

## AN ASSESSMENT OF FOREIGN DIRECT INVESTMENT ON EMPLOYMENT GENERATION IN NIGERIA (2000–2020)

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**ABSTRACT:** The paper attempts to expound on an Assessment of Foreign Direct Investment on Employment Generation in Nigeria (2000–2020). The differenced Ordinary Least Square (OLS) method was used after it was discovered that there was no cointegration in the model. The findings of the study reveal that Foreign Direct Investment contributes positively to Employment significantly. The study concluded that a considerable level growth has been achieved as a result of the contribution of Foreign Direct Investment in Nigeria. The study recommended that Government should intensify efforts in fighting insecurity in order to create a safe environment for foreign investors to make investments in Nigeria. Another recommendation is that there is the need for the government to come up with policies that will make the macroeconomic environment more conducive and competitive. This will create an enabling environment for foreigners to continue investing and increase their participation in the Nigerian economy.

Key words: Foreign Direct Investment, Employment.

## INTRODUCTION

Foreign direct investment is an ideology that explains the relationship between a country to the other through their efforts to involve in crossborder business. A country has to offer what it has to another country in order to enhance a good business relationship, also to improve their wellbeing in the society which leads to a common benign relationship for the betterment of their country through the production of goods and offering services (Ayanwale, 2017). Foreign Direct Investment (FDI) can be described as a flow of capital, technology and know- how from one (home) country to another (host) country. Investopedia defines FDI as an investment made by a company or entity based in one country, into a company or entity based in another company. Foreign direct investment is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. A recent and specific

example is the perceived role of FDI in efforts to stimulate economic growth in many of the world's poorest countries. Partly this is because of the expected continued decline in the role of development assistance, on which these countries have traditionally relied heavily, and the resulting search for alternative sources of foreign capital. More importantly, FDI can be a source not just of badly needed capital, but also of new technology and intangibles such as organizational and managerial skills, and marketing networks. FDI can also provide a stimulus to competition, innovation, savings and capital formation, and through these effects, to job creation and economic growth. Furthermore foreign direct investments is an act of creating a bilateral relationship through crossborder business with each other (Bailey, 2018).

Therefore, high level of foreign direct investment will have a progressive influence on the economic growth of every nation. A greater number of foreign direct investment increase country's productivity and improve their standard of living. In developing countries, the adoption of foreign direct investment is a way to encourage economic growth. The result of this relationship undeniably has an important role in fostering social economic development. Foreign direct investments help address the weakness of the country and reduce unemployment; statistically many countries have successfully industrialized through strong foreign direct Host countries often try to channel FDI into new investment. infrastructure and other projects to boost development. Greater competition from new companies can lead to productivity gains and greater efficiency in the host country and it has been suggested that the application of a foreign entity's policies to a domestic subsidiary may improve corporate governance standards. Furthermore, foreign investment can result in the transfer of skills through training and job creation, the availability of more advanced technology for the domestic market and access to research and development resources. The local population may be able to benefit from the employment opportunities created by new businesses.



Nigeria is one of the economies with great demand for goods and services and has attracted some FDI over the years. Africa and Nigeria in particular joined the rest of the world to seek FDI as evidenced by the formation of New Partnership for Africa's Development (NEPAD), which has the attraction of foreign investment to Africa as a major component. The Nigerian governments in recognizing the relevance of FDI have been pursuing various strategies involving the incentive policies and regulatory measures geared essentially towards the promotion of inflow of FDI to the country (Onu, 2012). The Government of Nigeria has established various institutions, rules, laws, regulations, and policies aimed at encouraging and increasing the human capital FDI (Ejemeyovwi, Osabuohien, & Osabohien, 2018; Matthew & Johnson, 2014). For example, in the year 1995, the Nigeria Investment Promotion Commission (NIPC) was created through the Decree number 16 of the year 1995. The Law created allows for foreign investors to be able to establish the businesses with 100% ownership, which must be registered under the Corporate Affairs Commission according to the provisions made available by the Companies and Allied Matters Decree of 1990. The company's registration is completed with NIPC. The NIPC Decree ensures foreign investment against nationalization or confiscation, which brings about adequate protection by the government. The Nigeria Investment Promotion Commission (NIPC) Decree nullifies the Industrial Development and Coordinating Committee (IDCC) Decree number 36 of 1988, and the Nigerian Enterprises Promotion Decree (NEPD) of 1972 as amended in 1977 and in the year 1989, which formerly reserved the ownership of certain businesses to Nigerians (Matthew & Johson, 2014)

Nigeria's vast oil and gas resources have proven a magnet for foreign investors, especially in times of rising oil prices. Given the prominence of the oil industry in Nigeria, the main source countries for FDI inflows are those that are host countries of the major oil multinational companies (MNCs). The United States of America, present in Nigeria's oil sector through Chevron, Texaco and Exxon Mobil, had investment stock of USD3.4 billion in Nigeria in 2008. The United Kingdom (UK), one of the host countries of Shell, is another key FDI partner. UK FDI into

Nigeria accounts for about 20% of Nigeria's total foreign investment. As China seeks to expand its trade relationships with Africa, it too is becoming one of Nigeria's most important sources of FDI; Nigeria is China's second largest trading partner in Africa, next to South Africa. From USD3 billion in 2003, China's direct investment in Nigeria is reported to be now worth around USD6 billion. The oil and gas sector receives 75% of China's FDI in Nigeria. Other significant sources of FDI include Italy, Brazil, the Netherlands, France and South Africa. Fortunately, captivated by high rates of return, investors from all over the world have now set their sights on Nigeria. As Africa's most populous country, Nigeria also boasts of the continent's second largest oil reserves. Nigeria is becoming a rather worthy recipient of foreign capital (World Bank 2012).

The goal of achieving full employment among other macroeconomic goals is an important one in many developing nations where unemployment and underemployment have been a major cause and consequence of widespread poverty (Shodipe and Ogunrinola, 2011). However in many poor nations of the world, Nigeria included, in spite of the very high-sounding electioneering promises of political leaders, the achievement of impressive growth and decent employment remains a mirage. Especifically, the economic downturn led to the implementation of stabilization measures which included restriction on exports, which caused import dependency of most Nigerian manufacturing enterprises, which in turn resulted in operation of many companies below their installed capacity. This development led to the close down of many industries, while the survived few were forced to retrench a large proportion of their workforce; furthermore, the Nigerian government also placed an embargo on employment.

