

# Foreign Direct Investment and Employment Creation in Nigeria

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## Abstract

This study investigated the impact of foreign direct investment on employment creation in Nigeria for the period of 35years (1985-2019). The study used five regressors (foreign direct investment, trade openness, government expenditure, infrastructural development, and exchange rate) and one explained variable (employment rate). The data were culled from the World Bank Development Indicators and analysis was carried out using unit root test, ordinary least square and granger causality test. The findings revealed that there is negative and insignificant relationship between trade openness, government expenditure, infrastructures and employment rate. However, positive relationship exists between foreign direct investment, exchange rate and employment but statistically insignificant at 5% level of significance. Based on the f-statistic result, the study concluded that foreign direct investment played a crucial role in creating employment for the citizens of Nigeria. It was therefore recommended among others that government should improve the state of infrastructures and security in the country as the present economy is characterized by terrorisms, kidnapping and robbery and this may drive out the investors in the country and discourage the potential ones.

**Key words:** Employment rate; Foreign direct investment; Exchange rate and government expenditure

## **1. INTRODUCTION**

The encouragement of cross-border investments is one of the attributes of globalization drive. This necessitates the need for countries to require foreign investments to complement the capacity of domestic investment for creating employment as well as achieving economic growth (Osabohien, Awolola, Matthew, Itua & Elomien, 2020). Attracting foreign investments (especially direct investment) is an essential strategy to complement strategies for economic growth. This is so because some foreign institutions, economists and politicians see direct investments as a solution to the economic problems of developing countries (Mencinger, 2003). Foreign Direct Investment (FDI) is an indispensable source of financing deficits in the current account and can also be used to augment the local investments (Afolayan, Okodua, Matthew, & Osabohien, 2019). Robu (2010) explained that FDI is sought by countries that are going through the transition period and/or those that face severe structural unemployment problems. This is the situation of Nigeria. Aremu (2005) also noted that developing countries of the world has adopted a number of measures aimed at accelerating the growth of domestic economy. One of such measures is FDI attraction.

The benefits of FDI had informed the radical and pragmatic economic reforms introduced in the mid-1980s by the government of Nigeria. These reforms were designed to attract investments and foster the growing confidence in the economy in order to attract foreign investors into the country (Okoro & Atan, 2014). The reforms led to the adoption of liberal and market-oriented economic policies, stimulate increased private sector participation and the eradication of bureaucratic obstacles which affects long-term profitable business operations in Nigeria.

To minimize the level of unemployment in the country, some scholars have argued that trade flows could propel

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employment creation, especially in developing countries. Hence, an increase in employment has a greater effect on economic growth, such that a rise in labour incomes would expand domestic demand, which in turn leads to sustainable GDP growth as well as minimizing risks of excessive reliance on foreign markets (Wheeler & Moody, 1992). Though Nigeria is blessed with huge oil revenue, but because there is no link between oil sector and the rest of the local economy, unemployment is high, poverty is prevalence and security is challenging (Okonjo-Iweala, 2012). This simply means that the large oil revenue is not used to generate employment rate is connected with the various short-run policies set aside to curb unemployment from time to time.

In Nigeria, the second most essential form of empowerment that a state can bequeath to its citizen is to create employment hence successive governments have incorporated one form of employment policy or the other into their programmes. The issue of employment is very germane to the extent that the current Nigerian president (President Muhammad Buhari) introduced youth empowerment scheme (N-Power) in 2016 to address the challenge of youth unemployment by providing a structure for large-scale and relevant work skills acquisition and development while linking its core and outcomes to fixing inadequate public services and stimulating the larger economy. The program is designed for Nigerian citizens between the ages of 18 and 35. The modular programmes under N-Power will ensure that each participant will learn and practice most of what is necessary to find or create work. As reported by Sadia Farouq in April 2020, over 400,000 youths were enrolled into this social investment programme and each beneficiary is entitled to stipend of N30,000 on a monthly basis. In spite of these efforts, employment creation still pose a major challenge to the Nigerian government because job creation in the country has not been sufficient to keep pace with the expanding working populace (World Bank, 2013). The foreign investments to supplement these empowerment programmes were found dwindling and these was attributed to poor power supply, insecurity, poor infrastructure as well as weak and slow judicial process coupled with non-transparency of government operations. The renewed interest of the research is originated from the divergent views of various scholars on FDI and employment creations. Osabohien, Awolola, Matthew, Itua & Elomien,(2020), Ajayi, Rafiu and Samuel (2019), Babasanya (2018) and Okodu (2009) found positive relationship between FDI and employment creation while Badeji and Abayomi (2011), Adofu, (2010), Otepola (2002) among others argued otherwise. In view of this, the study intends to fill the gap in the literatures by expanding the scope and considering other variables not captured in the previous studies while investigating the impact of foreign direct investment on employment creation in Nigeria.

