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Trade Facilitation and Unemployment in Nigeria

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Abstract: *This study examined the impact of trade facilitation on unemployment in Nigeria from 1985 to 2022. Trade facilitation was measured using trade openness, foreign direct investment (FDI), real exchange rate, and official development assistance, while unemployment was measured by the unemployment rate. An ex-post facto research design was used, relying on annual time series data from the Central Bank of Nigeria. Data analysis included descriptive statistics, trend analysis, ADF unit root test, bounds cointegration test, and ARDLFindings showed a long-run relationship among the variables. Trade openness and FDI had a significant negative effect on unemployment in both the short and long run. Real exchange rate had a positive but non-significant effect, while official development assistance had a negative and significant effect in the short run and a negative, non-significant effect in the long run.The study concluded that trade facilitation helps reduce unemployment in Nigeria. It recommended that the government promote trade openness in labour-intensive sectors and support SMEs in accessing global markets to boost job creation.*

Keywords: unemployment, exchange rate, investment, time series, labour, Nigeria**.**

INTRODUCTION

Countries across the globe, regardless of their level of development, grapple with various economic challenges. For underdeveloped and developing nations, one of the most pressing issues is **unemployment** (Obele, 2019). The International Labour Organization (ILO) defined unemployment as the measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals in the labour force. Unemployment could be frictional, seasonal, structural and cyclical. The kind of unemployment in Nigeria is structural in nature, i.e. there is a huge difference between demand and supply of labour. The rising population of the country is faster than the job

opportunities; a situation in which the birth rate is rising, death rate falling and the population growth is between 2.5% - 3%, unemployment is bound to exis. However, a reduction in unemployment or achievement of full employment is one of the macroeconomic goals every economy seeks to achieve. Olawunmi and Ayinla (2017) noted that from time immemorial, the achievement of macroeconomic goals (especially full employment) has been a policy priority of every economy whether developed or developing. The realization of full employment is not automatic but requires policy guidance. This policy guidance represents the objectives of economic policy. Globally, government has always introduced and implemented economic policies to achieve desired macroeconomic objectives. One of these economic policies is trade policy aimed at achieving full employment through trade facilitation. According to Gbanador (2005), the performance of an economy in terms of growth and development is not only based on domestic production and consumption activities but also on international transactions of goods and services. Every nation buys and also sells what it produces to other countries. This act of buying and selling is what international trade is all about. Gbosi (2019) sees international trade as the trade that cuts across the international boundary and involved the use of foreign currencies. International trade creates a flow of goods and services from one nation to another and this process helps to enhance employment creation and controls unemployment rate. Therefore, trade across the boundary of a country is very crucial in the performance of the economy because it facilitates the expansion of markets, creates jobs, reduces the level of poverty, destroys monopolies by not aiding the control of a market by a few industries or countries and improve the performance of an economy.

Trade facilitation, the process of simplifying and streamlining international trade procedures, plays a crucial role in promoting employment and reducing unemployment through various channels. Trade facilitation fosters the development of trade-related services, including logistics, transportation, finance, insurance, and information technology, which play a vital role in facilitating international trade. These services sectors are significant sources of employment, particularly for skilled and semi-skilled workers (Oladosu, 2022). According to Nchom and Udeorah (2021) trade facilitation contributes to expanding trade volumes by reducing transaction costs, administrative burdens, and delays associated with cross-border trade. As trade volumes increase, demand for goods and services rises, leading to the creation of new jobs in various sectors such as manufacturing, transportation, logistics, and services. For example, streamlined customs procedures and efficient border clearance processes reduce the time and costs involved in exporting and importing goods. This encourages firms to engage more actively in international trade, leading to increased production and employment opportunities. In addition, Egbuche, Kalu and Otto (2018) asserted that trade facilitation disproportionately benefits small and medium-sized enterprises (SMEs) by reducing the barriers they face in accessing international markets. Simplified customs procedures, reduced documentation requirements, and improved trade infrastructure enable SMEs to participate more actively in global trade, expand their customer base, and grow their businesses. Thus, increased access to export markets creates opportunities for SMEs to diversify their products, upgrade technology, and adopt best practices, which enhances their competitiveness and sustainability, leading employment generation and reduction in unemployment. In other words, as SMEs expand and become more integrated into global value chains, they create jobs not only within their own enterprises but also in the surrounding communities through indirect employment generated by supply chain linkages and multiplier effects. Therefore, trade policies not only provide close incentives to sales in both local and external markets but lead to resource allocation according to comparative advantage, create room for greater capacity utilization, foster technological improvement in response to competition abroad and in labour abundance economies, contributes to job creation which in turn leads to reduction in unemployment (Briggs, Nteegah & Ohale, 2022). Relatedly, the Nigerian government has over the years implemented various trade policies - export promotion strategy in 1981;