# STATEMENT OF THE PROBLEM

Nigeria is the most populous country in Africa and it is blessed with a large pool of surplus labour. Nigeria's labour market is dualistic as it is characterized with both formal and informal employment with the bulk of its labour force engaged in agriculture particularly at the substance



level (Ogunlela and Mukhtar, 2009). Oni (2006) argued that reducing the level of unemployment will increase the income level in the economy and thereby reduce the level of poverty. To reduce the level of unemployment, some scholars have argued that the flow of goods and services (trade flows) could propel employment generation, especially in developing countries. Growth in employment has a feedback on economic growth, such that an increase in labour incomes would expand domestic demand, which in turn would lead to sustainable GDP growth and reducing risks of excessive reliance on uncertain foreign markets (Wheeler and Mody, 1992). Although Nigeria has large oil revenue, but because there is a tenuous nexus between the oil sector and the rest of the local economy, unemployment is high, poverty is prevalence and security is a current challenge (Okonjo-Iweala 2012, Olugbile 2012). This implies that the large oil revenue is not used to generate employment in the economy. The erratic movement in the rate of unemployment in the country is not unconnected with the various short-run policies put in place to curb unemployment from time to time. In general, Nigeria like any other countries in the world has realized that, as a matter of fact, apart from education, the second most important form of empowerment that a state can bequeath to its citizen is to assure them of gainful 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 Nigeria as well as every economy that is why high or full rate of employment is one of the macroeconomic goals of every economy. The goal of increasing the level of employment among other macroeconomic objectives is an important one in many developing nations where unemployment and underutilization of resources has led to rising rate of poverty. However, employment creation still poses a major challenge to the Nigerian government. World Bank (2013) reports that job creation in Nigeria has been inadequate to keep pace with the expanding working populace.

FDI is assumed to benefit a poor country like Nigeria, not only by supplementary domestic investment, but also in terms of employment creation, transfer of technology, increased domestic competition and

other positive externalities (Anyanwale, 2007). Since full employment is one of the core elements of economic developments, it is very imperative to find out the likely impact of the inflow of FDI to the employment generation in Nigeria. It has become necessary to establish the relationship between FDI and employment generation since FDI is seen as a driver of employment, technological progress, productivity improvements, and ultimately economic growth. It also plays the critical roles of filling the development, foreign exchange, investment, and tax revenue gaps in developing countries. Foreign direct investment is in contrast to portfolio investment which is a passive investment in the securities of another country such as stocks and bonds. Hence, the need for Nigeria to further give more attention to FDI inflows to enhance more employment in the economy. It is the light of the above that the researcher wants to undertake an assessment of FDI on employment generation in Nigeria.

## THE LITERATURE

Foreign direct investment (FDI) is a direct investment into production or business in a country by an individual or company of another country, either by buying a company in the target country or by expanding operations of an existing business in that country. Agrawal, (2015) defined foreign direct investment as a category of international investment that reflect the objective of residents in one country (the direct investors) obtaining a lasting interest in an enterprise resident in another country (the direct investment enterprise). The lasting interest implies the existence of a long-term relationship between the direct investors and the direct investment enterprise and the significant degree of influence by the investor on the management of the enterprise. Investor Words (2010) defined foreign direct investment as productive assets by a company incorporated in a foreign country, as opposed to investment in shares of local companies by foreign entities and stand as an important feature of an increasingly globalized economic system. Foreign direct investment plays an extraordinary and growing role in global business. It can provide a firm with new markets and marketing channels, cheaper production facilities, access to new technology,



products skills and financing. For a host country which receives the investment, it can provide a source of new technologies, capital, processes, products, organizational technologies and management skills, and as such can provide a strong stimulus to economic development. According to Mfinanga (2018), foreign direct investment reduces the level of poverty, sustain the economic growth and stimulate the smooth and favorable integration of country's economy into the global international economy which promote long run development. Foreign direct investment serves as driver of growth and development through the provision of investment capital, boosting of competition and aiding of local firms in adapting to more efficient technology and management styles in their operation. Due to insufficiency of domestic investment to promote the growth aspiration of an economy, the need for international investment to stimulate growth becomes necessary.

Dunning and Rugman (1985), stated that Foreign Direct Investment (FDI) contributes to the host country's gross capital formation, higher growth, industrial productivity and competitiveness and other spinoff benefits such as transfer of technology, managerial expertise, improvement in the quality of human resources and increased investment. FDI is usually on long term economic activities in which repatriation of profit only occur when the project earns profit. Furthermore, Izuchukwu and Huiping (2010) defined FDI as an engine of growth to developing countries. Foreign direct investment inflow into a given country is expected to bring about significant changes in her economic development and output growth. Multinational companies (MNCs) come into a country and either set up new subsidiaries in the host country (or expand an existing one) or they acquire an existing business through merger or acquisition. These new investments generate employment. In the same vein, Sloman and Hinde (2007) noted that the employment that MNCs creates is both direct, in the form of people employed in the new production facility, and indirect through the impact that the MNC has on the local economy. According to the International Labour Organization (2012), an employed person is a person aged 15 years or older who have worked (for pay or profit for at least one hour

during a given week or having a job from which being absent under conditions on the reason of absence ( due to holidays, sick leave, maternity leave, etc.) or duration. Employees, self-employed or family workers are covered. Illegal workers are also included. Persons who declare having a job from which they are absent are classified as employed if they are absent due to annual leave, maternity / paternity leave, working time arrangement, job-related training, short-time working (or technically unemployed), strike, bad weather, regardless the duration, sick leave if the duration is one year or less, parental leave or other unpaid leave if the duration is 3 months or less.

Justice Saunders (2001) of the British Columbia Court of Appeal used these words: "Largely read, employment may refer to work, or an activity in which a person receives valuable consideration. More narrowly read, employment may refer to the position of a person in the service of another or performance of services under a contract of service". The importance of the term surfaces in workmen compensation schemes where entitlement to benefits depends on the injury occurring in the course of employment. Other instances where the distinction may be essential is the area of vicarious liability for employees; whether the tort caused by the employee occurred inside or outside of the employment.