## 2. LITERATURE REVIEW

#### **2.1 Conceptual Framework**

The concept of foreign direct investment is drawn from the submissions of Babasanya (2018), Adeleke, Olowe and Fasesin (2014), Todaro and Smith (2003) and others. According to Babasanya (2018), foreign direct investment also known as direct investment is an investment into production or business by an individual or company of another country, either by buying a company or expanding operations of an existing business. It is seen as a passive investment in the securities of another country such as stocks and bonds. Todaro and Smith (2003) defined foreign direct investments as an overseas investment by private multinational corporations. It consists of mergers and acquisitions, building new facilities, reinvesting profits earned from the operations of the foreign business (Adeleke, Olowe & Fasesin 2014). Foreign direct investment also include opening of a subsidiary, acquiring an existing foreign business, or through a means of merger or joint venture with a foreign company.

Foreign Direct Investment is believed to be stable and easier to service than bank credit. In most cases, it based on long term economic activities in which repatriation of profit only occur when the project earns profit. FDI also contributes to the host country's industrial productivity, gross capital formation, higher growth, competitiveness and other benefits such as technological transfer, managerial expertise, increased investment as well as quality improvement (Dunning & Rugman, 1985). Asiedu (2006) reiterated that FDI is a major component of the world economy and globalization, thereby assist in improving employment opportunities, technology advancement, as well as product developments. It can also provide a firm with new markets and marketing channels, cheaper production facilities, access to new technology, products skills and financing. In host country, it serves as a source of new technologies, capital, processes, products, organizational technologies and management skills, and as such can provide a strong impetus to economic growth and development.

On the other hands, the creation of employment has been widely celebrated as the key to socioeconomic progress hence, reduction in unemployment is the chief indicator of economic development (Ajayi, Rafiu & Samuel 2019). Employment is a relationship between two parties (known as employer and employee), usually based on a contract. It could also be seen as a situation whereby able bodied men and women who are qualified to work in any given society gainfully secure jobs whereby he or she will not be exploited on securing the job and equally optimise his or her capability in terms of his marginal labour production (Babasanya, 2018). Employment means the total number of people gainfully employed from ages 15 and above, that is, the employment to population ratio (+15), which is the proportion of a nation's population that is gainfully employed. In other words, it simply refers to the persons in employment with aged 15 years and above who work for pay. The proportion of total number of employed persons to the total number of persons in the labour force is known as employment rate. Employment rate also refers to the total annual employment growth rate in Nigeria. It is measured with reference to the total population of the Nigeria citizenry that are ready and willing to work. Full employment does not imply zero unemployment; rather it means the level of employment that occurs when the unemployment rate is normal, considering both structural and frictional factors.

## 2.2 Theoretical Framework

This study adopts the theory of eclectic paradigm developed by John Dunning (1993) as a baseline for the model. The theory combines the major factors that are important to other theories of FDI; Location-specific advantages (L), Internalization advantages (I), and Ownership-specific advantages (O). The latter refers to those assets of a firm that allow successful competition in overseas markets despite lack of knowledge and the costs of setting up of a foreign affiliate. Ownership advantage must be present in a host country that is sufficient enough to counter challenge competition with firms in their home country (Sean-Leigh, 2007). He further explains the advantages as effective productivity and marketing and at the same time having foreign competitive advantage over domestic firms. Similarly, Shenkar (2007) pinpoints resources endowments, technology and information, managerial and marketing skills, manpower, capital and organization systems as the attributes of ownership advantage. On the other hands, location advantages entail those benefits that a host country can offer a firm. These include large markets, good infrastructure, low labour or production costs or both. In the view of Wall and Ress (2004), there must be rise in profits from exploiting a firm's ownership advantage in a distinguished location than its local market and thereby leading to either cultural, economic, or market prospects benefits. Internalization advantage involves transaction-costs, and arises when it is cheaper to exploit ownership and location advantages through FDI rather than exporting. With internalization, firms have opportunities to fully exploit the ownership advantage which emanate from the knowledge of marketing a commodity. Succinctly, internalization and ownership advantages are investor specific determinants while the location advantage is specific to the host country.