trade liberalization policy in 1986; exchange rate liberalization in 1986; establishment of the Nigerian Export-Import Bank (NEXIM) in 1991; and entered several bilateral and multilateral trade agreements. These trade policies were expected to increase trade relations with the global community through ease movement of commodities across borders, importation of cutting-edge and modern technologies, accessibility of foreign currency, enhance inflow of foreign capital and knowledge spill-over, and facilitate the participation of foreign firms in domestic trade which could promote job creation (UNCTAD, 2013). The inflow of these resources is expected to enhance the country's international competitiveness, leading to higher production and generation of employment opportunities. Furthermore, Khattry and Rao (2022) argued that trade policy influences trade tax revenue. The removal of quotas and reduction of tariffs on imported goods lead to a substantial increase in trade volumes and a decrease in the incentive to evade taxes; consequently, resulting in higher trade revenue. The increase in trade revenue is expected to enhance the government finances in providing employment opportunities (Ifeakachukwu, 2018). This study, in line with the foregoing, is therefore set out to examine the effect of trade facilitation on unemployment in Nigeria. The aim of this study is to determine the effect of trade facilitation on unemployment in Nigeria. Specifically, the study seeks to achieve the stated objectives. Ascertain the effect of degree of trade openness on unemployment rate in Nigeria, Analyze the effect of foreign direct investment on unemployment, Determine the effect of real exchange rate on unemployment rate, Evaluate the effect of official development assistance on unemployment rate etc.

Statement of the Problem

Over the years, the Nigerian governments have made efforts to achieve acceptable growth and development. They have done this by initiating sound trade relation policies to help achieve the major macroeconomic goals. Consequently, degree of trade openness, foreign direct investment and official development assistance through trade relations with other countries have continued to rise in the last decade but this increase has not translated to meaningful growth and development as Nigeria still ranks among the poorest countries in the world. In addition, many Nigerians have continued to wallow in abject poverty while more than 50 percent live on less than US$2 per day. Couple with this, is dilapidated infrastructure (especially roads and power supply) that has led to the collapse of many industries, leading to high level of unemployment. This has made unemployment as one of the greatest challenges facing the Nigerian economy as it has maintained a rising trend over the years. Unemployment in Nigeria after sixty-three years of political independence is said to be the highest and this has made life difficult especially among the youth with enormous consequences. Over 90 universities in Nigeria produce thousands of graduates every year. This is a welcome development but they linger in the labour market without jobs. Employers chalk it to them not being qualified for the available jobs. Out of frustration, most of them end up engaging in various social vices, such as robbery, kidnapping, drug trafficking, internet fraud, etc. just to earn a living. This clearly shows how disastrous unemployment is in Nigeria. Moreover, in spite of many frequently changing trade and other macro-economic policies such as exchange policy, Nigeria has not been able to put her economic potentials into use to achieve macro-economic objective of full employment/low unemployment rate. In view of these disturbing variances, can we say that the trade facilitation has not been playing its parts well in generation employment and in controlling unemployment in Nigeria over time? This is an empirical question that this study aims to answer. It is against this background that this study is designed to empirically determine the effect of trade facilitation on unemployment in Nigeria.

LITERATURE REVIEW

Theoretical Framework

Many theories of trade and unemployment exist but this study will only review some of these theories:

Theory of Absolute Advantage

The theory of Absolute Advantage was propounded by Adam Smith. In his book on "an enquiry into nature and cause of wealth of nations" published in 1776. Adam Smith stated that countries should trade with one another and would gain by trading with one another. The theory of Absolute Advantage therefore states that a country should specialized in the production of that commodity which it can produce more cheaply than others and exchange it for the commodities that cost less in other countries. In other words, a country should specialize in the production of those commodities in which it has absolute advantage in its production. Adam Smith stressed for non-interference of trade by governments. In other words, he stressed for free trade as the best trade policy for nations (Ude & Agodi, 2015). Adam Smith first described the principle of absolute advantage in the context of trade, using labour as the only input, since absolute advantage is determined by a simple comparison of labour productivities; it is possible for a party to have no absolute advantage in anything, in that case, according to the theory of absolute advantage, no trade will occur with the other party. The principle of absolute advantage is the ability of a party (an individual, or firm, or country) to produce more of a good product or service than competitors, using the same amount of resources (Muhammad & Benedict, 2018).

Classical Theory of Unemployment

The view of most economists always goes with their thinking at that particular time. Traditionally, this theory of unemployment has been looked upon in terms of aggregate. Their view was that involuntary unemployment was a short term phenomena resulting from a discrepancy between the price level and the wage level. Unemployment was the result of too high real wages. At times, the wage level in the classical view would be reduced and there would be no unemployment except for frictional search, unemployment caused by time delay between quitting one job and starting another. These schools pose that the problem of urban unemployment is traceable to the fault of workers and the various trade union power. They believed strongly in the theory of demand and supply. Therefore, it insists that urban unemployment is caused by low supply of labour of more than the capacity of the economy. Consequently, the school argued that the demand for too high wages of worker without a corresponding increase in productivity renders product costly thereby discouraging competitiveness among local industries and foreign industries. The implication of these trends is the reduction of sales, which further leads to mass retrenchment of workers resulting to unemployment.

Empirical Literature

Oladosu (2022) examined the relationships between foreign trade, employment and economic growth in Nigeria over the period 1970-2019, with inflation and budget deficit as policy variables. Two autoregressive distributed lags (ARDL) models were estimated with trade and economic growth as determinants of youth employment and total employment. The empirical results from the four models revealed existence of long run relationships between foreign trade, employment and economic growth. In the short run, trade, economic and population growth rates have stronger effects on youth employment than on total employment. In the long run, youth employment is found to be positively affected by economic growth and investment but negatively affected by population growth and the budget deficit, while total employment is

only affected by population growth rate. Economic growth was found to be much explained by youth employment than by total employment and foreign trade.

