Foreign Direct Investment as a Panacea for Economic Development in Nigeria

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Abstract: Nigeria in her effort to accelerate growth has always encouraged Foreign Direct Investment FDI inflows through some of the investment incentive packages which are aimed at bridging the domestic resources gap via FDI. Between 1986 and 1989 and in 1995, the rate of FDI grew more rapidly than world trade in goods. The need to increase domestic output through foreign capital have been the strong interest of every developing country especially Nigeria as domestic savings are often insufficient to finance their investment needs as a result of capital shortage which affects both public and private investment. This research work will examine the significant impact of foreign direct investment (FDI) on development in Nigeria and empirically ascertain the magnitude and causal relationship between economic growth and FDI. Econometric method of two stages least squares (2SLS) estimation technique was employed in order to ascertain the true and existing relationship between the specified variables in the econometric models. From the co-integration test carried out, it was found that there exist a positive long-run equilibrium relationship between FDI and economic growth in Nigeria. The following recommendations were made that government should increase its efforts on attracting FDI inflows in order to supplement domestic resources and ensure macroeconomic stability through the use of appropriate trade policies, fiscal and monetary policies.

Key words: RGDP · FDI · Interest rate · Real exchange rate and trade openness

INTRODUCTION

Foreign Direct Investment (FDI) is generally considered, by many international institutions, politicians and economists as a factor which enhances lost country economic growth, as well as the solution to the economic problems of developing countries [1]. Usually FDI is defined as an investment involving the transfer of a vastest, including financial capital, advanced technological know- how, better management practices, etc.

It is also known as the direct investment into production or business in a country, an investment made by a company or entity based in one country, into a company or entity based in another country. Foreign direct investment differs substantially from indirect investments such as portfolio flows, where in overseas institutions invest in equities listed on a nation's stock exchange, open economies with skilled workforces and good growth prospects tend to attract larger amounts of foreign direct investment than closed and highly regulated economies. This investment is carried out by an entity (a firm or an individual's) in

foreign firms, involving an important equity stake in, or effective management control [2, 3]. Since capital formation and technological improvement are the motor of economic growth, FDI is expected to promote host countries economic growth [4]. In 2002, OECD reports that countries with weaker economies consider FDI as the only source of growth and economic modernization. For this reason, many governments, particularly in developing countries, give special treatment to foreign capital [5 and 6]. It is common that countries have public agencies whose aim is to attract foreign investment using public funds, which shows that governments are willing to bear some cost to attract such investment [7- 9].

Also, investigation, explains FDI as the investing company may make its overseas investment in a number of ways either by setting up a subsidiary or associate company in the foreign country, by acquiring shares of an overseas company, or through a merger or joint venture.

The accepted threshold for a foreign direct investment relationship, as defined by the OECD, is 10% that is the foreign investor must own at least 10% or more of the voting stock or ordinary shares of the invested company.

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An example of foreign direct investment would be an American company taking a majority stake in a company in China- Another example would be a Canadian company setting up a joint venture to develop a mineral deposit. Despite the fact that the impact of FDI on economic growth has been widely studied, there are still questions concerning the real effects of FDI and also concerning the necessary conditions and the channels through which FDI leads to host country's economic growth. The purpose of a direct investment is to gain enough control of a company to exercise control over future decisions. This can be accomplished by gaining a majority interest or a significant minority interest. Direct investment can involve management participation, joint-venture or the sharing of technology and skill.

Despite the fact that the impact of FDI on economic growth has been widely studied there are still questions concerning the real effects of FDI and also the necessary conditions and the channels through which FDI leads to host country's economic growth? Although, many studies have confirmed positive effect of FDI, while some authors stress that there is still no consensus in the degree of these effects [10]. Also Borensztein E *et al*. [11] and Edwards and Vegh [12] report that the main conclusion to be drawn from several studies is that results are ambiguous. Among the studies that have concluded that FDI does not cause economic growth are those of [7-10]. Others shared the widespread view that FDI generates economic growth [1, 3, 5, 6].

