from Nigeria experiences. *Selected paper for presentation at the twenty second National Conference of Labour Economics organized by Association of Italian Economists of Labour (AIEL), September 13-14.*

Ogunrinola, I. S., & Osabuohien, E. S. C. (2010). Globalisation and employment generation in Nigeria's manufacturing sector (1990-2006). *European Journal of Social Sciences*, *12*(4), 581-593.

Ohlin, B. (1933). *Interregional and international trade*. London: Harvard University Press.

Onimisi, B. T. (2014). Foreign direct investments and employment generation nexus in Nigeria. *Journal of Educational and Social Research, 4*(5), 119-128.

Osabohien, R., Awolola, O. D., Matthew, O., Itua, O. Q., & Elomien, E. (2020). Foreign direct investment inflow and employment in Nigeria. *Investment Management and Financial Innovations,17*(1), 77-84. doi:10.21511/imfi.17(1).2020.07.

Raji, R. O. (2020). Globalization and technological innovation: Which impact on the rise of unemployment? *Risk and Financial Management, 2*(2), 73-89, https://doi.org/10.30560/rfm.v2n2p73.

Ricardo, D. (1817). On the principles of political economy and taxation. In J. Murray (ed). Economic theories. NY: Oxford University Press. 160-162.

Savina, G., Haelg, F., Potrafke, N., & Sturm, J-E. (2019). The KOF globalisation index – Revisited. *Review of International Organizations, 14*(3), 543-574, https://doi.org/10.1007/s11558-019-09344-2

Schumacher, R. (2012). Free trade and absolute and comparative advantage: A critical comparison of two major theories of international trade. Universitätsverlag Potsdam, 51-52.

Sengenberger, W. (2011). *Beyond the measurement of unemployment and underemployment: The case for extending and amending labour market statistics.* International Labour Office, Geneva: ILO.

Shangquan, G. (2000). Economic globalization: Trends, risks and risk prevention. *Economic and Social Affairs, CDP Backround Paper 1*, 1-8.

Shiozawa, Y. (2009). Samuelson's implicit criticism against Sraffa and the Sraffians and two other questions.The Kyoto Economic Review, 78(1), 19-37.

Simon, M. K. & Goes, J. (2013). *Dissertation and scholarly research: Recipes for success.* Seattle. WA: Dissertation Success LLC.

Todaro, M. P. & Smith, S. C. (2011). *Economic development (11th ed.).* England: Pearson Education Limited.

World Bank (2021). *WorldDevelopment indicators.* Washington D.C.: The World Bank.

Zdravković, A., Đukić, M., & Bradić-Martinović, A. (2017). Impact of FDI on unemployment in transition countries: Panel cointegration approach. *Industrija, 45*(1), 161-174. https://www.doi.org/10.5937/industrija45-13548.