Ikenna, Ugochi and Abiola (2022) examined the impact of globalization on youth development and childhood education in Nigeria. The findings reveal that the youths and children are being affected negatively by globalization and thus, recommends, that the education policy makers and curriculum planners should construct an adequate and appropriate global curriculum to enable learners have a solid education foundation that will equip them with what it takes to acquire a global based knowledge. Again, the government should embark on aggressive job creation and improvement of positive access to information to widen their skills.

David, Alwell and Lawrence (2022) investigated the effect of international trade on unemployment in Nigeria. Data on international trade defined in terms of: oil import, oil export, non-oil export, non-oil import, Foreign direct investment share of economic growth and real effective exchange rate and unemployment rate were sourced from the World Bank Development indicators. The trade variables mentioned above were regressed against unemployment rate using the Autoregressive and Distributed Lag (ARDL) approach. The findings indicate that in the short run international trade impacted on unemployment more whereas in the long run, international trade impacted on unemployment marginally.

Nchom and Udeorah (2021) examined international trade and employment rate in Nigeria from 1999-2019. The objectives of the study were to examine the impact of export on employment rate; and determine the impact of import on employment rate in Nigeria using the dynamic ordinary least square (DOLS) regression analysis. The data for the analysis which ranges from 1999 to 2019 was sourced from the Central Bank of Nigeria (CBN) bulletin. The estimated DOLS result showed that export is negatively signed with employment rate but it is statistically significant in elucidation the rate of employment in Nigeria during the period of study. This means that, there is an indirect link between an increase in export and the employment rate. Similarly, the import is negatively signed with employment rate but statistically not significant in explaining the rate of employment in Nigeria during the period of study.

Odumade (2020) investigated the effects of youth unemployment and its consequences on economic growth in Nigeria. Descriptive research design of survey type was used while multi-stage sampling technique was employed in selecting 600 respondents. Two research questions and three research hypotheses were tested using Effect and Consequences of Youth Unemployment Questionnaire (EACOYUQ). Data were analyzed using frequency counts, percentages and Pearson product moment correlation. The results showed that there is significant relationship between youth unemployment rate and Nigerian economic growth, between youth unemployment rate and government's programmes to solve the problem, and between government's programmes to solve the problem and government's possible ways in ensuring the reduction of unemployment level in Nigeria.

Duru, Bartholomew, Okafor, Adikwu and Njoku (2020) examined association between international trade and economic growth in Nigeria from 1981 to 2018. The study used the Autoregressive Distributed Lag Bounds technique to cointegration. The results showed that external trade supports economic growth in Nigeria. Hence, the genuineness of the extensive trade liberalization campaign in developing countries through the bright idea of international organizations in the late 1980s and early 1990s was validated. Furthermore, the results showed the presence of unidirectional causality from real Gross Domestic Product to external trade in Nigeria.

Romanus, Oluwalayomi, Oluwatoyin, Osayande and Esther (2020) examined the relationship between FDI and the level of employment in Nigeria. The article used the Fully Modified Ordinary Least Squares (FMOLS) and the Johansen co-integration econometric approach on the data, which were sourced from the World Development Indicators (WDI) of the World Bank and the Central Bank of Nigeria (CBN) statistical bulletin. The investigation period covered thirty-two years (1985–2017). Also, the authors adopted the theory of absorptive capacity as the baseline for the model. Results obtained from the study showed that foreign direct investment is statistically significant and positively related to the employment level in Nigeria. These findings imply that a 1-unit increase in the inflow of foreign direct investment to the Nigerian economy is capable of increasing the level of employment by about 0.97 units.

Philip, Sunday, Samuel and Oluwadamilola (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 shows that trade openness had negative and significant impact on unemployment rate in Nigeria. The implication of this result is that trade openness provides employment opportunities, which reduces the unemployment rate in Nigeria. Thus, the study concluded that trade openness is a significant determinant of unemployment in Nigeria.

Stephen, Ahmet, Simplice and Festus (2019) explored the link between trade and unemployment for the case of Nigeria with the intention of exploring how the unemployment crisis has been impacted within the dynamics of the country's trade performance. The empirical evidence showed that the nation's terms of trade were insignificant to unemployment rate while trade openness and domestic investment, on the other hand, have significant opposing impacts on unemployment in Nigeria over the period of the study. Further breakdowns from the empirical analysis also revealed that the Philips curves proposition is valid within the Nigerian economic context while the evidences for the validity of Okun's law only exist in the short-run scenario.

Egbuche, Kalu and Otto (2018) queried international trade impact on unemployment in Nigeria,1981-2017.In other to accomplish set objectives, this work proxy unemployment (UNE) as regress and import (MPT), export (XPT), exchange rate (EXR) and EDB ranking served as regressors. Descriptive statistic and ECM were employed for data analysis. The result elicited long run relationship exists between trade and work force cutback, determined from the Engle-Granger co-integration test. Import reduced unemployment, but exports, currency rate plus ease of doing business increased unemployment from 1981-2017.

Mates (2018) assessed the relationship between degree of trade openness and joblessness rate for 28 OECD nations for time period that covered 2000 to 2016 using panel regression procedure. The outcome of the study revealed that degree of trade openness had serious retarding implication on joblessness rate both in long run and in short run.