# THEORETICAL LITERATURE

# General Theory of Employment by John Maynard Keynes (1936)

According to classicists, there will always be full employment in a free enterprise capitalist economy because of the operation of Say's Law and wage-price flexibility. This classical theory came under severe attack during the Great Depression years of 1930s at the hands of J. M. Keynes. He rejected the notion of full employment and instead suggested full employment as a special case and not a general case. Full employment is a temporary phenomenon, an astrological coincidence! He claimed his theory to be 'general', i.e., applicable at any point of time. That is why he christened his epoch-making book: The General Theory of Employment, Interest and Money (1936). Thus, Keynes' theory is "general". In this book, he not only criticized the classical macroeconomics, but also



presented a 'new' theory of income and employment. He is often described by economists as a revolutionary one in the sense that it was Keynes who salvaged the capitalist economy from destruction in the 1930s. Critics, however, label him as a 'conservative revolutionary'. Keynes' theory of employment is a demand-deficient theory. This means that Keynes visualized employment/unemploy-ment from the demand side of the model. His theory is thus known as demand-oriented approach. According to Keynes, the volume of employment in a country depends on the level of effective demand of the people for goods and services. Unemployment is attributed to the deficiency of effective demand. It is to be kept in mind that Keynes' theory is a short run theory when population, labour force, technology, etc., do not change. Once Keynes remarked that since "in the long run we are all dead", it is of no use to present a long run theory. In view of this, one can argue that the volume of employment depends on the level of national income/output.

The higher or lower the level of national output, the higher or lower is the volume of employment. Thus, Keynesian theory of employment determination is also the theory of income determination. In other words, Keynes' theory of employment is based on the principle of effective demand. In other words, the level of employment in a capitalist economy depends on the level of effective demand. Thus, unemployment is attributed to the deficiency of effective demand and to cure it requires the increasing of the level of effective demand. By 'effective' demand, Keynes meant the total demand for goods and services in an economy at various levels of employment. Total demand for goods and services by the people is the sum total of all demand meant for consumption and investment. In other words, the sum of consumption expenditures and investment expenditures constitute effective demand in a two-sector economy. In order to meet such demand, people are employed to produce all kinds of goods, both consumption goods and investment goods. However, to complete our discussion on effective demand we need another component of effective demand the component of government expenditure. Thus, effective demand may be defined as the total of all expenditures, i.e., C + I + G

Where, C, I and G stand for consumption, investment, and government expenditures. Here we ignore government expenditure as a component of effective demand. According to Keynes, the level of employment is determined by effective demand which, in turn, is determined by aggregate demand function or aggregate demand price and aggregate supply function or aggregate supply price. According to Keynes, The level of employment in an economy is determined at that point where the aggregate supply price equals the aggregate demand price. In other words, the intersection of the aggregate supply function with the aggregate demand function determines the volume of income and employment in an economy. It is thus clear that so long as expected sales receipts of the entrepreneur (i.e., aggregate demand schedule) exceed costs (i.e., aggregate supply schedule), the level of employment should be increasing and the process will continue until expected receipts equal costs or aggregate demand curve intersects aggregate supply curve.

In Keynes' theory, unemployment is due to the deficiency of effective demand. Only by stimulating effective demand can a higher level of employment be achieved. However, Keynes goes on arguing that equilibrium level of employment will not necessarily be at full employment. A capitalist economy will always experience underemployment equilibrium—an equilibrium situation less than full employment. Full employment, according to Keynes, can never be achieved. In Keynes' scheme of things, both consumption and investment cannot be raised enough to employ more work force. Therefore, he recommends government to come forward and take appropriate action to cure unemployment problem. This means that aggregate demand is now the sum total of all consumption, investment and government expenditures. It is because of the multiplier effect of both private investment expenditure and government expenditure that there will be larger income, output and employment.

But, equilibrium in the economy will be established at less than full employment situation because of:

(i) Wage rigidity

(ii) Interest inelasticity of investment



(iii) Liquidity trap

# The Classical Theory of Employment

In putting forward his 'General Theory' in 1936, Keynes referred to the ideas of the 'Classical' economists, i.e. those economists from Adam Smith (whose Wealth of Nations was published in 1776) down to A.C. Pigou (a Cambridge economist who died in 1959) who believed that market forces, operating through the competitive price system, could be relied upon to eliminate unemployment. The classical theory of employment was based on the assumption of full employment where full employment was a normal situation and any deviation from this was regarded as an abnormal situation. This was based on Say's Law of Market. According to this, supply creates its own demand and the problem of overproduction and unemployment does not arise. Thus there is always full employment in the economy. If there is overproduction and unemployment, the automatic forces of demand and supply in the market will bring back the full employment level. In the classical theory, the determination of output and employment takes place in labour, goods and money markets of the economy, as shown in Fig. 6. The forces of demand and supply in these markets will ultimately bring full employment in the economy.



In the classical analysis, output and employment in the economy are determined by the aggregate production function, demand for labour

and supply of labour. Given the stock of capital, technical knowledge and other factors, there is a precise relation between total output and employment (number of workers). This is expressed as Q = f(K, T, N). In other words, total output  $(\Omega)$  is a function (f) of capital stock (K), technical knowledge T, and number of workers (TV). Given K and T, total output (Q) is an increasing function of the number of workers (N): Q=f(N) as shown in Panel (B). At point E, ONF workers produce OQ output. But beyond point E, as more workers are employed, diminishing marginal returns start. Labour Market Equilibrium: In the labour market, the demand for and supply of labour determine output and employment in the economy. The demand for labour depends on total output. As production increases, the demand for labour also increases. The demand for labour, in turn, depends on the marginal productivity (MP) of labour which declines as more workers are employed. The supply of labour depends on the wage rate, SL = f(W/P), and is an increasing function of the wage rate. The demand for labour also depends on the wage rate, DL =f (W/P), and is a decreasing function of the wage rate. Thus both the demand for and supply of labour are the functions of real wage rate (W/P). The intersection point E of DL and SL curves at W/P wage rate in Panel (C) of the figure determines the full employment level ONF.

