

## **ASSESSING THE IMPACT OF FOREIGN DIRECT INVESTMENT ON UNEMPLOYMENT RATE IN NIGERIA**

### **ABSTRACT**

Recent studies have shown that high rate of unemployment as currently witnessed in Nigeria, is one of the factors that can undermine the attainment of goal eight (Decent work and Economic growth) of Sustainable Development Goals (SDGs) by year 2030. Since foreign direct investment (FDI) is an important factor in creating jobs and improving economic growth, it is considered a veritable tool for reducing the unemployment level. Although there have been studies on FDI and unemployment in literature, there is hardly any study on the impact of FDI on rural and urban unemployment. The study pursued threefold objectives which are to ascertain the impact of FDI on aggregate unemployment in Nigeria; to examine the impact of FDI on urban unemployment rate in Nigeria and to determine the impact of FDI on rural unemployment in Nigeria. The study utilized data from 1990 to 2020 as well as dynamic ordinary least squares (DOLS) which eliminates problems of endogeneity and serial correlation. The theoretical framework of the study is anchored on the Keynesian theory of unemployment. The result obtained showed that FDI has a significant impact on aggregate and urban unemployment in Nigeria. However, FDI did not impact significantly on rural unemployment in Nigeria. To effectively use FDI to reduce unemployment, the Nigerian government needs to create an enabling business environment, including favorable investment policies, streamlined regulatory procedures, and infrastructure development plans. Encouraging collaboration between foreign investors and local stakeholders, promoting technology transfer, and implementing strategies to enhance the skill levels of the local workforce are also important aspects to consider.

Keywords: Foreign Direct Investment (FDI), Unemployment, Sustainable Development Goals (SDGs), Decent Work and Economic Growth.

### **INTRODUCTION**

### 1.1. Background to the Study

“Unemployment refers to the percentage of the labour force that is without a job but is able and willing to work at the prevailing wage rate” (Musa, Maijama’a& Tahir, 2021). The issue of unemployment has grown to be one of Nigeria’s most persistent socioeconomic ills (Osabohien, Awolola, Matthew, Itua&Elomien, 2020). “Historically, there was no problem with unemployment in Nigeria during the first two decades after the nation gained independence. This is because the bulk of people at that time lived in rural areas and worked as farmers, whereas those in urban areas were gainfully employed. However, the country entered a period of unemployment when the oil industry took over as the principal driver of the economy” (Aladelusi& Olayiwola, 2021). Since then, the nation’s unemployment problem has grown complex. For instance, the country’s unemployment rate grew from 6.4 percent in 2010 to 27.1 percent in the second quarter of 2020 and 33.3 percent at the end of 2020 (NBS 2020a; NBS 2020b). The statistics from the National Bureau of Statistics show that urban unemployment increased from 8.8% in 2015 to 1.3% at the end of 2020. Within the same period, rural unemployment increased from 7% to 34.5%. This statistic highlights the disparity between the unemployment rate across spatial locations.

“One of the agenda that all governments try to achieve is to decrease unemployment through the creation of more job opportunities. Foreign direct investments (FDIs) are an important factor in creating jobs and improving economic growth” (Alkofahi, 2020; Aladelusi& Olayiwola, 2021; Suyunov, 2022). FDI is typically viewed as the flow of investment activities among countries (normally from one country to another) through the establishing operations of multinational companies (MNCs) which entail the acquisition of tangible assets and stakes in other businesses.

In most developing countries, FDI is seen as the remedy to a country’s development challenge, as it offers a substitute for domestic investment and with the potential to influence the host country’s macroeconomic variables such as GNI per capita, investment and employment. Through FDI, production is invariably ameliorated by better technologies and enhanced financial capabilities. Hence, FDI could play a prime role in the economic development process, thereby engendering improved social welfare

“The theoretical foundation for the foreign capital-led economic outcome hypothesis could be traced to the neoclassical and endogenous growth theories which stressed the importance of capital accumulation and technological progress in the process of economic development. These growth theorists posited that foreign capital makes funds available for the productive sectors, especially in capital-deficient economies to accelerate economic growth via improvement in the marginal productivity of capital” (Ehigiamusoe& Lean 2019). “This is because many developing countries have abundant manpower but lack adequate domestic capital to propel growth due to the inadequacy of domestic saving mobilization which inhibits capital formation and economic growth. Foreign capital inflows are important because they close the saving-investment gap in developing countries. Besides, the level of technological development arising from managerial, technical and human skills, innovation, technology transfers and knowledge spill-overs is

fundamental for long-run economic growth. Hence, foreign capital is considered the main conduit through which technology transfers, managerial expertise and production efficiency which provide linkages to external markets are accessed by several developing economies” (Alkofahi, 2020)

“Consequently, foreign capital inflows have received great attention from many developing countries in Africa, Asia and Latin America in recent decades because of Slow rate of domestic capital accumulation in these developing countries. Thus, the renewed emphasis on foreign capital inflows is because domestic savings alone cannot accelerate investment, but need to be complemented by foreign capital. In recognition of the prominent role of FDI, and to attract FDI into the national economy, over the years, the Nigerian government adopted several policies. For instance, in the mid-80s, a structural adjustment program (SAP) was introduced to liberalize the economy and accelerate foreign investors’ attraction to the manufacturing industry. Although the policy received wide criticism, it aided in increased FDI inflows into the country, as inward FDI rose from an estimated \$200 million in 1970 to \$2 billion in 1994. However, due to the ensuing political crisis and uncertainty, FDI inflows shrank between 1996 and 1999 but Increased significantly again in between 2000 and 2014 with the return to democracy in 1999 and the upsurge in oil prices. Nonetheless, in recent years, Nigeria’s FDI has been on the decline, as it decreased from 8.8 billion in 2011 to 2.3 billion in 2020” (World Bank, 2020). It is against this background that this study assessed the impact of FDI on the unemployment rate in Nigeria.

## 1.2. Statement of the Problem

“Persistent unemployment represents a direct threat to the economic and social stability of any country that, in turn, hinders its human and economic development. Available literature provides strong evidence that unemployment increases the risk of poverty and contributes to inequality” (Moosa & Merza, 2022). According to Alkofahi (2020), “reducing unemployment is essential for attaining most of the Sustainable Development Goals (SDGs) by 2030 In pursuant to the aforementioned, successive Nigerian governments have adopted various measures aimed at reducing unemployment through several policies and programmes like the National Directorate of Employment (NDE), Family Economic Advancement Programme (FEAP), Directorate of Food, Roads and Rural Infrastructure (DFRRI), Better Life for Rural Women/Family Support Programme, National Poverty Eradication Programme (NAPEP), Small and Medium Scale Enterprises (SMEs), National Economic Empowerment and Development Strategy (NEEDS) among others. Despite The efforts made over the years via these measures, unemployment remains a very serious challenge in Nigeria and the spark of the coronavirus disease 2019 (COVID-19) pandemic has exacerbated labour market outcomes of people, inducing a loss of employment and primary income sources”.

Foreign direct investment (FDI) is the most significant source of external finance for developing countries to reduce their financing gap and is considered a veritable tool for reducing the unemployment level. Since employment generation is one of the core benefits of foreign direct investment, it is very imperative to investigate the likely impact of the inflow of foreign direct investment on unemployment reduction in Nigeria. Although there have been studies on the nexus between FDI and aggregate unemployment, however, on the impact of unemployment on rural and urban unemployment, our study, to the best of our knowledge, explored in this area. The disaggregation is critical because FDI can have diverse effects on the diverse categories of unemployment and this will afford policymakers and analysts the right tools and relevant knowledge. Second, we employed a dynamic ordinary least square (DOLS) estimator. The main benefit of the DOLS test is that it considers the mixed-order integration of variables in the cointegrated framework (Alcantara & Padilla, 2009), while it also solves the problems like endogeneity and small sample size bias. Lastly, unlike similar studies, this present study introduced several control variables such as inflation rate, economic growth and fiscal deficit making the unemployment model with significant policy implications.