Statement of the Problem: One of the cardinal economic objectives of the developing countries, including Nigeria is to achieve high economic growth that will lead to rapid economic development and reduce poverty. From whatever theoretical angle that one may look at it, economic growth indicate the ability of an economy to increase its production of goods and services with stock of capital and other factors of production within the economy. It is therefore assumed that a high level of capital accumulation, with the right combination of other factors of production will bring about higher output growth. Economic growth is theoretically and empirically established to be dependent on capital accumulation or investment.

In recent periods, however, economic growth and development has become the contemporary issue though, both seems to be different aspects of the same coin. The controversy as to whether an economy may experience economic growth without experiencing any form of increase in investment or increase in investment

without economic growth has been traced to the classification or categorization of investment.

The foreign Direct Investment (FDI)'s major role in developing countries could be traced to have a positive effect on economic growth but not in all cases. In Nigeria, for instance, attempts to accelerate growth and development have always encouraged FDI inflow through the introduction of various incentives packages.

Research Questions: This work would attempt to provide answers to the following questions;

- To what extent is the impact of FDI on the output growth in Nigeria?
- What is the relationship between economic growth (GDP) and FDI?
- To what extent has government policies (trade variables) contributed in promoting FDI inflow in Nigeria?

Objectives of the Study: The study attempts to examine the impact of FDI on economic growth in Nigeria and the specific objectives include:

- To examine the significant impact of FDI on the output growth in Nigeria.
- To find out the causal relationship between economic growth (GDP) and FDI
- To identify some of the government policies which was employed in the promotion of FDI inflow and sustainable economic growth?

Statement of the Hypotheses: The following hypotheses were formulated for this work;

HO_1: FDI inflow has no significant contribution on economic growth (GDP)

HO_2: There is no causal relationship between FDI and economic growth.

HO_3: Government policies do not promote FDI inflow and sustainable economic growth.

Significance of the Study: It is hoped that the study will act as a starting point for policy debate in the area of foreign direct investment in our economy. On the whole, it is envisaged that the finding will be of the following significance;

- It will serve as a guide to policy makers and planners for future decisions concerning FDI

- It is equally hoped that the findings and recommendations of this study will be of immense benefit not only to government but also to other researchers
- The study will also help in identifying challenges which face foreign direct investment in the growth of Nigeria economy. This work would be of immense benefit to policy makers, students, institutions, bankers, multinationals and governments especially in the LDC's

Scope of the Study: The period under study covers the year's 1971 to 2012 data. The data was sourced from CBN statistical bulletin 2012. The method of data source for this study is time series regression using econometric regression approach.

Literature
Theoretical Review: Theoretically, foreign direct investment is expected to be influenced by the size of the product of such investments. Foreign direct investment is also expected to increase where there exist higher profit rates so as to follow the direction of marginal productivity of capital. The availability of relevant raw materials is also expected to catalyse the inflow of foreign direct investment while the existence of protectionist policies is also expected to attract foreign investment for locally produced goods.

According to Borensztein *et al*. [11], in his product cycle theory emphasized that a firm tends to become multinational at a certain stage in its growth. In the early stage of the product cycle, initial expansion into overseas markets is by means of exports. This is because countries that are at different stages of economic development, separated by a "technology gap" new markets are available to receive new products through the demonstration effect of richer countries. Once the product has evolved in a standard form and competing products have been developed, the firm may decide to go overseas for the lower cost locations and new markets. The inability of product cycle hypothesis to tell us why multinational enterprise select to use FDI rather than to license their technology to foreign firm led to the emergency of other theories. According to Thirwall [9], a firm will operate in foreign country if there is advantage which it enjoys. Such advantages include; access to patented and generally unavailable technology, team-specific management skills, plant economics of scale, special marketing skills, possession of a brand name etc.

The contribution of FDI to economic growth has been debated quite extensively in economic literature; the traditional argument follows that FDI inflow contributes to economic growth by increasing capital stock. Some literatures point to the role of FDI as a channel of international technology transfer. Theoretically, models of endogenous growth variables were combined with studies on the diffusion of technology in an attempt to emphasize the major role played by FDI in an economy. Dunning [3], while capital inflows can provide a strong expansionary impulse to the domestic economy, a reduction in capital inflows will typically generate an increase in domestic interest rates and consequently, a decline in asset rates. Kindleberger [7], pointed out, the work of Harrod Domar in this regard is very instructive. According to him, the ratio of saving to capital- output ratio (i.e. incremental capital-output ratio) determines economic growth.