Goods Market Equilibrium: In the classical analysis, the goods market is in equilibrium when saving and investment are in equilibrium (S=1). This equality is brought about by the mechanism of interest rate at the full employment level of output so that the quantity of goods demanded is equal to the quantity of goods supplied. This is shown in Panel (A) of the figure where S=1 at point E when the interest rate is Or. Money Market Equilibrium: The money market is in equilibrium when the demand for money equals the supply of money. This is explained by the Quantity Theory of Money which states that the quantity of money is a function of the price level, P=f (MV). Changes in the general price level are proportional to the quantity of money. The equilibrium in the money market is shown by the equation MV = PT where MV is the supply of money and PT is the demand for money. The equilibrium of the money market explains the price level corresponding to the full employment



level of output which relates Panel (E) and Panel (B) with MQ line. The price level OP is determined by total output (Q) and the quantity of money (MV), as shown in Panel (E). Then the real wage corresponding with the money wage is determined by the (W/P) curve, as shown in Panel (D). When the money wage increases, the real wage also increases in the same proportion and there is no effect on the level of output and employment. It follows that the money wage should be reduced in order to attain the full employment level in the economy. Thus the classicists favoured a flexible price-wage policy to maintain full employment.

## EMPIRICAL LITERATURE

In terms of the relationship between FDI and employment growth, a number of empirical studies have been conducted. In Nigeria, Salami and Oyewale (2013) investigated the relationship between FDI and employment for the period 1990- 2012. The study employed the Ordinary Least Square (OLS) estimation technique. The variables used for this study includes total employment growth rate, export rate, import rate, exchange rate, inflation rate and FDI. The analysis found a significant link between FDI and employment in Nigeria. Abor and Harvey (2008) treated the effect of foreign direct investment on employment creation in Ghana. It provided an insight into the effect of FDI flow on employment from a host country perspective. A simultaneous panel regression model was used in estimating the effect FDI has on employment and wages. The result of this study indicated that FDI has a statistically significant and positive effect on employment levels in Ghana, but has an insignificant effect on wages. They opined that FDI can greatly augment domestic efforts by creating more jobs in the economy. The result demonstrated that FDI flows affect employment quantitatively but not necessarily qualitatively. The study identified other factors including; productivity, wages, sub-sector and location were not as significant in affecting wages in Ghana.

Etim, et al., (2014) focused on the determinants of foreign direct investment and their impact in Nigeria from 1975 between 2010 Ordinary Least Square (OLS), and co-integration Error Correction

Method (ECM) were employed and indicated that Market Size (GDP), openness, and exchange rate had significant impact on FDI inflow while political risk had unfavourable effect on FDI inflow. Ojong, et al., (2015) examined the factors that determine FDI inflow in Nigeria with the specific objectives of assessing the extent to which market capitalization, trade openness gross fixed capital formation and level of economic activities affect foreign direct investment inflow in Nigeria. Time series data were collected from the CBN statistical Bulletin and were analyzed using the ordinary least square multiple regression statistical technique, ADF and PP unit root. A correlation matrix was also used to check the relationship between all the variables and indicted that all the variables were strongly related except market capitalization, gross fixed capital formation and level of economic activities which had weak relation with FDI. The result of the OLS revealed that there is an inverse relationship between market capitalization and gross fixed capital formation on FDI inflow in Nigeria while high liberal trade policy discourages foreign direct investment in Nigeria. Finally, there exists a significant and positive effect of level of economic growth on FDI attraction in Nigeria. Mpanju (2012) analyzed the impact of FDI inflows on employment generation/creation in Tanzania for the period of 1990–2008. The study adopted a case study design with a quantitative research approach, representing an econometric analysis using ordinary least squares (OLS). The results indicated that a strong positive relationship exists between the variables, implying that FDI has a significant impact on the pattern of employment opportunities. In their work, Koko, Aminurraasyid and Tapiwa (2017) investigated the effect of political risk on FDI inflow to Nigeria using secondary data from 2000 to 2014 which was analyzed using simple linear regression. Empirical results found that political risk had a positive and significant association with FDI to Nigeria. Nwosa and Adeleke (2017) examined the determinants of Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI) volatility in Nigeria using annual data covering the periods 1986 to 2016 and analyzed using E-GARCH approach. The study observed that trade openness and world GDP were the significant determinants of FDI volatility, while domestic interest rate and stock market capitalization were significant determinants of FPI



volatility in Nigeria. Ebire, et al., (2018) investigated the major determinants of FDI in Nigeria. The result showed that exchange rate, GDP, first lag of GDP, military expenditure, first lag of military expenditure, political stability and financial development are the major determinants of FDI inflows to Nigeria. Pinn et al (2011) carried out an empirical analysis on employment and foreign direct investment in Malaysia for the period's 1970 to 2007. The augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests were carried out using the ARDL bounds testing approach using total employment for Malaysia and inward foreign direct investment. The study found that the relationship between FDI in Malaysia is not very substantial as a whole especially in the longrun. The reason owing to the fact that FDI increased mainly due to Mergers and Acquisition (M&A) of existing multinational companies (MNCs). A study was carried out by Fu and Balasubramanyam (2005) on the role of FDI in employment determination in China. This article found a strong linkage between FDI and employment as well as FDI and exports. The authors estimated that a 1 per cent increase in FDI raises employment growth by about 3 per cent and exports by almost 9 per cent and concluded that FDI tends to provide an outlet for surplus productive capacity and labour in the receiving country.

Other study done by Li– Wei and He (2006) on the impact of FDI on the employment in China found that FDI inflow promotes employment in both foreign investment enterprises (FIEs) and the country as a whole in the long run. When FDI grows up by 1 percent, the growth rate of employment in FIEs rises by 1.27 percent and the growth rate of total employment in China rises by 0.04 percent. Nunnenkamp and Bremont (2007) conducted an empirical research on whether FDI contributed to employment generation in Mexico. The analysis drew on highly disaggregated FDI and employment data covering almost 200 manufacturing industries. They estimated a dynamic labour demand function for blue and white collar workers including both FDI and its interaction with major industry characteristics. The study employed the GMM estimator suggested by Arellano and Bond to account for the short dimension of the study period, 1994 to 2006. The result indicated that

FDI has a significantly positive though quantitatively modest impact on manufacturing employment in Mexico. The study however found no evidence that FDI adds to white collar employment but found a positive effect on blue collar employment which over-time, diminished with increasing skill intensity of manufacturing industries. Jayaraman and Singn (2007) investigated the relationship between employment and foreign direct investment for Fiji through a multivariate modeling strategy by including gross domestic product (GDP) alongside foreign direct investment net inflows (FDI) and formal sector employment. Using the ARDL estimator, it revealed that foreign direct investment did have positive and statistically significant impact on Fiji's employment. Granger causality test revealed a unidirectional long run causality running from foreign direct investment to employment and a unidirectional causality running from foreign direct investment to GDP in the shortrun.