### 1.3. Research Questions

The study is guided by the following research questions:

- i. What is the impact of FDI on aggregate unemployment rate in Nigeria?
- ii. How does FDI impact urban unemployment in Nigeria?
- iii. What is the impact of FDI on rural unemployment in Nigeria?

### 1.4. Research Objectives

- i. To ascertain the impact of FDI on aggregate unemployment rate in Nigeria
- ii. To examine the effect of FDI on urban unemployment rate in Nigeria
- iii. To determine the impact of FDI on rural unemployment in Nigeria

### 1.5. Research Hypotheses

The hypotheses are stated both in the null (H<sub>0</sub>) and alternative (H<sub>1</sub>) form as shown below:

- i. H<sub>0</sub>: FDI does not significantly impact the unemployment rate in Nigeria  
H<sub>1</sub>: FDI has a significant impact on the unemployment rate in Nigeria
- ii. H<sub>0</sub>: FDI does not significantly impact urban unemployment in Nigeria  
H<sub>1</sub>: FDI has a significant effect on urban unemployment in Nigeria
- iii. H<sub>0</sub>: FDI does not significantly impact rural unemployment in Nigeria  
H<sub>1</sub>: FDI has a significant impact on rural unemployment in Nigeria

### 1.6. Significance of the Study

Attaining high and sustainable development outcomes for the economy is the topmost priority of Nigeria's development plans. Thus, there have been concerns about how to optimize FDI for development outcomes. As such, this study is significant in various ways. First, the findings from this research could inform policy debates and decisions about the impact of FDI on an aggregate and disaggregated unemployment rate. Understanding this nexus could assist policymakers in

putting in place effective measures to enhance the nation's household welfare and reduce unemployment. Put differently, this will afford policymakers and analysts the right tools and relevant knowledge.

To the body of academia, the findings of this study will contribute immensely to resolving the raging debate on the relationship between the FDI and the unemployment rate. The study will contribute to existing literature and will be of great value to further studies on the nexus between FDI and the unemployment rate.

### **1.7. Scope of and Limitations to the Study**

The main thrust of this study is to review the impact of FDI on the unemployment rate in Nigeria. The study spans from 1990 to 2020. This period represents a period of substantial changes in FDI as well as the unemployment rate in Nigeria. Being a macroeconomic study, we employed a macroeconomic estimation procedure.

One major limitation of this study is data availability. The study would have covered a larger timeframe if data for the variables were available. Again, the data for all the variables used in this study do not have the same source. However, the credibility of these sources is not in doubt.

## **LITERATURE REVIEW**

### **2.1. Review of Theoretical Literature**

#### **2.1.1. Conceptual Literature Review**

Alalawneh and Nessa (2020) define “unemployment as a condition that exists in an economy when able-bodied, capable and qualified persons willing to work cannot find paid and productive jobs to earn a decent living”. The study adopts this definition by Alalawneh and Nessa (2020). It is a situation whereby people or citizens of a country who are professionally qualified, capable and willing to offer themselves for employment at the prevailing wage rate cannot obtain jobs. According to Suyunov (2022), unemployment is “an indication of human resource waste. It refers to the non-utilization or under-utilization of a vast number of employable people in a country - people who are unsuccessfully but actively seeking work. The International Labour Organization (ILO, 2016) defines unemployment as the number of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work. Thus, a person is said to be unemployed if he is capable and willing to work at the prevailing wage rate but is unable to obtain suitable employment at the current market wage. Unemployed people can be classified into two; those who have never worked before and are actively seeking work and those who have lost their jobs, thereby seeking re-entry into the labour market. The unemployment rate is the number of unemployed persons as a percentage of the labour force”.

“Urban unemployment refers to the rate of joblessness among individuals living in urban areas or cities. It represents the percentage of the urban labour force that is actively seeking employment but unable to find suitable jobs. Urban unemployment can arise due to factors such as economic fluctuations, low demand for labour, lack of job opportunities, skill mismatch, or structural changes in industries” (Yu, Zhang & Sun, 2021). “Rural unemployment, on the other hand, refers to the rate of joblessness among individuals residing in rural areas or non-urban regions. It represents the percentage of the rural labour force that is unemployed and actively looking for work. Rural unemployment can be influenced by factors such as limited job opportunities in the agricultural sector, seasonal employment patterns, limited access to education and training, and disparities in infrastructure development between rural and urban areas” (Pi & Chen, 2016). Both urban and rural unemployment rates are important indicators that reflect the strength and stability of the labour market within specific geographic areas. Policymakers, researchers, and economists analyze these rates to understand the nature and extent of unemployment in different regions and develop appropriate strategies to address the challenges and disparities in job opportunities between urban and rural areas.

“On the other hand, foreign direct investment (FDI) is the process whereby the residents of one country (the source country) acquire ownership of foreign assets to control the production, distribution, and other activities of a firm in another country (the host country)” (Moosa & Merza, 2022). This study adopts the definition provided by Moosa and Merza (2022). Similarly, the International Monetary Fund’s Balance of Payments Manual defines FDI as “an investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investor’s purpose being to have an effective voice in the management of the enterprise”. The 1999 World Investment Report published by the United Nations Conference on Trade and Development (1999) defines FDI as “an investment involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise, affiliate enterprise or foreign affiliate)”. The term “long-term” is used in the last definition to distinguish FDI from portfolio investment, which is characterized by being short-term in nature and involving a high turnover of securities.

### **2.1.2. Review of Basic Theory: The Keynesian Theory of Unemployment**

“John Maynard Keynes offered new thinking on income and employment theory with the publication of the general theory of **employment, interest and money in 1936. John Maynard Keynes set his position in contrast with that of classical economics at every opportunity. In his book published in 1936, he began with an introductory** chapter that criticized classical economics for dealing with a “special case,” the characteristics of which “happen not to be those of the economic society we live in”. Keynes then followed with a lengthy chapter entitled The Postulates of Classical Economics” (Knights, 2011). “Keynes consequently attempted to cultivate a theory that would be relevant to the capitalist economics of his day” (Asimakopulos, 1991).

“Keynes’s theory assumes that the nominal wage was constant as means of trying to simplify his argument. Keynes stated that the essence of his argument was precisely the same whether or not money wages were susceptible to change. Under the Keynesian theory, nominal wages were seen as a rule, a function of activity fluctuating with the level of output and employment. Keynes further argued that a nominal wage reduction would probably not decrease real wages as neoclassical economists predicted. Regarding the entire economy, a nominal wage reduction that is not followed by a drop-in price implies a fallacy of composition. In this case, nominal wage reductions would not result in reduced unemployment since the level of wages would largely remain unaffected. In broad-spectrum, nominal wage changes can yield compound influences on output and employment which are difficult to generate” (Meccheri, 2005). “Further, Keynes argues that the main cause of unemployment was the deficiency of aggregate demand. Keynes therefore, suggested that unemployment could be removed by increasing the aggregated demand. The three components of aggregate demand are (a) demand for consumption goods, (b) demand for investment goods and (c) government expenditure. Keynes believed that government interference was the key to combating unemployment and attaining the objective of full employment” (Jain & Khanna, 2010).