According to the Neoclassical, the economic growth could equally be obtained through accumulation of factor of production, improvement in technology and their optimal allocation.

Imrohoroglu and Kumar [6] improved the Harrod-Dommar growth model by introducing money into the model through the effects of real disposable income on consumption and investment. In other words, a fall in the level of income spent on consumption, all other things held constant leads to increase in savings but the less developed countries (LDCs) are always presumed to have abundant labour and less capital. As a result of lack of capital as pointed out in Harrod-Domar growth model this is evidenced by a gap either in the level of savings or the national foreign exchange. This is hence, referred to as the Dual-Gap model. The need to bridge these gaps becomes crucial in the LDCs and these motivate the attraction of FDI to their economy.

Foreign Direct Investment and the Transfer of New Technologies: FDI can affect economic growth through the transfer of technology and know-how and this impact can be positive and/or negative. According to Kindleberger [7], FDI is a way to improve a country's economic performance and through the transmission effect more advanced are technologies introduced by multinationals. In fact, multinational firms are often regarded as the more technologically developed firms. As stated by Thirwall [9], this is explained by the fact that multinational firms are responsible for almost all the world's spending on research and development (R & D).

Also, Borensztein *et al.* [11] consider multinational as a major source of technology dispersion, due to their presence in various parts of the world. The growth rate of a country can be explained by the state of the technology it uses. In developing countries economic growth depends on the implementation of more advanced technology brought in by multinational [4]. The existence of new technologies introduced by multinationals leads to a reduction of R & D costs of firm that receive these technologies. In this way, these firms become more competitive [5]. Kindleberger [7] argue that the transfer of technology could achieve gains that could not be achieved through financial investment or the purchase of goods and services. FDI is considered by Dunning [3] and Hirchman [5] as a predominant way of increasing economic growth, since the transfer of technology and knowledge of multinationals improved local firm's productivity, which contributes to the growth of Gross Domestic Product (GDP). The technology transfers are made to the local suppliers of multinational firms on a voluntary basis, to improve the products they deliver to them [6]. There new technologies that are transferred in the form of training, technical assistance and other information provided in order to improve production quality and quantity of products that the multinational purchases [3]. The same study states that usually multinationals also provide support to their local suppliers in purchasing raw materials and intermediate products and even in the improvement of its facilities. However, in sectors of activity with rapid changes in technologies the main benefits brought by multinationals are the new products and new production processes [7]. Blomstrom and kokko [10], reports the link that multinationals established with local research entities, such as public institutes and universities, as a strong source of technology transfer.

The transfer of technology, however, can also bring negative effects. According to Hirchman [5] multinationals may have an adverse reaction to host country research and development in order to continue to hold a technological advantage compared to local firms. This author also notes that with the same aim multinationals only transfer inappropriate technologies. Kindleberger [7]and Thirwall [9] added that the host country can become dependent on technologies introduced by multinationals. This study indicates that there is a decline in local firm's interest in the production of new technologies. In these circumstances, the host country dependence on multinational technology will be perpetuated.

FDI and Integration into Global Economy: FDI contributes to the integration of the whole country in to the global economy particularity through the financial flows received from abroad. This relationship is also demonstrated by Kindleberger [7] who provides evidence of clear milk between the increase of FDI and the rapid integration into global trade. This integration generate economic growth which is increased as the country becomes more open [6]. Dunning [3] explain that the local firm's integration in the global market is also made by copying and attaining of knowledge helped by the multinationals. Multinationals have higher knowledge about internationalization because they have already gone through this process. Among the main competitive advantages held by multinationals are the expertise in marketing, establishment of network and creation and development of international lobbies. According to Gollin [13], the contact with multinationals networks is a very important factor, since there is a possibility that local firms learn from the operation of these networks or to imitate them.

Local firms can learn from multinationals in several ways. Edwards and Vegh [12] suggest that some local firms become multinationals suppliers or subcontractors, which leads local firms to export, since it is often the multinational brand. The contact with the multinational brand is also useful in order to use the same channels of this brand already established in the international market [12]. This will be the first experience in international markets which then serves to export products they developed, with it's own brand, to independent customers gained by local firms [13].