Jenkins (2006) in his study of the impact of FDI on employment in Vietnam found that direct employment generated as the effects of FDI is not very significant. This is because most of the labour force is still in the agricultural sector and other service sectors such as transport and retail trades where FDI has been minimal. In addition, the study also showed that the indirect effects of FDI on the employment in Vietnam have been minimal and depending on the balance between the crowding-in effects of FDI of creating new markets for local investors, and the crowding-out effects of FDI of foreign affiliates displacing the local competitors. Craiqwell (2006) examined the relationship between foreign direct investments on employment in English Dutch-speaking Caribbean countries. This study used the correlation estimates and Granger panel causality tests which revealed a positive causal relationship between FDI and employment for the countries. The empirical results, derived using panel data methods, suggested that an increase in FDI in the entire sample of Caribbean countries led to an approximate one-to-one increase in employment, an outcome supported, despite considerable gaps in the employment data, by an evaluation of the stylised facts on FDI flows over the past three decades. Craigwell (2006) noted further that the impact of



FDI on employment was greatest in the first year and was enhanced when trade policies, absorption and financial development were considered. He said that the latter result suggested that FDI flows work better in a stable and healthy macroeconomic environment.

Shaari, Huddsin and Halim (2012) examined the impact of foreign direct investment on the unemployment rate and economic growth in Malaysia. The findings indicated that FDI helped to reduce the unemployment rate and increased gross domestic products. Eshqhi, et al., (2016) investigated the impact of corporate tax rate on foreign direct investment inflows from Germany into five Central and Eastern European countries from 2000 to 2012. The study employed simple least square analysis and it was found that corporate tax rate had a significant and negative impact on FDI inflows in Central and Eastern European countries. Chakraborty and Nunnenkamp (2008) assessed the proposition that the FDI boom recorded in post-reform India is widely believed to promote economic growth. The study used the industryspecific FDI and output data to Granger causality tests within a panel cointegration framework. The result showed that growth effects of FDI vary extensively across sectors. Although there is no causal relationship in the primary sector and only transitory effects of FDI on output in the services sector, FDI stocks and output were found to be mutually reinforced in the manufacturing sector. In the services sector however, FDI appeared to have caused rapid growth in the manufacturing sector through crosssector spillovers and externalities. FDI inflows had a significant positive effect on the average growth rate of per capita income for a sample of 78 developing and 23 developed countries as found by Blomstrom, Lipsey and Zegan (1994). However, when the sample of developing countries was split between two groups based on level of per capita income, the effect of FDI on growth of lower income developing countries was not statistically significant although still with a positive sign. They argue that least developed countries learn very little from Multinational Enterprises (MNEs) because domestic enterprises are too far behind in their technological levels to be either imitators of or, suppliers to MNEs.

In this regard, another study was conducted by Borensztein, De Gregorio and Lee (1998). They included 69 developing countries in their sample. The study found that the effect of FDI on host country growth is dependent on stock of human capital. They infer from it that flow of advanced technology brought along by FDI can increase the growth rate only by interacting with a country's absorptive capability. They also find FDI to be stimulating total fixed investment more than proportionately. In other words, FDI crowds-in domestic investment. However, the results are not robust across specifications. Ayadi (2009) explored the links between FDI and economic growth in Nigeria. He applied the Rho's rank correlation and causality test. The study concluded that the link between FDI and economic growth in Nigeria is weak but found that FDI is related to export growth and found that human capacity building is found to be related to FDI inflows.

Krstevska and Petrovska (2012) researched on the economic impacts of foreign direct investments on Macedonian economy. Using panel regression technique, the result of the analysis revealed that FDI inflows were an important factor for GDP growth and export performances of the Macedonian economy. On the other hand, the FDI impact over employment was negative due to the low level of green field investments and non attractiveness of the labour intensive industry for the foreign investors in Macedonia. In a survey of African countries, Ugochukwu, Okorie and Unoh (2013) investigated the empirical relationship between foreign direct investment and economic growth in Nigeria. The work covered a period of 1981 to 2009. A linear regression model was formulated and the Granger causality Tests was employed to carry out this research. The empirical results showed that there was a positive relationship between economic growth (GDP) and FDI though it was insignificant. They said that the insignificant relationship could be as a result of insufficient FDI fund invested into the Nigerian economy which has not been able to significantly impact on the economic growth. The result of the study portrayed that domestic investment was responsible for the growth witnessed in Nigeria's economy over the period under review. And they further concluded that domestic investment is a major



factor that contributes to the growth of the Nigerian economy. Onakoye (2012) investigated the impact of foreign direct investment on economic growth in Nigeria. The study developed a structural macroeconomic model consisting of four blocks made up of supply, private demand, government and external sectors. The model deployed 18 simultaneous equations and 100 variables to capture the required proxies. The research three-stage least squares (3SLS) technique adopted а and macroeconometrics model of simultaneous equations to capture the disaggregated impact of FDI on the different sectors of the economy and the inter-linkages amongst the sectors in order to give better insight into the variations inherent therein. The finding shows that FDI has a significant impact on output of the economy but that the growth effects of FDI differ across sectors. Also, Olusanya (2013), focused on the impact of foreign direct investment inflow on economic growth in a pre and post deregulated Nigerian economy. A granger causality test was used to estimate this within 1970-2010. The findings of this study showed that there is causality relationship between economic growth (GDP) and foreign direct investment inflow (FDI) implying that economic growth drive foreign direct investment inflow into the country.