### 2.3. Empirical Literature

In the absence of previous related studies (to our knowledge) that disaggregated unemployment, the review of the previous studies proceeds along foreign studies and domestic studies. The first strand highlights studies from other economies while the second strand documents studies from Nigeria.

Yılmaz (2014) investigated “the relationship between unemployment, economic growth, export, and FDI inflows in Turkey between 2000 and 2013. Applying the ARDL bound testing approach, the study found that increases in FDI inflows increased unemployment in the long run”. Loanoska and Djambaska (2015) analyze “the relationship between unemployment and foreign direct investment (FDI) in the Republic of Macedonia between 1999 and 2013. The study employed multiple linear regression analysis and concluded that FDI did not have a statistically significant impact on the decrease of unemployment in the Republic of Macedonia”. Irpan, Saad, Nor, Noor and Ibrahim (2016) focused on “the impact of FDI on the employment rate in Malaysia from 1980 to 2012. The autoregressive distributed lag (ARDL) model was used to determine the long-run relationship between the variables and the study found that FDI significantly influences the unemployment rate in Malaysia”.

Bayar and Sasmaz (2017) investigate “the long-run effect of both foreign direct investments and domestic investments on unemployment in 21 emerging economies over the period 1994-2014. Using the Augmented Mean Group (AMG) estimator, the study found that foreign direct investment inflows affected unemployment positively in the long term, but domestic investments affected unemployment negatively”. Ezzat (2019) assessed “the effect of FDI on unemployment

in selected Arab countries. The study reported a positive impact of FDI on reducing unemployment in the group as a whole and individually in Jordan, Morocco, and Tunisia while it leads to the increase of unemployment in Egypt”. Karimov, Parádi-Dolgos and Pavlin (2020) appraised “the impact of Foreign Direct Investment inflows on the unemployment rate in Turkey between 1980 and 2017 and the study proved that FDI decreases the unemployment rate in Turkey”

Mkombe, Tufa, Alene, Manda, Feleke, Abdoulaye and Manyong (2020) examined “the effect of foreign direct investment (FDI) on youth unemployment in the Southern African Development Community (SADC) region from 1994-2017. Results from the Feasible Generalized Least Squares technique show that FDI has an insignificant effect on reducing youth unemployment in the SADC region”. Alkofahi (2020) assessed “the effect of FDI on the unemployment rate in Saudi Arabia between 2005 and 2018. Using OLS, the study found that FDI reduces unemployment in Saudi Arabia”.

Alfalih and Hadj (2020) explored “the asymmetric impacts of FDI on employment in Saudi Arabia. The Non-Linear Autoregressive Distributed Lag (NARDL) method was applied to identify asymmetric impacts of FDI for job creation during the period 1984-2015. The NARDL findings show that positive changes in FDI exert no short-run impact on employment and exert a negative longer-term impact. Moreover, the negative changes in FDI exhibit a long- and short-run negative effect on job creation”. Alalawneh and Nessa (2020) assessed “the effect of FDI on unemployment in six countries in the Middle East and North Africa, Egypt, Jordan, Lebanon, Morocco, Tunisia, and Turkey for the period from 1990 to 2018. Using the fixed effect model and random effect model, the results showed that FDI reduces the unemployment rate, the male unemployment rate, and the female unemployment rate in the long run”. Suyunov (2022) investigated “the relationship between credit to the economy, foreign direct investment (FDI) and the unemployment rate in Uzbekistan between 2004 and 2019. The study estimates the relationship by applying a vector autoregression model and the study found that credit growth affects the unemployment rate negatively, while FDI growth positively affects the unemployment rate, which could have been attributed to Uzbekistan’s weak absorptive capacity of FDIs and local macroeconomic conditions”.

Focusing on domestic studies, Johnny, Timipere, Krokeme and Markjackson (2018) examined “the impact of foreign direct investment on the unemployment rate in Nigeria from 1980 to 2015. The study found that there is a negative and insignificant relationship between foreign direct investment and the unemployment rate in Nigeria”. Babasanya (2018) examined “the relationship between foreign direct investment and employment generation in Nigeria between 1999 and 2016. The study considered the employment rate (as a dependent variable) and gross domestic product, foreign direct investment, and exchange rate as independent variables. The ordinary least square estimation technique was used in the study and it was discovered that foreign direct investment has a positive relationship with the employment rate in Nigeria”. Ajayi, Akano and Adams (2019) investigated “the impact of FDI on the employment and

unemployment rate in Nigeria from 1960 to 2014. The study employed the Vector Auto regression (VAR) and the study established that FDI had a significant and positive impact on employment but did not have any impact or contribution to unemployment”

Anowor, Uwakwe and Chikwendu (2019) appraised “the effect of foreign direct investments on unemployment in Nigeria and the study identified that FDI is negatively related to unemployment”. Musa (2020) examined “the link between foreign direct investment inflows and the unemployment rate in Nigeria using annual time series data from 1986 to 2018. The study employed the autoregressive distributed lag (ARDL) model and the study found that FDI had a negative and significant effect on unemployment both in the short run and long run”. Bisiriyu and Osinusi (2020) investigated “the effect of FDI and GDP on unemployment in Nigeria between 1981 and 2017. The outcome of the ordinary least square (OLS) method showed that FDI and GDP have a significant impact on unemployment in Nigeria”.

Adeyemi, Hassan, Adebisi, Adegbola and Odetoyinbo (2020) examined “the role of foreign direct investment on employment generation in Nigeria and the study concludes that FDI has a significant and positive impact on employment”. Osabohien, Awolola, Matthew, Itua, and Elomien (2020) assessed “the effect of foreign direct investment inflow on employment in Nigeria for the period of 1985 to 2017. The study used the Fully Modified Ordinary Least Squares (FMOLS) and the results showed that foreign direct investment is statistically significant and positively related to the employment level in Nigeria”. Musa, Maijama’a and Tahir (2021) examined “the nexus between domestic and foreign direct investments and unemployment in Nigeria between 1991 and 2019. Employing the VECM, the study found that domestic and foreign direct investments were negative and significantly associated with unemployment”. Aladelusi and Olayiwola (2021) investigated “the impact of foreign direct investment on employment creation in Nigeria from 1985 to 2019. Using ordinary least squares, the study concluded that foreign direct investment played a crucial role in creating employment for the citizens of Nigeria”.

#### **2.4. Summary of Literature**

The study started the literature review by documenting several definitions of the key variables notably FDI and unemployment rate. The study adopted the definitions of Moosa and Merza (2022) and Alalawneh and Nessa (2020) for FDI and unemployment rate respectively. According to Moosa and Merza (2022), “FDI is the process whereby the residents of one country acquire ownership of foreign assets to control the production, distribution, and other activities of a firm in another country”. On the other hand, Alalawneh and Nessa (2020) defines “unemployment as a condition that exists in an economy when able-bodied, capable and qualified persons willing to work cannot find a paid and productive job to earn a decent living”

Over the years, researchers have utilized several theories in assessing the nexus between FDI and unemployment. Chief amongst them is the neoclassical growth model. This study adopted the neoclassical growth model which is considered appropriate since it presents us with an economy-

wide production function that primarily explains the role of capital (both government and private) in the economy. The review of empirical evidence cut across single-country studies (Irpan et al, 2016; Alfalih& Hadj, 2020; Suyunov, 2022) and cross-country evidence (Bayar &Sasmaz, 2017; Ezzat, 2019; Kombe et al, 2020). The outcomes of previous studies on the nexus between FDI and the unemployment rate have been mixed. For instance, Johnny et al, (2018), Karimov et al (2020), Musa (2020), and Musa et al (2021) among others found that FDI reduced unemployment in their respective case studies while Lozanoska and Djambaska (2015), Bayar and Sasmaz (2017), Ajayi et al (2019) and Mkombe et al (2020) did not have any significant effect on unemployment. The mixed outcomes show that the relationship is contingent on unemployment dynamics that differ from one country to another.