Another form of local firm's integration in the international market is through their inclusion in the multinationals strategy. This may lead firms to follow the multinationals to other markets or even replace other suppliers in multinationals subsidiaries in other countries [10]. The Blomstrom and kokko [10] study refers to the trade associations that multinationals are generally prominent members, as important sources to pass knowledge about the world markets, because they are a center for exchange of relevant experience. It also says that in response to request from multinationals, local authorities can create infrastructures (particularly transportation infrastructures) that will benefit international trade and local firms that also will use them successfully in their internationalization. This fact is evidenced by Kindleberger [7] and Jhingan [8] which indicate that the consequences of FDI facilitate the distribution of raw materials that exist in the host country. Additionally, Hirchman [5] assert that multinationals tend

to include their suppliers in international networks to which they belong, so that local firms are involved in global trade by establishing relations with other international entities.

The type of FDI is also a factor of integration into the global market when the investment is only made in assembly lines it clears the increase in imports of components, as well as the increase in exports of final product. Kindleberger [7] report that an increase in export will help local firms to improve their productivity through better use of their capacity and access to economics of scale. The further integration into the global economy provided by FDI can, however, have negative effects on the host country. Imrohoroglu and Kumar [6] suggest that FDI has a far greater impact for import than for exports, which influences negatively the balance of payments. This strong impact on imports is due to the fact that multinationals have great need of goods and raw material and most of the times these are not available, either in quantity or in a quantity, in the host country [10]. Another explanation is that the investment made may have as its main objective the supply of the local market and thus does not encourage exports [11]. Imrohoroglu and Kumar [6] note that FDI is the easiest source of spreading economic problems occurring in the worlds, particularly those that have occurred in the multinational countries of origin. Host countries become more open economies and more subject to changes in the global economy. But the negative aspects do not stop there.

In fact, the purpose of improving the balance of payments through the initial financial flows received is not always achieved in the long run. These effects can be mitigated of contradicted (in stages of low FDI inflow) through the usual repatriation of multinationals subsidiaries profits to their countries of origin or through the payment of licenses and royalties due to the use of technology held by headquarters [6]. Barba Navaretti and Venables [1] and Grossman and Helpman [4] show that in the long run the repatriation of profiles is higher than the positive impact of the initial investment. The negative impact caused by these outflows of capital, can be extended if these funds are obtained through credits obtained in the host country [6, 7].

Empirical Review: Our focus here should be on the overall impact of foreign direct investment (FDI) on economic growth with concentration on Nigerian economic growth. Some econometric analysis relating FDI to economic growth (as measured by GDP) of host countries which often conclude that the overall impact is positive but it depends on the magnitude of response of the determinants of FDI in the host country. Some of the test however shows contrary opinion about the impact of FDI-economic growth relationship based on some potential risk associated with FDI. From all indications, it is obvious that there is no consensus in the literature as regards FDI and economic growth particularly in the LDCs but some of the studies show that the impact of FDI to economic growth is little and could sometimes be negative depending on the state of that economy. For example, careful analysis [5, 6] shows that in the case of panel data, the preponderance of results indicate negative rather than positive spill overs.

Previous studies had also suggested that FDI inflow was a significant determinant of growth when interacting with educational attainment. For the period 1961-1985 [4, 6] found that FDI was significant for the upper half of the distribution of developing countries, but not for the lower half. Also in a study of 69 developing countries for the period 1970-1989 [5] found that FDI has a positive contribution to growth as long as the host country had a minimum threshold stock of human capital sufficient to absorb advanced technology. The reliance on FDI is rising heavily in developing countries due to its all round contribution to the economy. The important effect of FDI is its balance increasing labour standards and skills, technologically transfer and innovative ideas, infrastructural improvements and the general business climate.