Dupasquier and Osakwe (2006) identified poor corporate governance, unstable political and economic policies, weak infrastructure, unwelcoming regulatory environments and global competition for FDI flows as impediments standing in the way of attracting significant FDI flows. This corroborates the findings of Jerome and Ogunkola (2004) which assessed the magnitude, direction and prospect of FDI in Nigeria. The authors ascribed the low level of FDI in Nigeria to deficiency in the country's legal framework concerning corporate law, bankruptcy and labour law, in addition to institutional uncertainty. The contributions of Ekpo (1995) which made use of time series data is that the variability of FDI into Nigeria can be explained by the political regime, real income per capita, rate of inflation, world interest rate, credit rating and debt service. In his study of the determinants of FDI in Nigeria, Anyanwu (2011) identified change in domestic investment, change in domestic output or market size, indigenization policy and change in openness of the

economy as the major determinants of the FDI. He further noted that the abrogation of the indigenization policy in 1995 encouraged FDI inflow into Nigerian and that effort must be made to raise the nation's economic growth so as to be able to attract more FDI. Oyatoye, Arogundade, Adebisi, and Oluwakayode (2011) reviewed the effect and relationship between FDI and economic growth in Nigeria for 20 years (1987 – 2006) using Ordinary Least Square regression analysis and report a positive relationship between the two variables. The result further showed that a N1 increase in the value of FDI will lead to N104.749 increase in GDP. Antwi, Mills, Mills and Zhao (2013) treats the relationship between FDI and economic growth in Ghana. The analysis shows that there is a positive relationship between FDI and economic growth in Ghana and that the relationship is significant.

## METHODOLOGY

In this research work, the technique used in this analysis is the differenced Ordinary Least Square (OLS) method after it was discovered that there was no cointegration in the model. It is commonly used in estimating linear relationships in econometric methods because of its Best Linear Unbiased Estimator (BLUE) properties. In specifying the model for this study, the estimation equation includes Foreign Direct Investment (FDI), Inflation (INF) and Gross Domestic Product (GDP), as the independent variables, while Employment is the explained variable, based on empirical literatures, Kareem (2010) and Salami & Oyewale (2013).

The model is presented below;

EMPL= f(INF, FDI,GDP)

 $\mathsf{EMPL} = \beta_{\circ} + \beta_{1}\mathsf{GDP} + \beta_{2}\mathsf{INF} + \beta_{3}\mathsf{FDI} + \mathsf{V}$ 

Where;

EMPL = Total Employment

GDP = Gross domestic product (\$'billions )

INF = Inflation (%)

FDI = Foreign direct investment net inflows (\$'billions )

 $\beta_o$  = Intercept

 $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  = Coefficients of the explanatory variables

*U*= is the error term capturing other variables that are not included I'm the model.



# RESULTS PRE-DIAGNOSTIC TESTS Unit Root Test

The Augmented-Dickey Fuller (ADF) unit root test was applied. This is to authenticate the level of stationarity of the data. The results are presented in table 2.

Variable	ADF Value	5%critical value Stationarity level		
LOGEMP	-3.92	-3.06	1(0)	
logfdi	-2.91	-1.95	1(0)	
LOGGDP	-3.52	-1.96	1(1)	
loginf	-4.21	-1.96	1(1)	

### Table 1: Augmented Dickey-Fuller (ADF) Unit Root Test results

Source: Eviews 10 Output

The table above shows the results of the unit root test for the variables used in the study. The results from the stationarity test show that while Gross Domestic Products and inflation were stationary at first difference, Employment and Foreign Direct were stationary at levels.

# Co-integration Test

ARDL bounds testing approach is a co-integration test method developed by Pesaran, Shin and Smith (2001) to test for the presence of the long run relationship between the variables. The test was conducted and the results are presented in table 6.

The decision rule states that:

- 1. If the calculated F statistic is greater than the critical value for the upper bound I(I), then there is cointegration.
- 2. If the calculated F statistic falls below the critical value for the lower bound I(O), then there is no cointegration.
- 3. If the calculated F statistic falls between the critical values for the lower and upper bounds, then the test is inconclusive.

The result has revealed that there was no cointegration in the model. This is because the obtained F statistics value 3.37 was less than the critical value of the upper bound at 5% level of significance (4.30).

## Co-integration Test results

Test Statistic	Value	k
F-Statistic	3.07	3
Critical value Bounds.		
Significance Level	I(O)Bound	I(1)Bound
10%	2.67	3.58
5%	3.27	4.30
1%	4.61	5.96_

Source: Authors computation using Eviews 10

### Table 3: Differenced OLS Results

Variable	(	Coefficiet	Std. Error	t-Statistic	Prob.
LOGFDI	O.18	O.14	1.32	0.00	
loginf	-0.	08 C	.05 -	-0.26	0.07
LOGGDP	О.	15 (	0.00	1.36	0.01
С		50.57 0.23	3 2.4	1 0.0	)2

Source: Authors computation using Eviews 10

From table 3 above, it can be seen that the intercept or constant term was obtained to be 50.57. This implies that Employment will have this value even if the independent variables (Foreign Direct Investment, Inflation and Gross Domestic Product assume the values of zero. The coefficient of the log of Foreign Direct Investment (0.18) was positive and statistically insignificant at 5% to Employment in Nigeria. This means that Foreign Direct Investment contributes positively to Employment and that 1 percent increase in Foreign Direct Investment will lead to an 18 percentage increase in Employment. The coefficient of the log of Inflation (-0.08) was negative and statistically significant at 5% to Employment in Nigeria. This means that Inflation contributes negatively to employment and that 1 percent increase in inflation will lead to an 8 percentage decrease in Employment. The coefficient of the log of Gross Domestic Product (0.15) was positive and statistically insignificant at 5% to employment in Nigeria. This means that Gross Domestic Product contributes positively to employment and that 15 percent increase in Gross Domestic Product will lead to a 6 percentage increase in



Employment. The R2 obtained was 0.68 which shows the model has a good fit. It also implies that 56% of the variations in the dependent variable (Employment rate) are explained by the independent variables (Foreign Direct Investment (FDI), Inflation (INF) and Gross Domestic Product (GDP)). While 32% of the variations in the model are explained by other variables that contribute to economic growth but were not captured in this model.

## POST ESTIMATION DIAGNISTIC TEST RESULTS Autocorrelation Test

From table 4 below, it can be seen that the P-value of the Breusch-Godfrey serial correlation LM test is 0.14 which is greater than the level of significance of 0.05. This implies that there is no autocorrelation in the model

## Table 4: Autocorrelation Test results

Breusch-Godfrey Serial Correlation LM

Test:			
F-statistic	3.747018	Prob. F(2,14)	0.1497
Obs*R-squared	6.973131	Prob. Chi-Square(2)	0.0306

Source: Authors computation using Eviews 10

# Test for Heteroscedasticity

From table 5 below, it can be seen that the P-value of the Breusch-Pagan-Godfrey test 0.24 is greater than 0.05. This implies that there is no Heteroskedasticity in the model.