The relationship between FDIs and the unemployment rate varies across countries and may vary substantially depending on context due to heterogeneity of the structure of the economy and the type of received FDIs. Given this heterogeneity in the employment effects of FDI, Mahjabeen and Aatur (2016) pointed out the necessity of country-specific econometric analysis to shed some light on the relationship to guide policymakers in adjusting the FDI policy to address the unemployment problem.

## **2.5. Justifications of the Study**

This study extends the literature in the following ways. First, previous studies have focused on the nexus between FDI and aggregate unemployment, on the impact of unemployment on rural and urban unemployment, our study, to the best of our knowledge, is the first to explore this area. The disaggregation is critical because FDI can have diverse effects on the diverse categories of unemployment and this will afford policymakers and analysts the right tools and relevant knowledge. Second, we employed a dynamic ordinary least square (DOLS) estimator. The main benefit of the DOLS test is that it considers the mixed-order **integration of variables in the cointegrated framework (Alcantara & Padilla, 2009), while it also solves the problems like endogeneity and small sample size bias.**

**Third, the time-series analysis adopted, unlike the panel data approach used by most of the previous studies (Bayar &Sasmaz, 2017; Ezzat, 2019; Mkombe et al, 2020; Alalawneh& Nessa, 2020; Alalawneh& Nessa, 2020), enable us to generate specific outcomes on the effect of FDI inflow on unemployment in the Nigerian context. Fourth, unlike similar studies, we introduced several control variables such as inflation rate, economic growth and cost of capital which have significant implications on the unemployment rate thereby making the unemployment model robust with significant policy implications.**

## METHODS

### 3.1. Theoretical Framework

The theoretical framework for this study is anchored on the Keynesian theory of unemployment (Folawewo&Adeboje, 2017; Frenkel, 2017). The Keynesian framework posits that the main cause of unemployment is the deficiency of effective demand. In other words, unemployment results from insufficient aggregate demand resulting from any or combination of the following components of aggregate demand: falling investment demand, declining consumer demand, and reduced government spending. Keynes therefore, suggested that unemployment could be removed by increasing the aggregated demand. Keynes opine that to reduce unemployment, it is required that the level of investment, consumption, and government spending is raised sufficiently to equate aggregate demand with supply at a full employment level. He further advocates that if investment and consumption are retarding amid negative consumer/investor sentiment, then government intervention would be the key to combating unemployment and attaining the objective of full employment (Jhingan, 2016; Jain & Khanna, 2020).

Foreign direct investment is a component of private investment demand. Suppose aggregate output is defined as follows

$$Y_t = A^\phi K_t^\alpha L_t^\beta \quad 3.1$$

Where  $Y_t$  represents the real output at time t, K is the capital stock, L is the number of employees (labour), A is technical progress while  $\alpha$  and  $\beta$  representing the elasticity of output with respect to capital and labour respectively, and the coefficient  $\phi$  allows L and K to vary the efficiency of A.

Profit maximisation implies that optimal capital is chosen such that the cost of capital (C) equals capital's marginal revenue product and the wage (W) equals labour's marginal revenue product (Jude & Silaghi, 2016). Following Jude and Silaghi (2016), we eliminate the capital stock from Equation 3.1, transform the outcome by taking logarithms and rearranging to obtain labour demand function as follows:

$$\ln L_t = \Phi_0 + \Phi_1 \ln Y_t + \Phi_2 \ln \frac{W}{C} \quad 3.2$$

Where

$$\Phi_0 = \frac{-(\phi \ln A + \alpha \ln \alpha - \alpha \ln \beta)}{\alpha + \beta} \quad 3.3$$

$$\Phi_1 = \frac{1}{\alpha + \beta} \quad 3.4$$

$$\Phi_2 = \frac{-\alpha}{\alpha + \beta} \quad 3.5$$

Jude and Silaghi (2016) further assert that technical efficiency parameters and technical efficiency of production increases can be substantially influenced by FDI. This implies that we can model technical efficiency as a function of FDI as follows:

$$A_t = e^{\eta_0} FDI_t^{\eta_1} \quad 3.6$$

Where 'e' represents exponential relations, and  $\eta_0, \eta_1 > 0$ .

Taking the logarithm of Equation 3.6 and substituting in Equation 3.2 yields:

$$\ln L_t = \Omega + \Phi_1 \ln Y_t + \Phi_2 \ln \frac{W}{C} + \Phi_2 \ln FDI_t \quad 3.7$$

Where

$$\Omega = \frac{-(\alpha \ln \alpha - \alpha \ln \beta)}{\alpha + \beta}$$

Equation 3.7 shows that FDI could be a major driver of labour demand. If FDI indices increase in labour demand, unemployment is expected to decline

### 3.2. Empirical Model Specification

The main thrust of this study is to ascertain the impact of FDI on unemployment in Nigeria. As emphasized by Folawewo and Adeboje (2017), low unemployment is a corollary for full employment. In other words, the key drivers of employment double as the major determinants of unemployment, the difference is that there is reverse effect (Jain & Khanna, 2020). Following Folawewo and Adeboje (2017) and Jain and Khanna (2020), Equation 3.7, will yield:

$$\ln U_t = \Phi_0 + \Phi_1 \ln Y_t + \Phi_2 \ln W + \Phi_3 \ln C + \Phi_4 \ln FDI_t \quad 3.8$$

Where:

$$\Phi_0 = -\Omega, \Phi_1 < 0, \Phi_2 > 0, \Phi_3 > 0, \Phi_4 < 0$$

As opined by Moosa and Merza (2022), to achieve parsimony, we will not overload the model with variables. However, as opined by Nwokoye et al (2019), oil revenue (OILR) is a critical variable in modelling the behaviour of macroeconomic variables in Nigeria. Adding oil revenue, the model becomes:

$$\ln U_t = \Phi_0 + \Phi_1 \ln Y_t + \Phi_2 \ln W + \Phi_3 \ln C + \Phi_4 \ln FDI_t + \Phi_5 \ln OILR_t + \varepsilon_t \quad 3.9$$

Where  $U_t$  = is a 3 x 1 matrix of dependent variables, namely, aggregate unemployment (UEM), urban unemployment (UUEM) and rural unemployment (RUEM),  $\Phi_i$  denotes coefficients and  $\varepsilon$  is the error term. Other variables include foreign direct investment (FDI), wage rate (W), real gross domestic product (Y), cost of investment (C) and oil revenue (OILR). All variables are converted to their log form before the actual estimations

### 3.3. Model Justification and Description of Variables

The variables in the model were chosen based on the theoretical framework and economic underpinning. Based on the theoretical framework, unemployment, which is the reciprocal of employment, is a function of FDI, Y, W and C. According to Keynesian postulation, an increase in equilibrium Y is indicative of an increase in aggregate demand. This will spur employment and reduce the level of unemployment. However, a rising wage rate will reduce the demand for labour, and thus, lead to a decline in unemployment. Similarly, Keynes argued that the propensity to invest is inversely proportional to the marginal cost of capital and positively related to the level of unemployment. In other words, an increase in the cost of capital will discourage investment and therefore lead to an increase in the level of unemployment. In the same vein, FDI entered the model based on the Keynesian view that FDI is a form of new capital. In other words, the inflow and outflow of FDI is expected to have nontrivial implication for unemployment. The nature of that relationship is what this study seeks to establish. The choice of dynamic OLS (DOLS) is based on Al-Azzam and Hawdon (1999). According to Al-Azzam and Hawdon (1999), DOLS is a parameter estimator that addresses the problem of serial correlation and the violation of some other classical regression assumptions. DOLS is an estimator suggested to solve the finite sample bias of OLS caused by endogeneity issues when estimating regression models based on cointegrated variables. It obtains efficient, consistent and robust estimates.