Awadi-Warad (2018) studied the impact of trade openness on joblessness reduction in Arab region focusing on 7 Arab nations namely "Algeria, Bahrain, Egypt, Jordan, Oman, Saudi Arabia and Tunisia" with the used data that covered time 1990 to 2015. Using panel weighted least square estimation technique, the study observed that degree of trade openness significantly enhanced employment in the Arab region.

Yolanda (2017) worked on impact of export improvement on job-loss for Indonesia covering 1986 to 2016 using OLS for analysis. The result revealed that export improvement has absolute and appreciable impact on job cutback. Thus, the paper advanced policies to motivate improvement in Indonesian export system.

Ezeuchenne (2017) examined the impacts of international trade in Nigeria on economic growth for the period between 1985 to 2015. The analysis-controlled variables are; interest rate, the balance of trade, export and trade openness. Test of Unit root, test of Johansen cointegration and models of vector error correction were used as analysis techniques. The results proved that there is an insignificant relationship in log run between the imports and openness of economy; while a unidirectional relationship existed between economic growth and the trade openness.

Evaluation of Literature Reviewed

Having empirically reviewed related and relevant literatures on the effect of trade facilitation on unemployment, it was discovered that the effect of trade facilitation on economic growth has generated large volume of empirical studies with most of these studies providing mixed results and lack of consensus in their findings. However, there is dearth of empirical studies carried out on the effect of trade facilitation on unemployment in Nigeria. Also, the most recent time covered by most of these studies is 2020. These create a gap in knowledge/literature that this present seek to bridge. It is against the identified gap that this study sought to empirically determine the effect of trade facilitation on unemployment in Nigeria covering a period of thirty-eight years (1985 - 2022) which is more updated as it captures recent events compared to the works of other researchers who had carried out similar studies.

METHODOLOGY

This research work dwelt mainly on library research as it made use of secondary (time series) data. The data used to run the analysis for this study were therefore extracted mainly National Bureau of Statistics (NBS) reports, Central Bank of Nigeria (CBN) statistical bulletin and World Bank Indicators (WDI) of the World Bank. These sources were considered reliable for the purpose of this research.

Model Specification

This part of the research portrays the specified model being used in this work. A model is identified if it is in a unique statistical form enabling unique estimates of the parameters to be subsequently estimated from a sample data. In this study, econometric model is the model adopted. The econometric model was adopted from the work of Nchom and Udeorah (2021) that assessed the link between international trade and employment in Nigeria. The model is slightly modified to accommodate other variables of the study and specified as follows:

Expressing the model in its functional form, we have:

$$UMR = f(DTO, FDI, RER, ODA) \quad (3.1)$$

Expressing the model in its mathematical form, we have:

$$UMR = \beta_0 + \beta_1 DTO + \beta_2 FDI + \beta_3 RER + \beta_4 ODA \quad (3.2)$$

Expressing the model in its econometric form, we have:

$$UMR = \beta_0 + \beta_1 DTO + \beta_2 FDI + \beta_3 RER + \beta_4 ODA + et \quad (3.3)$$

Expressing the model in its log linear form, we have:

$$UMR = \beta_0 + \beta_1 LOG(DTO) + \beta_2 LOG(FDI) + \beta_3 LOG(RER) + \beta_4 LOG(ODA) + et \quad (3.4)$$

Where: UMR = Unemployment Rate, DTO = Degree of trade openness, FDI = Foreign direct investment, RER = Real exchange rate, ODA = Official development assistance, β_0 = Constant variable, β_1 - β_4 = Coefficients of Independent Variables, *et* = Error term

A Priori Expectation

The a priori expectation for this study is summarized in table 1 below:

Table 1: A Priori Expectation

Variables	Coefficient	Mathematical Representation	Expected Relationship
Degree of Trade Openness	β_1	$\beta_1 < 0$	Negative
Foreign Direct Investment	β_2	$\beta_2 < 0$	Negative
Real Exchange Rate	β_3	$\beta_3 > 0$	Positive
Official Development Assistance	β_4	$\beta_4 < 0$	Negative

Source: *Authors' Computation, 2024.*

Variables in the Model

Variables employed in this study are made up of dependent and independent variables. These are further explained below:

Dependent (Explained) Variable

Unemployment in Nigeria is the dependent variable and it is measured by Unemployment. Thus,

Unemployment Rate (UMR): This is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labour force. It is typically calculated by dividing the number of unemployed individuals by the total labor force (which includes both employed and unemployed individuals) and then multiplying the result by 100 to express it as a percentage. This statistic provides insight into the health of the labor market within a specific region or country.

Independent (Explanatory) Variable

Trade facilitation is the independent variable and it is proxied by degree of trade openness, foreign direct investment, real exchange rate and official development assistance:

Degree of Trade Openness: The degree of trade openness refers to the extent to which a country engages in international trade activities. It is often measured as the ratio of a country's total trade (exports plus imports) to its gross domestic product (GDP). A high degree of trade openness indicates that a significant portion of the country's economy is involved in international trade, while a lower degree of trade openness suggests a more closed or less globally integrated economy.

Foreign Direct Investment (FDI): Foreign direct investment refers to the investment made by a company or individual in one country in business interests located in another country. Unlike portfolio investment, which involves buying stocks or bonds of foreign companies, FDI typically involves establishing ownership or controlling interest in a foreign enterprise. FDI plays a crucial role in global economic development by facilitating capital flows, technology transfer, job creation, and economic growth.