## 2.3 Empirical Review

Several researchers have carried out studies on the impact of foreign direct investment on employment creation in Nigeria. To mention but few, Osabohien, Awolola, Matthew, Itua, and Elomien (2020) carried out a research on foreign direct investment inflow and employment in Nigeria for the period of 1985–2017. The study used the Fully Modified Ordinary Least Squares (FMOLS) and the Johansen co-integration econometric approach on the data, which were gathered from the World Development Indicators (WDI) and the Central Bank of Nigeria (CBN) statistical bulletin. The results obtained show that foreign direct investment is statistically significant and positively related to the employment level in Nigeria.

Ajayi, Rafiu and Samuel (2019) investigated the impact of foreign direct investment on employment and unemployment rate in Nigeria for the period of 1980-2014. The study sourced data from CBN Statistical Bulletin, National Bureau of Statistics and World Bank Indicators and the data were analysed by E-view 9.5. The findings revealed that FDI has a significant role on employment rate in Nigeria. Thus, it was recommended that policies should be implemented to exploit the impact of FDI on employment in an attempt to reduce the unemployment rate in Nigeria. Similarly, Johnny, Timipere, Krokeme and Markjackson (2018) assessed the impact of foreign direct investment on unemployment rate in Nigeria between 1980 and 2015. The study was carried out using unit root test, co-integration test, and ordinary least square. It was revealed that negative and insignificant relationship exists between foreign direct investment and unemployment rate in Nigeria while positive and significant relationship occurs between capital formation and unemployment rate. The study therefore suggested that government should implement policies that will attract foreign investors to Nigeria to make more investments and should also ensure that all resources for productive activities are fully employed before embarking on savings.

Babasanya (2018) examined the relationship between foreign direct investment and employment generation in Nigeria covering the period of 1999 to 2016. The study considered employment rate (as dependent variable) and gross domestic product, foreign direct investment, 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 employment rate in Nigeria. It was therefore recommended that government should make concrete efforts in attracting foreign investors into Nigeria to increase production and thereby creates employment opportunities.

# 3. METHODOLOGY AND MODEL SPECIFICATION

The study adopts secondary source of data was employed in this study. The data were gathered from the World Bank Development Indicator between 1985 and 2019. The variables considered include employment rate, foreign direct investment, openness to trade, government expenditure, infrastructural development, and exchange rate. In order to avoid spurious results, all variables were taken in logarithm form. Thus, the following model is formulated:

EMPR = f(FDI, OPT, GE, INFR, EXTR)

In econometric term

 $EMPR = \beta_0 + \beta_1 FDI + \beta_2 OPT + \beta_3 GE + \beta_4 INFR + \beta_4 EXTR + \mu$ 

The model is further transform into logarithms form:  $LNEMPR = \beta_0 + \beta_1 LNFDI + \beta_2 LNOPT + \beta_3 LNGE + \beta_4 LNINFR + \beta_5 LNEXTR + \mu$ 

Where LNEMPR represents Log of Employment Rate; LNFDI is Log of Foreign Direct Investment; LNOPT indicates Log of Openness to Trade; LNGE connotes Log of Government Expenditure; LNINFR is Log of Infrastructural Development; and LNEXTR represents Log of Exchange Rate.

 $\beta_0$  means Constant term;  $\beta_1 - \beta_5$  implies the coefficient of the regressors; and  $\mu$  indicates Error term.