#### Description and Measurement of the Variables

1. **Unemployment (UEM):** Unemployment captures the entire proportion of persons who are not employed in the country. It is measured as the ratio of all unemployed persons to all persons who are in the labour force.
2. **Urban Unemployment (UUEM):** The urban unemployment rate is a dependent variable in our model. This is measured as the ratio of persons who are unemployed in the urban area to the number of persons who are in the labour force in the urban area. We expect a negative relationship between FDI and UUEM.
3. **Rural unemployment (RUUEM):** RUUEM measures the proportion of persons who are not employed in rural areas. It is a dependent variable in our model and it is expected to be negatively related to FDI
4. **Real GDP growth (RGDP):** This measures the total output produced in a country in any year after adjusting for inflation. It is expected to be negatively related to UEM, UUEM and RUUEM
5. **Oil Revenue (OILR):** OILR refers to the total oil earning collected by the Federal Government of Nigeria (FGN) on behalf of the three tiers of government. Namely federal, state, and local councils. We expect that an increase in oil revenue will increase both government spending and investment, thereby leading to a decline in unemployment.
6. **Wage Rate (W):** Wage rate refers to the compensation that labour receives for participating in the production process. In other words, it is the market price of labour that equilibrates the demand for labour with the supply of labour. On a priori, it is expected to be positively

related to unemployment. The real (minimum) wage rate is used as a proxy for the wage rate in this study.

7. **Cost of investment (C):** This is the marginal cost of investment. A rational investment makes investment decisions at the margin. That's, investment can only be considered if the marginal cost is less (or equal to) the marginal returns. Thus, it is expected that C is a positive function of unemployment. The monetary policy rate (MPR) is employed as a proxy for C.

### 3.5. Procedure and Techniques of Data Analysis

The procedure of data analysis and model estimation was as follows. First, the time series properties of the data were examined using a unit root test, cointegration test and error correction mechanism. While the unit root test examined the stationarity status of the time series, the cointegration test examines the existence of long-run relationships and error correction further ascertains the speed of adjustment from disequilibrium. Second, we proceeded to estimate the models using the DOLS methodology. Third, the efficiency and robustness properties of the estimates and error terms were evaluated through diagnostic estimations.

### 3.6. Nature and Sources of Data

This study employed annual time series collected from 1990 to 2020. The relevant data for this study were obtained from the Central Bank of Nigeria's Statistical Bulletin, World Development Indicators (WDI) and World Economic Outlook. The detail is summarized in Table 1.

**Table 1: Summary of sources of data**

Variables	Source of Data
Urban Unemployment	WEO (2022)
Total Unemployment	WEO (2022)
Rural Unemployment	WEO (2022)
Wage	NBS (2022)
Cost of capital	NBS (2022)
Oil revenue	WEO (2022)
Real GDP	CBN (2022)

Source: Researchers' Compilation (2022)

*Note: CBN stands for Central Bank of Nigeria, WEO stands for World Economic Outlook, NBS stands for National Bureau of Statistics*

## PRESENTATION OF DATA AND DISCUSSION OF RESULT

### 4.1. Presentation of Results

Before the estimation of the long-run model, study evaluated the time series properties of the data such as stationarity, cointegration and error correction mechanism. The results of the stationarity, cointegration and error correction are presented in the following sub-sections.

#### (a) Stationarity Test

The stationarity test was conducted using two-unit roots test approaches, namely augmented Dicker-Fuller (ADF) and Phillip-Perron (PP) tests. The two tests were used to test for consistency and where conflicts exist, to decide on the most appropriate option (Grifith, 2012). The results of unit root tests are presented in Table 2.a. From Table 2.a, both ADF and PP tests indicate that all the variables tend to be stationary in the first difference. The results suggest that the time series are realization of stochastic processes.

**Table 2.a: Stationarity Test**

ADF				
	LEVEL		FIRST DIFFERENCE	
Variables	Constant	Constant and Trend	Constant	Constant and Trend
UEM	-1.584	-1.529	-8.909	-6.532
UUEM	-0.766	-1.511	-6.592	-6.588
RUEM	-1.394	-1.355	-7.640	-7.694
FDI	-1.159	-0.621	-8.534	-8.656
W	-0.471	-0.732	-6.636	-6.650
RGDP	0.279	0.290	-4.982	-5.320
CC	-0.451	-0.519	-5.178	-5.178
OILR	-2.2012	-2.011	-5.012	-6.999
Critical Value				
1%	-3.610453	-4.211868	-3.615588	-4.219126
5%	-2.938987	-3.529758	-2.941145	-3.533083
10%	-2.607932	-3.196411	-2.609066	-3.198312
PP				
UEM	-1.538	-1.470	-9.611	-11.140
UUEM	-0.878	-1.401	-7.320	-10.032
RUEM	-1.370	-1.355	-7.856	-9.012

FDI	-1.054	-1.021	-8.654	-8.914
W	-0.443	-0.711	-6.636	-6.653
RGDP	-0.135	-0.290	-4.982	-5.267
CC	-0.452	-0.671	-5.173	-5.178
OILR	-2.301	-0.219	-7.091	-6.002
Critical Value				
1%	-3.610453	-4.211868	-3.615588	-4.226815
5%	-2.938987	-3.529758	-2.941145	-3.536601
10%	-2.607932	-3.196411	-2.609066	-3.200320

Source: Estimated by the Researcher using Eview 12

### (a) Cointegration Test

Given that the variables are integrated processes, we proceed to test for cointegration. The cointegration test seeks to ascertain whether there is a long-run relationship among variables. Before this test is conducted, we performed a lag order selection test to decide the optimal lag to be included in the Johansen Co-integration test. The result of this test is reported in Table . We follow the (SC) criteria and choose lag one (1) for the co-integration analysis.

**Table 2.b: Lag Order Selection Criteria**

Lag	Log L	LR	FPE	AIC	SC	HQ
1	-28.00989	NA	2.1098*	5.908588	7.265966*	5.884703*
2	29.09506	67.62716	3.3098	5.887186	9.585941	6.823417
3	96.52298	69.31604	2.9998	4.233082*	10.723216	6.579429

\*indicates lag order selected by the criterion; LR: Sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error

The estimated co-integration result is reported in Table 2.c. The trace statistics and maximum eigenvalue detects one co-integrating vector. It shows that the null hypothesis of no co-integrating vector is rejected at 5 percent significant level. This indicates the presence of one co-integration relationship for our model, implying a long-run equilibrium relationship among unemployment and other modelled variables.