APPENDIX I: DATA

KÑMØ	Ļ Í Ī ÄÃ Á	Ì Î Ï ÄÃ Å	ĞGHÆÃ ĠGĨ	HÍ ĞÄÃ Å	Ī ĠGĨ Æ’B)
ĈEÐĎ	DBĊ	ĆBĆEÐÐ	ĆBĎDÐÇDĊ	DBÐ	ĈDÆĊĐBE
ĈEÐÐ	Ð	ĆBĊĈDE	ĆBĊDČDÇÇ	ĈĈBĊ	ĈDÆĎĊBE
ĈEÐÐ	DBĊ	ĆBĊČÇĎ	ĈBĈDEĆÐ	DÇBD	ĈĎÆĈDBĊ
ĈEÐE	ÇBD	ĆBDĈĊĎ	ĆBÐĎČĎEĎ	DĆBD	ĈÐÆEÇBĎ
ĈEEĆ	ĊBD	ĆBÐĆĎ	ÇBČÐČĆÐÐ	ÐBD	ĈEÆĊĆDBĎ
ĈEEĈ	ĊBĈ	ĈBĆEEĈ	ĈBĆÐÐEDĈ	ĈĊ	ĈEÆĈEEBĆ
ĈEEČ	ĊBÇ	ĈBÐÐÐĎ	ĈBÇDĆĊĈÐ	ÇÇBĎ	ĈEÆĎČĆBĈ
ĈEEĊ	ČBÇ	ĈBECĐE	ĈBÐÐĎĆĈÐ	DÐBČ	ĈEÆČÐBE
ĈEEÇ	Č	ĈBÐÇĎČ	ÇBÐÇÐÐE	DÐ	ĈEÆÐEBĈ
ĈEED	DBE	ÐBĊÐĆE	DBÐECÐÇÐ	ÐČBD	ČĆÆDĊBČ
ĈEEĎ	DBÇ	ÐBÐÇĆČ	ĆBÐĎČĈEĎ	ČEBĊ	ČĈÆÐÐBE
ĈEEÐ	DBD	EBÐÐEE	ĆBEÐÐDČĈ	ÐBD	ČĈÆÐÐEBĈ
ĈEEÐ	Ď	ÐBĈĈĎĊ	ĆBÐĎČČÐĎ	ĈĆ	ČČÆĊĆBÐ
ĈEEE	ĈEBE	EBĈĊÐĊ	ĆBDÇÐĎĈĎ	ĎBĎ	ČČÆÇEBÇ
ČĆĆĆ	ĈÐBĈ	ĈČBĊÐČĈ	ĈBĎECDDÐ	ĎBE	ČĊÆĎÐÐBČ
ČĆĆĈ	ĈĊBD	ĈČBÐĎÐE	ĈBĎÇĈÐĊE	ĈÐBE	ČDÆĎÐBD
ČĆĆČ	ĈČBČ	ĈĈBČÇÐ	ĈBĎĆÐČÐÇ	ĈČBE	ČÐÆDÐBÐ
ČĆĆĊ	ĈÇBD	ĈĎBČEÐÇ	ĈBEĎÇÐČÐ	ĈÇ	ĊĈÆÐĆEBÇ
ČĆĆÇ	ĈĊBÇ	ĈÐBÐĈÐ	ĈBECĈÇĎĊ	ĈD	ĊDÆĆČĆBD
ČĆĆD	ĈĈBE	ČĎBÐĈĈ	ĈBĊÐÇĆÐĎ	ĈÐBE	ĊÐÆÇÐÇBE
ČĆĆĎ	ĈČBĊ	ČĎBĆÐDE	ČBÐČÐÐĊ	ÐBČ	ĊEÆEDBÐ
ČĆĆÐ	ĈČBD	ČÐBÇÐÇ	ČBĆDĎĆČÇ	DBÇ	ÇČÆČČBÇ
ČĆĆÐ	ĈÇBE	ĊÇBÐĊĈĎ	ČBĈÐEEĊÇ	ĈĈBĎ	ÇĎÆĆČBD
ČĆĆE	ĈEBD	ČÐBČDDĊ	ČBÇĊĈČĈE	ĈĈBD	ÇEÆDDĎBĈ
ČĆĈĆ	ČĈBÇ	ĊĎBEÇĊĈ	ČBEĊĈĊĊĎ	ĈĊBD	DÇÆĎĈČBĆ
ČĆĈĈ	ČĊBE	ÇDBĎĈĊ	ĈBĎĎÐČĈĊ	ĈĆBD	DÐÆĎĈBĆ
ČĆĈČ	ČÇBĊ	ÇĈBDDÐÇ	ČBĈÐĊĆĈĊ	ĈČBČ	DEÆČEBE
ČĆĈĊ	ČEBD	ĊEBĆÐĊ	ĈBDDČĈĈD	ÐBD	ĎĊÆĈÐBD
ČĆĈÇ	ČÐBÇ	ĊÇBEEĎČ	ĈBĆECDDE	ÐBĈ	ĎÐÆĈDČBE
ČĆĈD	ČĎBD	ČÐBÐĎĈĊ	ĆBÐDÐĎĈČ	EBĆĈ	ĎEÆĆČĊBE

ČĆĈĎ	ČÇBÐÐ	ČĎBEĎČD	ĆBĎČEÇÇÐ	ĈDBÐ	ĎÐÆĊĈBČÇ
ČĆĈÐ	ČĆBÇČ	ĊĎBĈEÐE	ĈBĆEEÇĆĊ	ĈĎBD	ĎÐÆEĆBEÐ
ČĆĈÐ	ČĊBĈĊ	ÇĎBĆDÐĈ	ĆBEĊČČÐÐ	ĈČBĆE	ĎEÆÐEEBEÇ
ČĆĈE	ČÐBĈ	DĎBDĊÇÇ	ĆBDĆČEĆÇ	ĈĈBÇ	ÐĈÆĖÐÐBĖĊ
ČĆČĆ	ĊĊBĊ	ÇÐBĊČČÐ	ĆBĖĊĎČĆD	ĈĊBČD	ÐĆÆĈÇBĊÐ
ČĆČĈ	ĊDBĈ	DÐBÇĎĈÐ	ĆBĖĊČÇĈĊ	ĈDBĎĊ	ÐČÆEĊBĎÐ

Sources: CBN (2022), World Bank (2021), NBS (2021)