The estimation method used in this study is Ordinary Least Square (OLS) and granger causality tests. The analysis was conducted using Eview9. The economic procedures consist of the following techniques:

## 3.1 Unit Root Test

The study examines the stationarity properties of each time series under consideration. It uses Augmented Dickey-Fuller (ADF) unit root test to determine the stationarity of the data series. It consists of running a regression at I(1) of the series against the series lagged once, lagged difference terms and optionally, a constant and a time trend. This can be expressed as follows:

$$Y_{t\, =\,} \alpha_{0} \, + \, \alpha_{1} t \, + \, \alpha_{2} \, Y_{t\text{--}1} \, + \, \sum_{J=1}^{} \alpha_{j} \, Y_{t\text{--}j\, +} \, \mu$$

#### 3.2 Granger Causality

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This test is adopted to estimate the short run relationship between foreign direct investment and employment creation in Nigeria. The test checks whether the inclusion of the past values of a variable, say X improves the prediction of present values of another variable, say Y. So, if the prediction of Y improved by including past values of X using the past values of Y, then X is said to granger cause Y. Similarly, if the past values of Y improve the prediction of X relative to using only the last values of X, then Y is said to granger cause X. However, if both X is found to granger cause Y and Y is found to granger cause X, then a feedback relationship exists.

#### 3.3 Ordinary Least Square (OLS)

This method is an econometric technique which correlates/ relates the changes in one variable to another. The regression analysis is employed to reveal appropriateness and accuracy of model and how the regressors influence on the explained variable in the study.



4. RESULTS AND INTERPRETATION

**Trend Analysis of Variables** 

#### Figure 1 The Trend of Employment Rate in Nigeria between 1985 and 2019

Creation of employment to the citizens of the country has been the core objective of all successive government in Nigeria yet this path has not been fully achieved. The figure 1 shows the trends of employment rate in Nigeria over the years. The y axis shows the rate of employment, and the x-axis shows the years under study. Based on the output, Nigeria achieved highest employment rate in 1989 at 3.38% (the figure is log form) while the least occurred in 2013. Achieving higher rate of employment in 1989 may be attributed to contribution of agricultural sector to the economy before focusing on oil sector. From 1989 to 2012, there is little or no difference in the flow of employment creation in the country. Within a year, Nigeria's employment falls drastically from 3.35% in 2012 to 3.04% in 2013. In 2014, the employment rate rises but not as high as 1989 (World Bank, 2019).





Source: Eview 9

Figure 2 The Trend of Foreign Direct Investment in Nigeria between 1985 and 2019

The Figure 2 depicts the trend of foreign direct investment in Nigeria over the years. It was shown from the trends that Nigeria has not experience a steady growth of foreign direct investment inflows. This implies there is high and low flow of investment on the average of two years. In 2012, the country recorded high flow of FDI at 22.5% and this may be as a result of little improvement in infrastructural facilities. However, the FDI inflow in Nigeria is 19.01% in 1986 which represents the lowest flow of investment into the country. Since 2012, the trend of FDI has been on upward and downward slope in Nigeria.

#### Table 1 Unit Root Test

Variable	t-stat	Prob.	t-stat	Prob.	Order of Integration
LNEMPR	-4.342332	0.0083	-	-	I(0)
LNFDI	-2.871289	0.1838	-9.517347	0.0000	I(1)
LNOPT	-3.365635	0.0195	-	-	I(0)
LNGE	-2.720025	0.2354	-4.867568	0.0004	I(1)
LNINFR	-3.626187	0.0109	-	-	I(0)
LNEXTR	-3.435940	0.0165	-	-	I(0)

Source: Author's Computation from Eview9

# Table 2Correlation Analysis

The findings of this study can only be useful and if the policy makers can accept the validity or relevance of the outcome. Therefore, this study adopted Augmented Dickey and Fuller (ADF) to test for stationarity among the variables considered to avoid spurious regression. The results of ADF reveals that some variables were stationary at levels I(0) while others stationary at first difference I(1). The variables stationary at levels I(0) include LNEMPR, LNOPT, LNINFR and LNEXTR while that of first difference I(1) are LNFDI and LNGE at 5 percent level of significance. Consequently, we therefore conclude that the study is free from spurious regression and suitable for OLS approach.

The Table 2 shows the results of the correlation among the data series. From the results, there is a negative correlation between lnEMPR and lnFDI, lnOPT, lnGE, lnINFR and lnEXTR. The correlation between lnEMPR and lnFDI, as well as lnOPT is negative and moderate at -0.451373and -0.049964 respectively while that of lnEMPR and lnGE, lnINFR and lnEXTR are negative and high at -0.689990, -0.624938 and -0.580029 respectively. However, the correlation between lnFDI and lnOPT, lnGE, lnINFR and lnEXTR is positive. While the correlation between lnFDI and lnOPT is moderate, the correlation between lnFDI and other series is high. Furthermore, there exists a positive and very high correlation between lnINFR and lnEXTR for the period under review.