**Table 2.c: Johansen Co-Integration Test Result**

Ho	Ha	Trace stat	95%	$\lambda - Max$	95%
$r \leq 0$	$r = 1$	130.1857	125.6154	47.92664	46.23142
$r \leq 1$	$r = 2$	82.25904	95.75366	29.05595	40.07757
$r \leq 2$	$r = 3$	53.20309	69.81889	20.62012	33.87687
$r \leq 3$	$r = 4$	32.58297	47.85613	19.28522	27.58434
$r \leq 4$	$r = 5$	13.29775	29.79707	7.994750	21.13162
$r \leq 5$	$r = 6$	5.302996	15.49471	5.212345	14.26460

Ho	Ha	Trace stat	95%	$\lambda - Max$	95%
$r \leq 6$	$r = 7$	0.090651	3.841466	0.090651	3.841466

Source: Estimated by the Researcher using Eview 12

### (b) Error Correction

To ascertain the adjustment dynamics of unemployment in the short run, we estimated the Engel-Granger error correction model. The results presented in Table 2.d show that the error correction term for UEM is -0.177 with a t-statistics of -2.952. According to Gujarati (2004), the negative coefficient of the error correction term and the significance thereof at a 5% significance level ( $-2.952 > 2.0$ ) implies that short-run disequilibria are usually corrected as the variable searches for its long-run equilibrium path. Also, the magnitude of the ECM which is 0.177 shows that the speed of adjustment is slow. That is, about 17.7% of disequilibria are corrected in the current period. Similarly, the ECM for UUEM and RUEM are -0.189 and -0.118 respectively. Again, the speed of adjustment of 18.9% and 11.8% is also slow. Slow adjustment process may be indicative of the presence of obstructive labour market.

**Table 2.d: Summary of ECM statistics**

Variable	UEM	UUEM	RUEM
D(UEM)	0.137(0.056)**		
D(UUEM)		-0.025(7.97)	
D(RUEM)			0.091(0.037)**
D(FDI)	-0.023(8.257)	0.147(0.054)***	-0.015(5.505)
D(W)	0.507(0.161)***	0.542(0.155)***	0.338(0.107)***
D(RGDP)	0.153(0.146)	0.164(0.141)	0.102(0.097)
D(CC)	0.589(0.301)**	0.63(0.291)**	0.393(0.201)**
D(OILR)	-0.328(0.841)	-0.351(0.812)	-0.219(0.561)
ECM(1)	-0.177(0.06)***	-0.189(0.058)***	-0.118(0.04)***

Source: Estimated by the Researcher using Eview 12

### (c) Impact of Foreign Direct Investment (FDI) on Unemployment

To ascertain the impact of FDI on unemployment, three equations were separately estimated. The first equation focused on aggregate unemployment. The second and third equations focused on urban and rural unemployment respectively. The estimates obtained are shown in Tables 2.e, 2.f and 2.g respectively. The estimates were obtained using the dynamic ordinary least square (DOLS) procedure.

**Table 2.e: FDI and Aggregate Unemployment**

	Coefficient	Std. Error	t-Statistic
FDI	-0.0031***	0.0014	-2.1440

W	0.0302	0.0238	1.2689
RGDP	-0.2907	0.7659	-0.3796
CC	0.4299***	0.0406	10.5946
OILR	-0.0026**	0.0012	-2.1153
C	0.1581	0.1363	1.1595
R-square	0.801		
F-stat (p-value)	101.003 (0.0000)		

Source: Estimated by the Researcher using Eview 12

Note: \*, \*\* and \*\*\* indicate 10%, 5% and 1% significance

The results obtained show that the coefficient of FDI in the aggregate unemployment equation is -0.0031 with a standard error of 0.0075. This suggests that FDI is negatively related to UEM. In other words, an additional one unit of FDI could reduce unemployment by 0.003 units. The wage rate (W) entered the model with a positive coefficient of 0.0302 and a standard error of 0.0238. This indicates a positive relationship between wage rate and unemployment in the model. Other variables include RGDP, CC and OILR and each entered the model with the following coefficients -0.2907, 0.4299 and -0.0026 respectively. This indicates that raising RGDP and OILR by 1 unit could reduce unemployment by 0.29 units and 0.003 units respectively while raising CC by 1 unit will increase unemployment by 0.42 units.

**Table 2.f: FDI and Urban Unemployment**

	Coefficient	Std. Error	t-Statistic
FDI	-0.0488***	0.0057	-8.5986
W	0.0023**	0.0009	2.4685
RGDP	-0.0302	0.0238	-1.2689
CC	-0.2176***	0.0446	-4.8804
OILR	0.1946**	0.0811	2.4006
C	0.2344*	0.1307	1.7941
R-square	0.859		
F-stat (p-value)	187.989 (0.0000)		

Source: Estimated by the Researcher using Eview 12

Note: \*, \*\* and \*\*\* indicate 10%, 5% and 1% significance

Table 2.f summarises the results of the equation of urban unemployment and FDI. FDI entered the urban unemployment equation with a negative but significant coefficient of -0.0488 and a standard error of 0.0057. This indicates that raising FDI by 1 unit will reduce urban unemployment by 0.049 units. The coefficient of wage rate, however, remains positive at 0.0023. The result also shows that raising RGDP by one unit will reduce unemployment 0.03 unit while raising oil revenue by one unit will raise unemployment by 0.1946 units. In the same vein, the

result shows that raising the cost of capital (CC) by one unit could increase urban unemployment by 0.2176 units.

On the other hand, the result of the rural unemployment equation appears to be asymmetric to that of urban unemployment in manner ways. First, the coefficient of FDI remains negative but insignificant. The coefficient of wage rate (0.0439) maintained its *apriori* of positive sign but it is insignificant. Cost of capital (CC) entered the model with a positive coefficient of 0.2989 and a standard error of 0.2526. Also, the result suggests that raising oil revenue by one unit could lower unemployment by 0.1981 unit.

**Table 2.g:FDI and Rural Unemployment**

	Coefficient	Std. Error	t-Statistic
FDI	-0.0178	0.0804	-0.2214
W	0.0439	0.0704	0.6245
RGDP	0.2667*	0.1422	-1.8764
CC	0.2989	0.2526	1.1833
OILR	-0.1981***	0.0459	-4.3123
C	0.1739	0.1208	1.4403
R-square	0.699		
F-stat (p-value)	140.337 (0.0000)		

Source: Estimated by the Researcher using Eview 12

Note: \*, \*\* and \*\*\* indicate 10%, 5% and 1% significance

#### 4.2. Evaluation of Estimates

The research estimates are evaluated based on economic, statistical and econometric criteria.

##### (a) Economic Criterion

Based on economic criteria, the estimates of the DOLS are evaluated against the *apriori* expectations. This was done using the sign test which is summarized in Table 2.g. From Table 2.g, most variables conform to *apriori* expectations. The result obtained shows that all variables conform to *apriori* expectations.

##### (b) Statistical Criterion

The robustness of the hypothesized model and the validity of the research hypotheses are also evaluated based on Wald multiple parameter test and R-square. The Wald test is analogous to F-test. It tests the joint significance of the entire estimated model. The result obtained show that the F-stat for the equations of unemployment, urban unemployment and rural unemployment are 101.003, 187.989, and 140.337(see tables 2.e-2.g). All three equations are robust given that the null hypothesis that the estimated parameters are not jointly statistically is rejected for all three

equations. On the other hand, the R-square for all three equations is greater than 0.50 which again indicates that the model variables sufficiently explain the variation in UEM, UUEM and RUEM (see tables 2.e-2.g).

### **4.3. Evaluation Based on Econometric Criteria**

The robustness, appropriateness and predictive power of the estimated econometric model are evaluated based on the serial correlation LM test, heteroskedasticity test and normality test.