Real Exchange Rate: The real exchange rate is a measure that reflects the relative price of goods and services between two countries, adjusted for inflation. It is calculated by dividing the nominal exchange rate (the rate at which one currency can be exchanged for another) by the ratio of the price levels between the two countries. The real exchange rate provides insight into the competitiveness of a country's exports and imports in international markets, as it accounts for differences in price levels.

Official Development Assistance (ODA): Official development assistance refers to financial aid or resources provided by governments or international organizations to support the economic development and welfare of developing countries. ODA typically includes grants, concessional loans, technical assistance, and other forms of assistance aimed at promoting sustainable development, poverty reduction, infrastructure development, healthcare, education, and other priority areas in recipient countries.

Data Analysis Techniques

Autoregressive Distributed Lag (ARDL) technique was adopted since the result of the unit root test shows evidence of mixed stationarity. It is important to note that Econometric Views (E-Views) 12 statistical package will facilitate the data analysis.

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Descriptive Statistics

The statistical properties of the data presented in table 4.1 were further confirmed with the help of descriptive statistics. The results of the descriptive analysis are presented as follow:

Table 2: Descriptive Statistics of Unemployment Rate (UMR), Degree of Trade Openness (DTO), Foreign Direct Investment (FDI), Real Exchange Rate (RER), Official Development Assistance (ODA)

	UMR	DTO	FDI	RER	ODA
Mean	13.33946	31.38562	1422.598	119.7868	1439.250
Median	10.80000	32.73200	248.2200	120.9700	299.5500
Maximum	35.19000	55.02100	5854.330	399.9600	11431.96
Minimum	5.300000	7.521000	0.430000	0.890000	66.68000
Std. Dev.	8.156220	10.29577	1772.137	109.5465	2203.807
Skewness	1.094374	-0.231040	0.927624	0.875882	2.909684
Kurtosis	3.128561	2.927339	2.564557	3.029695	12.92517
Jarque-Bera	7.411020	0.337312	5.598650	4.732241	204.0767
Probability	0.024588	0.844799	0.060851	0.093844	0.000000
Sum	493.5600	1161.268	52636.13	4432.110	53252.24
Sum Sq. Dev.	2394.861	3816.105	1.13E+08	432015.7	1.75E+08
Observations	38	38	38	38	38

Source: *Authors' Computation, 2024 (EViews, 12.0 Output).*

The results of the descriptive statistics as shown in Table 2 indicates that unemployment rate (UMR) recorded over the period a mean value of 13.34% with a maximum of 35.19% and minimum of 5.3% per annum. The standard deviation of unemployment rate (UMR) is 8.16% and this indicates that Unemployment rate (UMR) has low deviation or dispersion from the mean. In addition, degree of trade openness (DTO) recorded over the period a mean value of 31.39% with a maximum of 55.02% and minimum of 7.52% per annum. The standard deviation of degree of trade openness (DTO) is 10.30% and this indicates that degree of trade openness (DTO) has high deviation or dispersion from the mean. In furtherance, foreign direct investment (FDI) recorded over the period a mean value of ₦1422.60 billion with a maximum of ₦5854.33 billion and minimum of ₦0.43 billion per annum. The standard deviation of foreign direct investment (FDI) is ₦1772.14 billion and this indicates that foreign direct investment (FDI)

has low deviation or dispersion from the mean. Moreover, real exchange rate (RER) recorded over the period a mean value of 119.787% with a maximum of 456.78% and minimum of 0.89% per annum. The standard deviation of real exchange rate (RER) is 109.55% and this indicates that real exchange rate (RER) has low deviation or dispersion from the mean. Lastly, official development assistance (ODA) recorded over the period a mean value of $1439.250 million with a maximum of $11431.96 million and minimum of $66.68 million per annum. The standard deviation of official development assistance (ODA) is $2203.81 billion and this indicates that official development assistance (ODA) has moderate deviation or dispersion from the mean.

Unit Root Test

The data representing variables in this study were subjected to test of stationarity by testing for the presence or absence of unit root using Augmented Dickey-Fuller (ADF) to overcome this undesirable outcome. The results are summarized in the table below:

Table 3: Augmented Dickey-Fuller (ADF) Unit Root Test Results

	@ Levels		At 1st Difference			
Variables	**ADF Statistic**	**5% Critical Value**	**ADF Statistic**	**5% Critical Value**	**Order of Integration**	**Decision**
UMR_t	0.153456	-2.943427	-5.412353	-2.945842	I(1)	Stationary @ 1st Difference
$InDTO_t$	-3.389231	-2.943427	-	-	I(0)	Stationary @ Level
$InFDI_t$	-2.752600	-2.943427	-6.113356	-2.945842	I(1)	Stationary @ 1st Difference
$InRER_t$	-3.449519	-2.943427	-	-	I(0)	Stationary @ Level
$InODA_t$	-1.025077	-2.951125	-5.553867	-2.945842	I(1)	Stationary @ 1st Difference

Source: *Authors' Computation, 2024 (EViews, 12.0 Output).*

Table 3 shows the results of the base of the variables in their level and different forms. A variable is stationary if the t-statistic is less than the critical value at a 5% significance level or if the probability value is less than 0.05. The results of Augmented Dickey-Fuller (ADF) indicate that degree of trade openness (DTO) and real exchange rate are stationary at levels, that is, order I(0) while unemployment rate (UMR), foreign direct investment (FDI) and official development assistance (ODA) are stationary at first different, that is, order I(1). The mixture of the order of integration in the order I(0) and I(1) led to the adoption of an Autoregressive Distribution Lag (ARDL) bound test to test the presence of a cointegration or long-run relationship among the variables.