	LNEMPR	LNFDI	LNOPT	LNGE	LNINFR	LNEXTR
LNEMPR	1	-0.451373	-0.049964	-0.689990	-0.624938	-0.580029
LNFDI		1	0.353435	0.797868	0.757972	0.774253
LNOPT			1	0.089017	0.539795	0.547839
LNGE				1	0.773042	0.747689
LNINFR					1	0.969337
LNEXTR						1

Source: Author's Computation from Eview 9

 Table 3

 OLS Results before the Correction of Autocorrelation

Variable	Coefficient	Std. error	t-statistic	Prob.
С	4.304724	0.480336	8.961895	0.0000
LNFDI	0.020633	0.014569	1.416223	0.1674
LNOPT	0.028401	0.031996	0.887644	0.3820
LNGE	-0.036914	0.020104	-1.836164	0.0766
LNINFR	-0.163660	0.136629	-1.197844	0.2407
LNEXTR	0.005117	0.022369	0.228771	0.8207
F-statistic	7.527153	Durbin-V	Watson stat	1.048091
Prob (F-statistic)	0.000124			

*Source: ou Author's Computation from Eview9* 

The OLS results show the Durbin-Watson statistics of 1.048091 which implies the presence of autocorrelation among the data series. Hence, there is need to correct the autocorrelation problem by lagging the dependent variable as explanatory variable.

 Table 4

 OLS Results after the Correction of Autocorrelation

Variable	Coefficient	Std. error	t-statistic	Prob.
С	1.957973	0.808198	2.422639	0.0224
LNFDI	0.001936	0.013601	0.142320	0.8879
LNOPT	-0.001950	0.029370	-0.066382	0.9476
LNGE	-0.014134	0.018616	-0.759215	0.4543
LNINFR	-0.107705	0.120921	-0.890710	0.3810
LNEXTR	0.014250	0.020670	0.689386	0.4965
LNEMPR (-1)	0.610936	0.174499	3.501085	0.0016
F-statistic	10.34089	Durbin-W	Vatson stat	1.476828
Prob (F-statistic)	0.000006			

Source: Author's Computation from Eview9

## COEFFICIENTS

LNEMPR =  $\beta_0$  + 0.001936LNFDI -0.001950LNOPT + -0.014134LNGE -0.107705LNINFR+ 0.014250LNEXTR From the analysis, the intercept (1.957973) shows that the employment rate will experience the value of 1.957973 while holding all other variables constant. The coefficient of openness to trade, government expenditure, and infrastructures are negatively related with employment rate. This implies that a unit increase in each of these variables will result to decrease in employment rate by 0.01, 0.14 and 10.7 respectively. However, foreign direct investment and exchange rate show positive relation with employment rate. That is, as foreign direct investment and exchange rate increases by one unit, employment rate rise by 0.01 and 1.4 respectively.

#### **Coefficients of Determination**

The  $R^2$  (0.696784) implies that 69.7% of the variation in the employment rate is influenced by the regressors (lnFDI, lnOPT, lnGE, lnINFR and lnEXTR) while the remaining 30.3% is explained by other variables outside the model but captured by the error term. Also, the adjusted  $R^2$  explain the fitness of the regression by 62.9% after adjusting for the degree of freedom. The Durbin Watson statistics in the model is 1.476828 thus; there is absence of autocorrelation among the variables in the model.

### **T and F Statistics**

From the regression, it was established that individual regressor has insignificant impact on employment in Nigeria at 5% level of significance. The *f*- statistics in the regression line shows 10.34089 and pvalue of 0.000006. Since, the pvalue is less than 5% level of significance (0.000006 < 0.05), we can easily conclude that the combination of the variables significantly influenced employment creation in Nigeria for the period under review.