#### **Serial Correlation LM Test**

The serial correlation Lagrangian Multiplier (LM) is an asymptotic test that investigates whether the assumption of no serial correlation is violated. Using the Breusch-Godfrey Serial Correlation LM Test, the null hypothesis of no serial correlation cannot be rejected for all three equations. This follows from the fact that the probability of both F-statistic and  $obs \cdot R$ -squared for the test is greater than 5 percent significance level – which leads us to accept the null hypothesis of the test that there is no serial correlation in the estimated model. We, therefore, conclude that there is no serial correlation in the estimated model.

#### **Heteroskedasticity Test**

The test of heteroskedasticity as proposed by White (1980) is implemented in this study under the null hypothesis of no heteroskedasticity. The summary statistics of the Breusch-Pagan-Godfrey Heteroskedasticity test indicate that the null hypothesis of no heteroskedasticity is not rejected for all three equations. Thus, we conclude that there is no problem with heteroskedasticity in the estimated models.

#### **Normality Test**

The normality test ascertains whether (or not) the stochastic error term is normally distributed. The need for this test arises from the argument that statistical inference from the estimates will be invalid if the normality assumption is violated (Gujarati, 2004; Greene, 2005). Given the p-value of Jaque-bera statistics is greater than 5 percent for all three equations, the null hypothesis that the residual is normally distributed cannot be rejected. Thus, we conclude that the residual is normally distributed.

### **4.4. Test of Hypotheses**

The thrust of this study is to ascertain the impact of FDI on unemployment in Nigeria. Based on the specific objectives, the following null hypotheses were earlier specified in section one:

1. FDI does not have a significant impact on unemployment (UEM) in Nigeria
2. FDI does not have a significant impact on urban unemployment (UUEM) in Nigeria
3. FDI does not have a significant impact on rural unemployment (RUEM) in Nigeria

As stated earlier in section three, point estimates procedure for test of the hypothesis using t-test was employed. The null hypothesis is rejected only if the p-value of z-statistics ( $\text{prob}[z_a]$ ) is less than 0.05. The statistics for the test of the hypothesis are summarized in Table 2.g. Based on the results obtained, we conclude as follows. First, FDI has a significant impact on aggregate unemployment and urban unemployment in Nigeria. However, FDI does not have a significant impact on rural unemployment in Nigeria.

#### **4.5. Discussion of Findings**

The main thrust of this study was to ascertain the impact of FDI on unemployment in Nigeria. The result obtained shows that FDI has a significant impact on unemployment in Nigeria. However, there is an asymmetric between the outcome of rural and urban unemployment. While FDI does not seem to exert a significant impact on rural unemployment, FDI was found to exert a significant impact on urban unemployment. Our findings on the impact of FDI on unemployment corroborated Salami and Oyewole (2013) and Strata, Davidescu and Paul (2015). While Salami and Oyewole (2013) found that FDI has a significant impact on unemployment in Nigeria, Strata et al (2015) found that FDI has an effect on unemployment in the EU. On the impact of FDI on rural and urban unemployment, our study, to the best of our knowledge, is the first to explore this area.

The results obtained could reflect the nature and intensity of FDI. Basically, FDI could be directed to merger and acquisition (M&A) or greenfield investment. The Greenfield investment is when the foreign investor establishes a new venture in the host country that creates jobs and outputs while M&As involve the purchase of all or part of an existing enterprise or project in the host country by the foreign investor, as such as the latter is unlikely to result in any substantial job creation (Muradzikwa 2002). However, these two forms may take other names.

For example, Greenfield investment is also called 'Mortar and brick' investment (Nyamwange 2009) and M&As also take the name Brownfield investments as in Folawewo&Adeboje (2017). If greenfield investments are targeted at the rural areas, more jobs will be created and this will reduce rural unemployment. the converse is the case when there is limited greenfield investment. According to Salami & Oyewole (2013), FDI in Nigeria has been largely directed to M&As rather than Greenfields which have fewer jobs creating capacity compared to Greenfield investment. If M&As in urban areas are accompanied by capacity expansion, there could be an increase in employment and a decrease in unemployment. Additionally, FDI can bring in new

technologies, know-how, and management practices, which can increase productivity and competitiveness in the host country, leading to further job creation.

Another possible explanation is that the job creation capacity of FDI depends on the intensity and stability of unemployment. If FDI is not substantial but expressed in pockets of stock acquisition, the capacity to generate jobs may be limited. In the same vein, FDIs are concentrated in the urban areas. This is because of a dearth of social capital and other infrastructure in the rural areas which makes it uneconomical to establish businesses in those places. Thus, the marginal job generation of FDI role so far is most likely felt in the urban areas.

## **CONCLUSION AND RECOMMENDATIONS**

### **5.1. Conclusion**

The unemployment rate is the most widely used indicator of the well-being of a labour market and an important measure of the state of an economy in general. The problem of unemployment has posed a great challenge to many countries (both developed and developing). In recent times, the incidence of unemployment in Nigeria has been deep and widespread, cutting across all facets of age groups, educational strata and geographical entities. Persistent unemployment not only affects the status of a nation in comparison to other nations but also leads to devastating consequences in the domestic economy. The overbearing consequences of unemployment have compelled policymakers and the government to initiate several programs and policies aimed at reducing the unemployment rate to the natural rate of unemployment in Nigeria. However, unemployment has continued to soar high defying all attempts to contain it. The main thrust of this study was to ascertain the impact of FDI on unemployment in Nigeria. The result obtained shows that FDI has a significant impact on unemployment in Nigeria. However, there is an asymmetric between the outcome of rural and urban unemployment. While FDI does not seem to exert a significant impact on rural unemployment, FDI was found to exert a significant impact on urban unemployment

### **5.2. Recommendations**

Based on the findings of this study, the following policy actions are recommended. First, the government should improve the state of infrastructure and security in the country as the present economy is characterized by terrorism, kidnapping and robbery in different parts of the country and this may drive out the investors in the country and discourage the potential ones. Second, the monetary authority should formulate and implement policies that will stabilize the Naira in relation to other major currencies of the world as this will boost the confidence of the investor in the country. Third, the government should provide a conducive investment atmosphere for foreign investors to attract foreign investment in the country. On the other hand, access to finance at a subsidized interest rate for domestic investors should be one of the top policy priorities because the high cost of borrowing reduces the opportunities for domestic investment

and investors in the real sector of the economy should be considered for taxes concession largely due to the sector's direct effect on employment in the country.

Lastly, the government should also conduct some policy reforms to reduce restrictions and issue licenses to foreign firms. More so, the government should provide open, transparent, and dependable conditions for all kinds of firms, whether foreign or domestic, including the ease of doing business, access to imports, relatively flexible labour markets and protection of intellectual property rights. By doing so, we can expect that Nigeria will be one of the top FDI destinations not only in the African region but also in the world. This will result in remarkably high economic growth, increases the income per capita, and the standard of living to extremely high levels.

### 5.3. Suggestions for Further Studies

The conversation and empirical inquisition regarding unemployment are bound to continue in development given that high unemployment could stifle the attainment of sustainable development goals by 2030. Although this study successfully answered the various questions it set out to answer, it raises more questions that are beyond its scope. For example, one may want to know the implication of the unemployment rate on quality of life indicators. Thus, we recommend that further studies be carried out to ascertain the impact of unemployment on the quality of life as well as the effect of capital inflows on unemployment across developing economies.