## Table 5: Heteroscedasticity Test Results

Heteroskedasticity Test: Breusch-Pagan

<u>Godfrey</u>			
F-statistic	1.517166	Prob. F(3,16)	0.2483
Obs*R-squared	4.429359	Prob. Chi-Square(3)	0.2187
Scaled explained SS	2.748067	Prob. Chi-Square(3)	0.4321

Source: Authors computation using Eviews 10

# MULTICOLINEARITY TEST

**Decision rule:** When the uncentered VIF is greater than the ones beside it, then there is the presence of multicolinearity.

Variable	Coefficient Variance	Uncenter VIF	ed	Centered VIF	
D(FDI)	0.021924	1.014851	1.013091		
D(GDP)	1.93E-05	1.300505	1.174132		
D(INF)	0.002783	1.193716	1.188097		
С	0.057026	1.153155	NA		

# Table 6: Multicolinearity Test results

The table above shows that there is some level of Multicolinearity in the model because the uncentered Variance Inflation Factors (VIF) is averagely greater than the ones beside it. The results showed that Foreign Direct Investment contributes positively to Employment generation in Nigeria. The results are consistent with the work of Salami and Oyewale (2013) who investigated the relationship between FDI and employment for the period 1990-2012. The study employed the Ordinary Least Square (OLS) estimation technique. The variables used for the study includes total employment growth rate, export rate, import rate, exchange rate, inflation rate and FDI. The analysis found a significant link between FDI and employment in Nigeria. Other works the results are consistent with include Abor and Harvey (2008) who discovered that FDI has a statistically significant and positive effect on employment levels in Ghana, but has an insignificant effect on wages. Others works the results are also consistent with include Mpanju (2012) in Tanzaniah, Pinn et al (2011) in Malaysia, Fu and Balasubramanyam (2005) in China, Nunnenkamp and Bremont (2007) in Mexico, Craigwell (2006) in English Dutchspeaking Caribbean countries who all discovered a positive relationship between FDI and employment generation. This implies that FDI inflows lead to employment generation in Nigeria. However, the results were inconsistent with the works of Jenkins (2006) in Vietnam and Ayadi



(2009) in Nigeria found that direct employment generated as the effects of FDI is not very significant.

# CONCLUSION AND RECOMMENDATIONS

This study's findings reveal that Foreign Direct Investment contributes positively to Employment significantly. Therefore the study concludes that a considerable level growth has been achieved as a result of the contribution of Foreign Direct Investment in Nigeria.

The following recommendations are made based on the findings of the study.

- 1. Government should intensify efforts in fighting insecurity in order to create a safe environment for foreign investors to make investments in Nigeria.
- 2. There is the need for the government to come up with policies that will make the macroeconomic environment more conducive and competitive. This will create an enabling environment for foreigners to continue investing and increase their participation in the Nigerian economy.
- 3. Government should also intensify efforts in fighting corruption in order to make foreign investors to feel comfortable to make investments in Nigeria.

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### APPENDIX LOG OF FDI STATIONARY AT LEVELS

Null Hypothesis: FDI has a unit root Exogenous: Constant Lag Length: 4 (Automatic – based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-F	uller test statistic	-3.926459	0.0099
Test critical values:	1% level 5% level 10% level	-3.920350 -3.065585 -2.673459	

\*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 16

Augmented Dickey-Fuller Test Equation Dependent Variable: D(FDI) Method: Least Squares Date: 01/01/80 Time: 02:27 Sample (adjusted): 2005 2020 Included observations: 16 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI(-1)	-0.649756	0.165481	-3.926459	0.0028
D(FDI(-2))	0.354278	0.197716	1.791852	0.1034
D(FDI(-3)) D(FDI(-4))	0.841020 0.591683	0.205648 0.246626	4.089601 2.399113	0.0022 0.0374
С	3.105122	0.846778	3.666984	0.0043
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.702320 0.553481 1.160743 13.47325 -21.32796 4.718634 0.017899	Mean deper S.D. depend Akaike info Schwarz crit Hannan-Qu Durbin-Wa	ndent var ent var criterion erion uinn criter. tson stat	0.032875 1.737065 3.415995 3.705716 3.430831 2.414823

### LOG OF EMP STATIONARY AT LEVELS

Null Hypothesis: EMP has a unit root



Exogenous: None Lag Length: O (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-F	uller test statistic	-2.972309	0.0486
Test critical values:	1% level	-2.685718	
5% level		-1.959071	
	10% level	-1.607456	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation Dependent Variable: D(EMP) Method: Least Squares Date: 01/01/80 Time: 02:29 Sample (adjusted): 2001 2020 Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EMP(-1)	-0.008193	0.004154	-1.972309	0.0633
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood Durbin-Watson stat	-0.006155 -0.006155 1.027792 20.07077 -28.41409 1.317557	Mean deper S.D. depend Akaike info Schwarz crit Hannan-Qu	ndent var ent var criterion erion uinn criter.	-0.460000 1.024644 2.941409 2.991196 2.951128

### LOG OF GDP STATIONARY AT FIRST DIFFERENCE

Null Hypothesis: D(GDP) has a unit root Exogenous: None Lag Length: O (Automatic – based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-F	uller test statistic	-3.520441	0.0014
Test critical values:	1% level 5% level 10% level	-2.692358 -1.960171 -1.607051	

\*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations

and may not be accurate for a sample size of 19

Augmented Dickey-Fuller Test Equation Dependent Variable: D(GDP,2) Method: Least Squares Date: 01/01/80 Time: 02:31 Sample (adjusted): 2002 2020 Included observations: 19 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	-0.818007	0.232359	-3.520441	0.0024
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood Durbin-Watson stat	0.407613 0.407613 59.84085 64456.69 -104.1883 1.998035	Mean deper S.D. depend Akaike info Schwarz crit Hannan-Qu	ndent var ent var criterion erion uinn criter.	-1.225263 77.74903 11.07245 11.12216 11.08086