Bounds Cointegration Test

The result of Autoregressive Distributed Lag (ARDL) cointegration bound test is presented in Table 4:

Table 4: ARDL Bounds Cointegration Test Result

	Critical Value Bound		F-Statistics
Significance	I(0) Bound	I(1) Bound	
10%	2.2	3.09	
5%	2.56	3.49	5.870032
2.5%	2.88	3.87	
1%	3.29	4.37	
Note: K = 4.			

Source: *Authors' Computation, 2024 (EViews, 12.0 Output).*

Table 4 showed the result of ARDL Bounds Test. The F- statistic of 5.870032 in the result indicates the rejection of the null hypothesis of no long run relationship among the variables at all critical levels (lower and upper bounds). This implies that there exists a long run relationship between trade facilitation and unemployment in Nigeria from 1985 to 2022. Specifically, this further shows that there is long run relationship among unemployment rate, degree of trade openness, foreign direct investment, real exchange rate and official development assistance. This means that degree of trade openness, foreign direct investment, real exchange rate and official development assistance are good determinants of unemployment rate in the long run. The confirmation of long run dynamics among the variables further necessitated the estimation of our Autoregressive Distributed Lag (ARDL) model to determine the extent of the relationship between the dependent and independent variables.

Estimation of Autoregressive Distributed Lag (ARDL) Model

Long Run ARDL Model Estimation

Table 5: Long Run Autoregressive Distributive Lag (ARDL)

Dependent Variable = UMR_t				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
$InDTO_t$	-4.842234	2.015653	-2.402315	0.0397
$InFDI_t$	-3.561410	1.291652	-2.757252	0.0222
$InRER_t$	6.150125	4.118546	1.493276	0.1696
$InODA_t$	-5.470800	3.029466	-1.805863	0.1044
C	-3.826909	32.24671	-0.118676	0.9081

Source: *Author's Computation, 2024 (EViews, 12.0 Output).*

The long run ARDL result reveals that degree of trade openness (DTO) has a negative coefficient value (-4.842234) and probability value (0.0397) that is less than 5 percent level of significance. This indicates that degree of trade openness (DTO) has negative but significant effect on unemployment rate (UMR) in the long run. Hence, unemployment rate (UMR) will decrease by 484.2% given a percentage increase in degree of trade openness (DTO) while unemployment rate (UMR) will increase by 484.2% given a percentage decrease in degree of trade openness (DTO) in the long run. In addition, the long run ARDL result reveals that foreign direct investment (FDI) has a negative coefficient value (-3.561410) and probability value (0.0222) that is greater than 5 percent level of significance. This indicates that foreign direct investment (FDI) exerts a negative and non-significant effect on unemployment rate (UMR) in the long run. Hence, unemployment rate (UMR) will decrease by 356.1% given a percentage increase in foreign direct

investment (FDI) while unemployment rate (UMR) will increase by 356.1% given a percentage decrease in foreign direct investment (FDI) in the long run. Moreover, the long run ARDL result reveals that real exchange rate (RER) has a positive coefficient value (6.150125) and probability value (0.1696) that is greater than 5 percent level of significance. This indicates that real exchange rate (RER) has positive and non-significant effect on Unemployment rate (UMR) in the long run. Hence, unemployment rate (UMR) will increase by 615% given a percentage increase in real exchange rate (RER) while unemployment rate (UMR) will decrease by 615% given a percentage decrease in real exchange rate (RER) in the long run. Lastly, the long run ARDL result reveals that official development assistance (ODA) has a negative coefficient value (-5.470800) and probability value (0.1044) that is less than 5 percent level of significance. This indicates that official development assistance (ODA) has negative and significant effect on unemployment rate (UMR) in the long run. Hence, unemployment rate (UMR) will decrease by 547.1% given a percentage increase in official development assistance (ODA) while unemployment rate (UMR) will increase by 547.1% given a percentage decrease in real exchange rate (RER) in the long run.

Short Run ARDL Model Estimation

Table 6: Short Run Autoregressive Distributive Lag (ARDL)

Dependent Variable = UMR_t				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
$D(UMR_{t-1})$	0.544531	0.171559	3.174020	0.0113
$D(UMR_{t-2})$	0.406187	0.172470	2.355124	0.0429
$D(DTO_t)$	-7.140211	2.195352	-3.252421	0.0100
$D(DTO_{t-1})$	-4.379042	2.415604	-1.812814	0.1033
$D(DTO_{t-2})$	4.017277	2.445681	1.642600	0.1349
$D(FDI_t)$	-1.073230	0.178573	-6.010017	0.0002
$D(FDI_{t-1})$	-0.598929	1.680089	-0.356487	0.7297
$D(FDI_{t-2})$	-1.307842	1.580943	-0.827254	0.4295
$D(RER_t)$	0.906350	1.918750	0.472365	0.6479
$D(RER_{t-1})$	-0.599940	1.869603	-0.320892	0.7556
$D(RER_{t-2})$	-3.642258	1.824359	-1.996459	0.0770
$D(ODA_t)$	-3.671163	1.171208	-3.134509	0.0120
$D(ODA_{t-1})$	-5.402880	1.252012	-4.315360	0.0019
$D(ODA_{t-2})$	1.761809	1.212729	1.452764	0.1802
CointEq(-1)*	-0.471005	0.169775	-2.774284	0.0216
Adjusted R-squared = 0.596253; Durbin-Watson stat = 2.536238				