### References

- Adeleke, K. M., Olowe, S. O. & Fasesin O. O. (2014). Impact of foreign direct investment on Nigeria economic growth. *International Journal of Academic Research in Business and Social Sciences*, 4(8), 234-242.
- Adeyemi, A.A., Hassan, A.E., Adebisi, R.O., Adegbola, M.M., & Odetoyinbo, Y.O. (2020). Role of foreign direct investment on employment generation in Nigeria. *International Journal of Academic Multidisciplinary Research (IJAMR)*, 4(9), 117-127.
- Ajayi, A., Akano, R.O., & Adams, S.O. (2019). Impact of foreign direct investment on employment and unemployment rate in Nigeria: Application of Vector Auto regression (VAR) models (1960-2014). *Asian Journal of Advanced Research and Reports*, 6(1), 1-15
- Aladelusi, K. B., & Olayiwola, H. O. (2021). Foreign direct investment and employment creation in Nigeria. *Canadian Social Science*, 17(1), 16-24.
- Alalawneh, M., & Nessa, A. (2020). The impact of foreign direct investment on unemployment: Panel data approach. *Emerging Science Journal*, 4(4), 228-242

- Alcantara, V., & Padilla, E. (2009). Input-output subsystems and pollution: An application to the service sector and CO<sub>2</sub> emissions in Spain. *Ecological Economics*, 68 (3), 905-914.
- Alfalih, A.A., & Hadj, T.B. (2020). Asymmetric effects of foreign direct investment on employment in an oil producing country: Do human capital, institutions and oil rents matter? *Resources Policy*. <https://doi.org/10.1016/j.resourpol.2020.101919>.
- Alkofahi, K. (2020). The effect of foreign direct investment on the unemployment rate in Saudi Arabia. *International Journal of Economics and Finance*, 12(10), 1-10
- Al Amarat, M.H.E. (2016). The impact of direct foreign investment on unemployment in Jordan. *Modern Economy*, 7, 737-741
- Al-Azzam, A., & Hawdon, D. (1999). Estimating the demand for energy in Jordan: A stock Watson dynamic OLS (DOLS). Surrey Energy Economics Centre Working paper No. 97.
- Anowor, O.F., Uwakwe, Q.C., & Chikwendu, N.F. (2019). How investment does affect unemployment in a developing economy. *Sumerianz Journal of Economics and Finance*, 2(7), 82-88
- Babasanya, A. O. B. (2018). Foreign direct investment and employment generation in Nigeria. *Journal of Economics and Sustainable Development*, 9(4), 42-47
- Bayar, Y., & Sasmaz, M.U. (2017). Impact of foreign direct investments on unemployment in emerging market economies: A co-integration analysis. *International Journal of Business and Economic Sciences Applied Research*, 10(3), 90-96
- Bisiriyu, S.O., & Osinusi, K.B. (2020). Foreign direct investment, economic growth and unemployment in Nigeria. *Jalingo Journal of Social and Management Sciences*, 2(4), 51-61
- Ezzat, A.A. (2019). The impact of foreign direct investment on unemployment: Evidence from Arab countries. *Scientific Journal for Economic & Commerce*, 3(3), 251-286
- Folawewo, A. O., & Adeboje, O. M. (2017). Macroeconomic determinants of unemployment: Empirical Evidence from Economic Community of West African States. *African Development Review*, 29(2), 197-210
- Frenkel, J. R. (2017). Unemployment and the real exchange rate in MENA countries. *World Development*, 45(2), 431-476.
- International Labour Organisation (2016). World employment report. Geneva: ILO
- Irpan, H.M., Saad, R.M., Nor, A.H.S.M., Noor, A.H.M., & Ibrahim, N. (2016). Impact of foreign direct investment on the unemployment rate in Malaysia. *Journal of Physics: Conference Series*, 1-11
- Jain, T.R. & Khanna, O.P. (2020). *Macroeconomics and elementary statistics*. New Delhi: Vilma Kumari Jain Publications.
- Jhingan, M.L. (2016). *Advanced economic theory* (11th ed.). Delhi: Vrinda Publications (P) Ltd.

- Johnny, N., Timipere, E. T., Krokeme, O., & Markjackson, D. (2018). Impact of foreign direct investment on unemployment rate in Nigeria (1980-2015). *International Journal of Academic Research in Business and Social Sciences*, 8(3), 56–68.
- Jude, C & Silaghi, M (2016). Employment effects of foreign direct investment: New evidence from central and eastern European countries. *International Economics* 145, 32-49.
- Karimov, M., Parádi-Dolgos, A., & Pavlin, R.K. (2020). An empirical analysis of the relationship between foreign direct investment and unemployment rate: Evidence from Turkey. *European Research Studies Journal*, XXIII(1), 453-464
- Lozanoska, A., & Djambaska, E. (2015). Foreign direct investment and unemployment: Evidence from the Republic of Macedonia. *International Journal of Economics, Commerce and Management*, III(12), 73-85
- Milner, C & Wright, P. (1998). Modelling labour market adjustment to trade liberalization in an industrializing economy. *The Economic Journal* 108(447), 509-28.
- Mkombe, D., Tufa, A. H., Alene, A.D., Manda, J., Feleke, S., Abdoulaye, T., & Manyong, V. (2020). The effects of foreign direct investment on youth unemployment in the Southern African Development Community. *Development Southern Africa*, 1-16.
- Moosa, I.A., & Merza, E. (2022). The effect of COVID- 19 on foreign direct investment inflows: stylized facts and some explanations. *Future Business Journal*. <https://doi.org/10.1186/s43093-022-00129-5>
- Musa, N. (2020). Foreign direct investment and unemployment nexus in Nigeria: Evidence from ARDL Model. *Inspired Research & Review International Journal*, 02(04), 1-15
- Musa, K.S., Maijama'a, R., & Tahir, H.M. (2021). Investments and unemployment nexus in Nigeria: An application of Vector Error Correction Model (VECM). *Asian Journal of Economics, Finance and Management*, 5(2), 14-25
- Nwokoye, E.S., Igbanugo, C.I., Mgbemena, E.M., & Dimnwobi, S.K. (2019). Joblessness in the midst of riches: What factors reinforce the resource-curse syndrome in Nigeria? *International Journal of Social Science and Economic Research*, 04(03), 1787-1805
- Osabohien, R., Awolola, O. D., Matthew, O., Itua, O. Q., & Elomien, E. (2020). Foreign direct investment inflows and employment in Nigeria. *Investment Management and Financial Innovations*, 17(1), 77-84.
- Pi, J., & Chen, X. (2016). The impacts of capital market distortion on wage inequality, urban unemployment, and welfare in developing countries. *International Review of Economics & Finance*, 42, 103-115.

- Salami, A.O. & Oyewole, I.O. (2013). Impact of foreign direct investment on employment generation in Nigeria. *International Journal of Economic Development Research and Investment*, 4(1), 64- 75
- Strata, V.A., Davidescu, A. & Paul, M. A. (2015). FDI and the unemployment - A causality analysis for the latest EU members. *Procedia Economics and Finance* 23, 635 – 643
- Suyunov, A. (2022). Do foreign direct investments and bank credits affect employment in Uzbekistan? *Journal of Economics and Development*, 24(2), 98-111
- United Nations Conference on Trade and Development (UNCTAD) (1999). World investment report 1999: foreign direct investment and the challenge of development. United Nations, New York
- Yılmaz, B. (2014). Effects of economic growth, export and foreign direct investment inflows on unemployment in Turkey. *Investment Management and Financial Innovations*, 11(2), 20-27
- Yu, X., Zhang, Y., & Sun, H. (2021). Modeling COVID-19 spreading dynamics and unemployment rate evolution in rural and urban counties of Alabama and New York using fractional derivative models. *Results in Physics*, 26, 1-13