## Table 5

#### **Diagnostics** Check

F-statistic	1.381399	Prob. F(6,27)	0.2578
Obs*R-squared	7.985783	Prob. Chi-Square(6)	0.2391
Scaled explained SS	21.33713	Prob. Chi-Square(6)	0.0016

Source: Author's Computation from Eview9

Since the probabilities of the chi-square is greater than 0.05. We can conclude that the model is freed of any heteroskedasticity problem.

The granger causality among the data series are assessed by their respective probability values at significance level of 5%. From the results, it can be deduced that uni-directional relationship exists among the variables such as LNEMPR/LNOPT, LNGE/LNEMPR, LNINFR/LNEMPR, LNFDI/LNGE, LNGE/LNOPT and LNEXTR/LNGE.

#### Table 6 Causality Test

Null Hypothesis:	Obs	<b>F-Statistic</b>	Prob.
LNOPT does not Granger Cause LNEMPR	33	0.85259	0.4371
LNEMPR does not Granger Cause LNO	PT	3.54481	0.0424
LNGE does not Granger Cause LNEMPR	33	4.48213	0.0205
LNEMPR does not Granger Cause LNG	Е	1.78264	0.1868
LNINFR does not Granger Cause LNEMPR	33	3.64493	0.0392
LNEMPR does not Granger Cause LNIN	VFR	0.04354	0.9575
LNGE does not Granger Cause LNFDI	33	1.05301	0.3623
LNFDI does not Granger Cause LNGE		4.25484	0.0244
LNGE does not Granger Cause LNOPT	33	3.62216	0.0399
LNOPT does not Granger Cause LNGE		2.25058	0.1241
LNEXTR does not Granger Cause LNGE	33	5.49667	0.0097
LNGE does not Granger Cause LNEXT	R	0.78400	0.4663

Source: Author's Computation from Eview9

## **CONCLUSION AND RECOMMENDATIONS**

The debate on the influence of foreign direct investment on employment creation of host countries commenced from the inception of Multinational Corporations (MNCs) for over six decades ago. In lieu of this, this present study found out the extent to which foreign direct investment inflows has contributed to employment opportunities in Nigeria. Considering the above findings, the study concluded that foreign direct investment play crucial role in creating employment opportunities for the citizens of Nigeria. Consequently, the following recommendations were made for policy implementation:

The government should improve the state of infrastructures and security in the country as the present economy is characterized by terrorisms, kidnapping and robbery in different parts of the country and this may drive out the investors in the country and discourage the potential ones.

The monetary authority should formulate and implement policies that will stabilize the Naira exchange rate in relations to other major currencies such as USDollar, Bristish Pound Sterling as this will boost the confidence of the investor in the country.

The policy makers should ensure that all productive resources are effectively utilized before embarking on any form of savings because capital mobilized into productive activities will minimize the level of unemployment and can regenerate more capital for future purposes.

Finally, conscious efforts should be made to reduce overdependence on foreign made goods in the country. Nigeria only needs importation of some raw material contrary to the effects of imports of finished goods, encourage local and foreign firms' productive output, prioritize employment and engage in exportation of goods to rest of the world.