Source: *Authors' Computation, 2024 (EViews, 12.0 Output).*

The short run ARDL result in Table 5 reveals that degree of trade openness (DTO) has a negative coefficient value (-7.140211) and probability value (0.0100) that is less than 5 percent level of significance. This indicates that degree of trade openness (DTO) has negative but significant effect on Unemployment rate (UMR) in the short run. Hence, unemployment rate (UMR) will decrease by 714% given a percentage increase in degree of trade openness (DTO) while unemployment rate (UMR) will increase by 714% given a percentage decrease in degree of trade openness (DTO) in the short run. In addition, the short run ARDL result reveals that foreign direct investment (FDI) has a negative coefficient value (-1.073230) and probability value (0.0002) that is less than 5 percent level of significance. This indicates that foreign direct investment (FDI) exerts a negative and significant effect on unemployment rate (UMR) in the short run.

Hence, unemployment rate (UMR) will decrease by 107.3% given a percentage increase in foreign direct investment (FDI) while unemployment rate (UMR) will increase by 107.3% given a percentage decrease in foreign direct investment (FDI) in the short run.

Moreover, the short run ARDL result reveals that real exchange rate (RER) has a positive coefficient value (0.906350) and probability value (0.6479) that is greater than 5 percent level of significance. This indicates that real exchange rate (RER) has positive and non-significant effect on Unemployment rate (UMR) in the short run. Hence, unemployment rate (UMR) will increase by 90.6% given a percentage increase in real exchange rate (RER) while Unemployment rate (UMR) will decrease by 90.6% given a percentage decrease in real exchange rate (RER) in the short run. Lastly, the short run ARDL result reveals that official development assistance (ODA) has a negative coefficient value (-3.671163) and probability value (0.0120) that is less than 5 percent level of significance. This indicates that official development assistance (ODA) has negative and significant effect on unemployment rate (UMR) in the short run. Hence, unemployment rate (UMR) will increase by 367.1% given a percentage increase in official development assistance (ODA) while unemployment rate (UMR) will decrease by 367.1% given a percentage decrease in official development assistance (ODA) in the short run. Furthermore, the short run ARDL result in Table 4.7 shows that the expected negative sign of CointEq(-1) is significant. This confirms the existence of the long run relationship among the variables with their various significant lags. The coefficient of CointEq(-1) which is -0.471005 indicates that the deviation from unemployment rate long-term is corrected by 47% by the following year. Additionally, the adjusted R-squared (R^2) value of 0.596253 indicates that sixty percent (60%) of the systematic variation in Unemployment rate is explained by degree of trade openness (DTO), foreign direct investment (FDI) and real exchange rate (RER) in the short-run while the remaining forty percent (40%) are explained by other factors (variables) outside the model. Lastly, the Durbin Watson statistic of 2.536238 indicates that there is absence of serial correlation in the model.

Post-Estimation Tests

The post estimation tests conducted in this study and its results are presented below:

Table 6: Post-Estimation Tests Results

Test	Null Hypothesis	X^2 Value	X^2 Prob	Remark
Jarque-Bera	Normal distribution exists	2.324054	0.312851	Normal residuals
Breusch-Godfrey LM	Serial correlation does not exist	3.517481	0.0876	Serial independence
Breusch-Pagan-Godfrey	Homoscedasticity exists	0.819511	0.6695	Constant Variance
Ramsey RESET	Model is stable	1.493667	0.2564	correctly specified model

Source: *Authors' Computation, 2024 (EViews, 12.0 Output).*

The ARDL model was subjected to post estimation tests to ensure the model is devoid of any classical linear regression problem such as normality, serial dependence, heteroscedasticity and stability issues. The summary of the tests are reported in Table 6. Specifically, the result of the normality test in Table 6 showed

that the regression residual is normally distributed since the P-value (0.312851) is greater than 5 percent level of significance. In other words, under the Jarque-Bera normality test, a probability value of 0.312851 was greater than the proposed level of significance and this suggests that the errors were normally distributed due to the upholding of the null hypothesis of normal distribution. Also, the serial correlation of the residuals was tested using Breuch Godfrey test or Lagrange Multiplier (LM). This test was carried out to find out whether the residuals are serially independent or not. However, the null hypothesis of no serial correlation was retained because the probability value of 0.0876 was greater than the 5 percent level of significance. This indicates that there was absence of serial correlation in our model. Also, the result of the Breusch-Pagan-Godfrey test showed that there was no heteroscedasticity in our model. This is because the null hypothesis of homoscedasticity was retained. Precisely, a probability value of 0.6695 showed that the errors were homoscedastic and independent of the explanatory variables. Hence, the model has a good fit and is adequate for any conclusion drawn from it. Lastly, the probability value of 0.2564 against the Ramsey Regression Equation Specification Error Test (RESET) test was greater than the proposed 5 percent level of significance. As a result, the null hypothesis that the model was correctly specified was sustained. Therefore, there was no possibility of the model being specified incorrectly which may result in the omission of certain variables.