### LOG OF INF STATIONARY AT FIRST DIFERENCE

Null Hypothesis: D(INF) has a unit root Exogenous: None Lag Length: 1 (Automatic – based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-F	Fuller test statistic	-4.213124	0.0003
Test critical values:	1% level	-2.699769	
	5% level	-1.961409	
	10% level	-1.606610	

\*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 18

Augmented Dickey-Fuller Test Equation Dependent Variable: D(INF,2) Method: Least Squares Date: 01/01/80 Time: 02:33 Sample (adjusted): 2003 2020 Included observations: 18 after adjustments



Variable	Coefficient	Std. Error t-Statistic	Prob.
D(INF(-1)) D(INF(-1),2)	-1.387635 0.255919	0.329360 -4.213124 0.186397 1.372978	0.0007 0.1887
R-squared Adjusted R-	0.601762	Mean dependent var	O.435556
squared	0.576872	S.D. dependent var	5.690515
S.E. of regression	3.701581	Akaike info criterion	5.559837
Sum squared resid	219.2273	Schwarz criterion	5.658767
Log likelihood	-48.03853	Hannan-Quinn criter.	5.573478
Durbin-Watson			
stat	2.039434		

### **BOUNDS TEST**

ARDL Long Run Form and Bounds Test Dependent Variable: D(EMP) Selected Model: ARDL(1, 0, 1, 0) Case 2: Restricted Constant and No Trend Date: 01/01/80 Time: 02:37 Sample: 2000 2020 Included observations: 20

	Conditional Error	Correction F	Regression	
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C EMP(-1)* FDI**	25.56747 -0.431399 0.307763	7.944955 0.135473 0.132548	3.218076 -3.184397 2.321901 7.762402	0.0062 0.0066 0.0358
INF** D(GDP)	-0.009889 -0.037056 0.002210	0.066986 0.004052	-5.782402 -0.553194 0.545442	0.5889 0.5940

\* p-value incompatible with t-Bounds distribution.

\*\* Variable interpreted as Z = Z(-1) + D(Z).

Levels Equation Case 2: Restricted Constant and No Trend					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
FDI	0.713407	0.174831	4.080546	0.0011	

	An Assessme	ent of Foreign [	irect Investment on Employment Generatior Nigeria (2000–202	1 in 20)
GDP	-0.022924	0.003669	-6.248016 0.0000	
INF	-0.085897	0.153709	-0.558830 0.5851	
С	59.26640	2.867495	20.66836 0.0000	
EC = EMP - (0.7134*	FDI -0.0229*G	DP -0.0859	*INF + 59.2664 )	

F-Bounds Test		Null Hypot	hesis: No levels rela	ntionship
Test Statistic	Value	Signif.	1(0)	I(1)
			Asymptotic: n=1000	
F-statistic	3.073801	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	20		Finite Sample: n=30	
		10% 5% 1%	2.676 3.272 4.614	3.586 4.306 5.966

### DIFFERENCED OLS RESULTS

Dependent Variable: D(EMP) Method: Least Squares Date: 01/01/80 Time: 02:40 Sample (adjusted): 2001 2020 Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI)	0.185545	0.148069	1.320632	0.0052
D(GDP)	0.150013	0.004392	1.369001	0.0199
D(INF)	-0.084020	0.052750	-0.265774	0.0738
С	50.57613	0.238802	2.412519	0.0282
R-squared	0.687700	Mean depen	dent var	-0.460000
Adjusted R-squared	0.576956	S.D. depende	ent var	1.024644
S.E. of regression	0.994508	Akaike info	criterion	3.003720
Sum squared resid	15.82475	Schwarz crite	erion	3.202866
Log likelihood	-26.03720	Hannan-Qu	inn criter.	3.042595
F-statistic	1.389639	Durbin-Wat	son stat	1.700781



Prob(F-statistic) 0.282090

#### AUTOCORELATION TEST

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.747018	Prob. F(2,14)	0.4907
Obs*R-squared	6.973131	Prob. Chi-Square(2)	0.0306

Test Equation: Dependent Variable: RESID Method: Least Squares Date: 01/01/80 Time: 02:46 Sample: 2001 2020 Included observations: 20 Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI)	-0.027358	0.142744	-0.191658	0.8508
D(GDP)	0.000757	0.003801	0.199165	0.8450
D(INF)	0.003770	0.045573	0.082718	0.9352
C	-0.049259	0.207363	-0.237549	0.8157
RESID(-1)	0.771034	0.295062	2.613124	0.0204
RESID(-2)	-0.584137	0.304430	-1.918792	0.0756
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.348657 0.116034 0.858044 10.30735 -21.75002 1.498807 0.252296	Mean deper S.D. depend Akaike info Schwarz crit Hannan-Qu Durbin-Wa	ndent var ent var criterion erion uinn criter. tson stat	4.44E-17 0.912623 2.775002 3.073721 2.833315 1.803002

#### HETEROSKEDASTICITY TEST

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.517166	Prob. F(3,16)	0.2483
Obs*R-squared	4.429359	Prob. Chi-Square(3)	0.2187
Scaled explained SS	2.748067	Prob. Chi-Square(3)	0.4321

Test Equation:

Dependent Variable: RESID ^ 2 Method: Least Squares Date: 01/01/80 Time: 02:47 Sample: 2001 2020 Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C D(FDI) D(GDP) D(INF)	0.830533 -0.338737 -0.000817 -0.010295	0.260974 0.161817 0.004800 0.057648	3.182435 -2.093338 -0.170169 -0.178585	0.0058 0.0526 0.8670 0.8605
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.221468 0.075493 1.086846 18.89976 -27.81294 1.517166 0.248286	Mean deper S.D. depend Akaike info Schwarz crit Hannan-Qu Durbin-Wa	ndent var ent var criterion erion iinn criter. tson stat	0.791237 1.130351 3.181294 3.380441 3.220170 1.206110

### MULTICOLINEARITY TEST

Variance Inflation Factors Date: 01/01/80 Time: 02:47 Sample: 2000 2020 Included observations: 20

Variable	Coefficient	Uncentered	Centered
	Variance	VIF	VIF
D(FDI)	0.021924	1.014851	1.013091
D(GDP)	1.93E-05	1.300505	1.174132
D(INF)	0.002783	1.193716	1.188097
C	0.057026	1.153155	NA