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APPENDI	K I					
Year	EMPR	FDI	ОРТ	GE	INFR	EXTR
1985	28.78	485581320.9	10.39198	70942250509	23.23	0.893774
1986	28.56	193214907.5	9.135846	54059213277	23.56	1.754523
1987	28.12	610552091.5	19.49534	49410138332	25.78	4.016037
1988	29.56	378667097.7	16.94061	46968602692	26.34	4.536967
1989	29.13	1884249739	34.18262	36822231462	27.5	7.364735
1990	29.19	587882970.6	30.92474	48078453983	27.3	8.038285
1991	29.209	712373362.5	37.0216	43483502705	34.79286	9.909492
1992	29.038	896641282.5	38.22739	43148249459	35.68333	17.29843
1993	28.754	1345368587	33.71975	25972365269	36.57439	22.0654
1994	28.451	1959219858	23.05924	32466439577	37.46665	21.996
1995	28.131	335842165	39.52838	40192347726	38.36071	21.89526
1996	28.052	499276809.5	40.25773	48117672551	39.25716	21.88443
1997	27.91	469577019.8	51.46101	51278316044	40.1566	21.88605
1998	27.726	299566658.3	39.27861	56236945015	41.0588	21.886
1999	27.499	1004915631	34.45783	54497628307	44.9	92.3381
2000	27.347	1140167556	48.9956	53440171373	42.85609	101.6973
2001	27.448	1190618644	49.6805	68980445225	43.74224	111.2313
2002	27.517	1874070753	40.03517	89238899377	44.61411	120.5782
2003	27.537	2005353563	49.33496	1.00539E+11	52.2	129.2224
2004	27.59	1874060887	31.89587	1.24641E+11	46.29712	132.888
2005	27.622	4982533930	33.05946	1.60267E+11	47.10199	131.2743
2006	27.885	4854353979	42.56657	1.97228E+11	47.89076	128.6517
2007	28.079	6036021405	39.33693	2.66983E+11	50.13092	125.8081
2008	28.183	8194071895	40.79684	3.01501E+11	50.3	118.5667
2009	28.105	8555990007	36.05871	2.88372E+11	50.27625	148.88
2010	28.11	6026253091	43.32076	3.39992E+11	48	150.2975
2011	28.192	8841062051	53.27796	3.73243E+11	55.9	153.8625
2012	24.65	7069908428	44.53237	3.75688E+11	53.27933	157.5
2013	21.403	5562857987	31.04886	4.88956E+11	55.6	157.3117
2014	23.48	4693828632	30.88519	5.34474E+11	54.9189	158.5526
2015	25.553	3064168904	21.33265	4.94583E+11	52.5	192.4403
2016	26.241	4448732917	20.72252	4.13901E+11	59.3	253.492
2017	25.653	3502999131	26.3476	3.75762E+11	54.4	305.7901
2018	25.505	1997485165	33.00783	4.0618E+11	56.5	306.0837
2019	25.288	3299085483	29.6777	4.0728E+11	57.5	306.921

Source: WDI, 2019

## **APPENDIX II**

	LNEMPR	LNFDI	LNOPT	LNGE	LNINFR	LNEXTR
LNEMPR	1.000000	-0.451373	-0.049964	-0.689990	-0.624938	-0.580029
LNFDI	-0.451373	1.000000	0.353435	0.797868	0.757972	0.774253
LNOPT	-0.049964	0.353435	1.000000	0.089017	0.539795	0.547839
LNGE	-0.689990	0.797868	0.089017	1.000000	0.773042	0.747689
LNINFR	-0.624938	0.757972	0.539795	0.773042	1.000000	0.969337
LNEXTR	-0.580029	0.774253	0.547839	0.747689	0.969337	1.000000

Dependent Variable: LNEMPR

Method: Least Squares

Date: 01/31/21 Time: 10:15

Sample: 1985 2019

Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	4.304724	0.480336	8.961895	0.0000
LNFDI	0.020633	0.014569	1.416223	0.1674
LNOPT	0.028401	0.031996	0.887644	0.3820
LNGE	-0.036914	0.020104	-1.836164	0.0766
LNINFR	-0.163660	0.136629	-1.197844	0.2407
LNEXTR	0.005117	0.022369	0.228771	0.8207
R-squared	0.564798	Mean dep	endent var	3.308952
Adjusted R-squared	0.489764	S.D. depe	endent var	0.067265
S.E. of regression	0.048048	Akaike inf	fo criterion	-3.078441
Sum squared resid	0.066949	Schwarz	criterion	-2.811810
Log likelihood	59.87271	Hannan-Q	uinn criter.	-2.986400
F-statistic	7.527153	Durbin-W	Vatson stat	1.048091
Prob (F-statistic)	0.000124			

Dependent Variable: LNEMPR Method: Least Squares

Date: 01/31/21 Time: 10:17

Sample (adjusted): 1986 2019

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	1.957973	0.808198	2.422639	0.0224
LNFDI	0.001936	0.013601	0.142320	0.8879
LNOPT	-0.001950	0.029370	-0.066382	0.9476
LNGE	-0.014134	0.018616	-0.759215	0.4543
LNINFR	-0.107705	0.120921	-0.890710	0.3810
LNEXTR	0.014250	0.020670	0.689386	0.4965
LNEMPR(-1)	0.610936	0.174499	3.501085	0.0016
R-squared	0.696784	Mean dep	endent var	3.307460
Adjusted R-squared	0.629402	S.D. depe	endent var	0.067686
S.E. of regression	0.041205	Akaike inf	to criterion	-3.359279
Sum squared resid	0.045842	Schwarz	criterion	-3.045029
Log likelihood	64.10775	Hannan-Q	uinn criter.	-3.252111
F-statistic	10.34089	Durbin-W	/atson stat	1.476828
Prob (F-statistic)	0.000006			

#### Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.381399	Prob. F(6,27)	0.2578
Obs*R-squared	7.985783	Prob. Chi-Square(6)	0.2391
Scaled explained SS	21.33713	Prob. Chi-Square(6)	0.0016

Test Equation: Dependent Variable: RESID^2 Method: Least Squares Date: 01/31/21 Time: 10:19 Sample: 1986 2019 Included observations: 34

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	-0.049469	0.075564	-0.654663	0.5182
LNFDI	0.001099	0.001272	0.863888	0.3953
LNOPT	0.000969	0.002746	0.353038	0.7268
LNGE	0.001304	0.001741	0.748934	0.4604
LNINFR	0.010917	0.011306	0.965647	0.3428
LNEXTR	-0.003142	0.001933	-1.625624	0.1156
LNEMPR(-1)	-0.011359	0.016315	-0.696248	0.4922
R-squared	0.234876	Mean dep	Mean dependent var	
Adjusted R-squared	0.064848	S.D. dep	endent var	0.003984
S.E. of regression	0.003853	Akaike in	fo criterion	-8.098937
Sum squared resid	0.000401	Schwarz	Schwarz criterion	
Log likelihood	144.6819	Hannan-Quinn criter.		-7.991769
F-statistic	1.381399	Durbin-V	Vatson stat	1.846640
Prob (F-statistic)	0.257813			

Pairwise Granger Causality Tests Date: 01/31/21 Time: 10:23 Sample: 1985 2019

Lags: 2

Null Hypothesis:	Obs	<b>F-Statistic</b>	Prob.
LNFDI does not Granger Cause LNEMPR	33	2.31934	0.1169
LNEMPR does not Granger Cause LNFI	DI	0.60591	0.5526
LNOPT does not Granger Cause LNEMPR	33	0.85259	0.4371
LNEMPR does not Granger Cause LNO	РТ	3.54481	0.0424
LNGE does not Granger Cause LNEMPR	33	4.48213	0.0205
LNEMPR does not Granger Cause LNC	θE	1.78264	0.1868
LNINFR does not Granger Cause LNEMPR	33	3.64493	0.0392
LNEMPR does not Granger Cause LNI	NFR	0.04354	0.9575
LNEXTR does not Granger Cause LNEMPR	33	2.46775	0.1030
LNEMPR does not Granger Cause LNE	XTR	1.04675	0.3644
LNOPT does not Granger Cause LNFDI	33	1.25634	0.3003
LNFDI does not Granger Cause LNOPT	Γ	0.33782	0.7162
LNGE does not Granger Cause LNFDI	33	1.05301	0.3623
LNFDI does not Granger Cause LNGE		4.25484	0.0244
LNINFR does not Granger Cause LNFDI	33	0.15753	0.8550
LNFDI does not Granger Cause LNINFI	R	2.21777	0.1276
LNEXTR does not Granger Cause LNFDI	33	0.57427	0.5696
LNFDI does not Granger Cause LNEXT	R	1.70501	0.2001
LNGE does not Granger Cause LNOPT	33	3.62216	0.0399
LNOPT does not Granger Cause LNGE		2.25058	0.1241
LNINFR does not Granger Cause LNOPT	33	0.62285	0.5437
LNOPT does not Granger Cause LNINF	R	1.26867	0.2969
LNEXTR does not Granger Cause LNOPT	33	0.21569	0.8073
LNOPT does not Granger Cause LNEX	ΓR	2.05708	0.1467
LNINFR does not Granger Cause LNGE	33	2.73399	0.0823
LNGE does not Granger Cause LNINFR	_	2.16305	0.1338
LNEXTR does not Granger Cause LNGE	33	5.49667	0.0097
LNGE does not Granger Cause LNEXT	R	0.78400	0.4663
LNEXTR does not Granger Cause LNINFR	33	1.76628	0.1895
LNINFR does not Granger Cause LNEX	TR	1.83873	0.1777