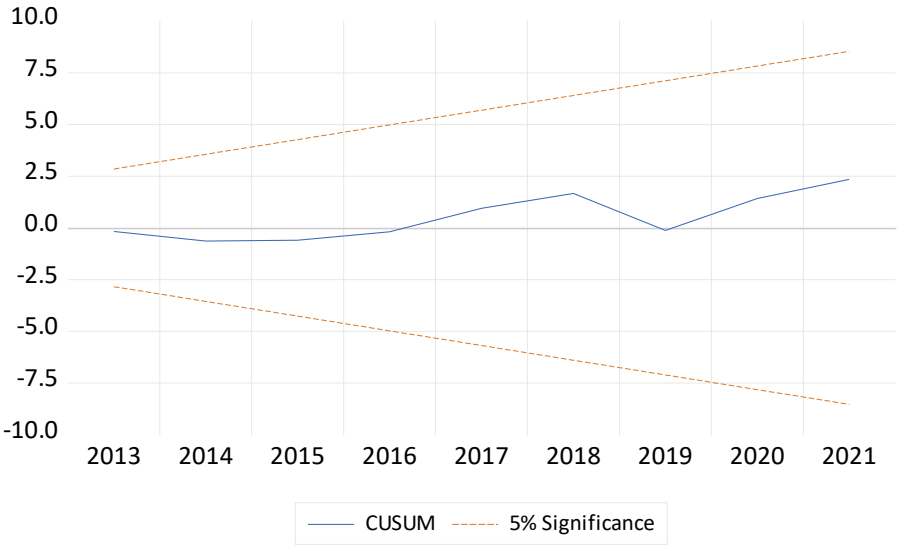

Figure 1: Stability Cusum Tests

Source: *Authors' Computation, 2024 (EViews, 12.0 Output).*

The results of the stability test using cumulative sum (CUSUM) as shown in Figure 4.6 indicate that CUSUM line stayed within the 5 percent critical bound. Thus, CUSUM plot did not across the 5 percent critical lines, hence, these statistics prove the stability of the long-run coefficients of the regressors that have an effect on unemployment in Nigeria. Therefore, the results of the model of the effect of trade facilitation on unemployment in Nigeria show the existence of parameter stability.

In conclusion, the post-estimation test results provided evidence that all the variables (Unemployment rate, degree of trade openness, foreign direct investment, real exchange rate and official development assistance) in our model conform to the basic assumptions of ordinary least squares estimation.

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DISCUSSION OF FINDINGS

The main objective of this study is to examine the effect of trade facilitation on unemployment in Nigeria between 1985 and 2022. The data used in the study were generated from Central Bank of Nigeria (CBN) statistical bulletin. The major technique of data analysis adopted is through Autoregressive Distributed Lag (ARDL). The data analysis was facilitated by econometric views (E-views) statistical software 12. The finding of this study showed that there is a negative and significant relationship between degree of trade openness and unemployment rate in Nigeria in the short and long run. This finding is supported by the finding of Nwosa, Keji, Adegboyo and Fasina (2020) who found that degree of trade openness significantly reduces joblessness rate in Nigeria. Additionally, the result of this study revealed that there is a negative and significant relationship between foreign direct investment and unemployment rate in Nigeria in the short run and long run. This finding is also related to the finding of Romanus, Oluwalayomi, Oluwatoyin, Osayande and Esther (2020) who established that foreign direct investment has a negative effect on unemployment rate in Nigeria. Moreover, the finding of this study indicated that there is a positive and non-significant relationship between real exchange rate and unemployment rate in Nigeria in the long run. This finding is in agreement with the result of David, Alwell and Lawrence (2022) who found that the impact of real exchange rate as a proxy of international trade on unemployment as measured by unemployment rate in Nigeria is positive. Lastly, the finding of this study indicated that there is a negative and non-significant relationship between official development assistance and unemployment rate in Nigeria in the long run while there is a negative and significant relationship between official development assistance and unemployment rate in Nigeria in the short run. This finding relates to the finding of Stephen, Ahmet, Simplice and Festus (2019) who affirmed that official development assistance contributes negatively to unemployment in Nigeria.

CONCLUSION AND RECOMMENDATIONS

Conclusion

Trade facilitation, the process of simplifying and streamlining international trade procedures, plays a crucial role in promoting employment and reducing unemployment through various channels. Trade facilitation fosters the development of trade-related services, including logistics, transportation, finance, insurance, and information technology, which play a vital role in facilitating international trade. These services sectors are significant sources of employment, particularly for skilled and semi-skilled workers. In line with the foregoing, this study has empirically examined the effect of trade facilitation on unemployment in Nigeria from 1985 to 2022. The study found that degree of trade openness, foreign direct investment and official development assistance are important indicators of trade facilitation that contribute negatively to unemployment rate in Nigeria. Based on the findings, the study therefore concludes that trade facilitation plays a vital role in reducing unemployment in Nigeria.

Recommendations

Based on the research findings, the study recommends that the Nigerian government should promote trade openness and attract foreign direct investment (FDI) in sectors with high employment potential—such as agriculture, manufacturing, services, agribusiness, and renewable energy—by offering tax incentives, improving the ease of doing business, and ensuring political and economic stability. The Central Bank of

Nigeria should also adopt policies to stabilize the real exchange rate, protecting domestic industries from volatility and enhancing the competitiveness of Nigerian exports. Additionally, official development assistance should be strategically directed toward job-creating areas like education, vocational training, and infrastructure development to further reduce unemployment.

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