Empirically a study by Kindleberger [7] and Thirwall [9], examined the impact of different types of capital flows in 18 developing countries and concludes that the most pronounced positive impact of FDI is on economic growth and domestic savings. They observed that it had less effect in some countries of Asia and Latin America, presumably because domestic savings play a larger role in these economies. With widely-ranged conflicting, empirical studies on how FDI in developing countries like Nigeria, affect the rate of aggregate growth, distribution of income and some non-economic indicators. Many of these studies indicate that FDI are adaptive social agents and therefore, the degree to which foreign investments help or impact developing countries will be heavily influenced by the policy sources of the host countries. In Nigeria, the need for foreign investment is greater but yet the potential capability is not widely and effectively utilized. This occur due to their desire to avoid dependence and domination of the foreign owned firms also due to lack of mutual understanding between the host countries and the foreign investors.

Jhingan [8], analysed the impact of investment on growth in Nigeria using data for 1970- 1994 period. He found that a 10 percent rise in the investment income ratio will trigger a 3 percent increase in per capita gross national product (GNP) in the short-run and long-run, a 10 per capita GNP is highly investment elastic in Nigeria.

Thirwall [9], demonstrated that FDI inflow could produce economic growth, technology transfer and higher level of investment but for only countries over a given threshold of human capital.

Borensztein [11], empirical studies of Nigeria and other developing countries, using micro-level panel data also discovered that changes in productivity level and growth rates of indigenous plants associated with the foreign presence was due to knowledge spill overs.

New growth theory, therefore, provides powerful support for the thesis that FDI could be a potent factor in promoting growth, the exploitation of this potential, however, requires a conductive economic climate. In the absence of such a climate, foreign direct investment (FDI) may be counterproductive; it may thwart rather than promote growth. It may serve to enhance the private rate of return to investment by foreign firms while exerting little impact on social rates of return in the recipient economy. Because of all the inefficiencies generated, policy is likely to provide a better economic climate which will be conducive in the efficient operations of these foreign firms and this invariably enhances productivity which promotes economic growth.

An empirical work carried out by Thirwall [9] using cross-sectional regression variables from 1970-1989, showed that a one percent point rise in FDI increase domestic investment in developing countries by between 0.5 and 1.3% points. A percentage point rise in ratio of FDI to GDP increased the rate of per capita income growth of the host country by 0.3 to 0.8%. [4, 6,11] found that FDI increases economic growth when the level of education in the host country is high (in terms of absorptive capacity).

A survey carried out on selected African countries including Nigeria, indicates that the recent growth in many parts of the world did not make a significant impact in the African economy. According to their observations in 2000, the investment volume of FDI declined and the share of the world investment in the continent fell below 1 percent. As a result, Africa nations particularly Nigeria has been striving to increase the volume and rate of FDI attraction to their economies. Also, the acceptance of general advice of product improvement through reforms

would tend to create a favourable investment climate hence and increase in the inflow of FDI into the country.

The investment report 2000, also confirmed that Nigeria was ranked the 6th among countries according to their attractiveness of FDI in 2000-2003 and in improving business environment from 2000-2003.

The empirical studies of the developing countries generally seek to establish a statistical relationship between the FDI inflows and a measure of output growth. According to UNCTAD study, there exists a marked regional difference with FDI tending to crowd investment in much of the developing economies; these differences are also felt at the sectorial levels. Estimate of the "crowding in" effects increased investment between 1.5 to 2.5 times the increase inflows of FDI. This increase according to the report occurs in addition to the positive impact of FDI on technological progress. Overall, developing countries, with average stock of capital, a one percent increase in the FDI-GDP ratio is associated with 0.4 -0.7 percent rise in long term GDP capita growth.

Cardosom and Falatto [2] concluded a similar research using theoretical and empirical methods, his findings indicates that invariably, FDI leads to economic growth; but the effect varies across regions over a long period of time. Domestic investment and openness to international trade were also found to complement economic growth.

An empirical analysis carried out by Grossman and Helpman [4] on the impact of foreign capital inflows on economic growth in Nigeria, from 1980 to 1998, indicated that foreign capital inflows (FCI) stimulated growth initially beyond a certain threshold; however, the impact on growth appeared negative.

The influence of political stability or conversely political risk on foreign direct investment (FDI) flows had been tested. Early studies of foreign investment decision process indicated that political instability was one of the major factors investors cited in explaining decisions for not investing in a particular country [7, 9]. From all indications, it could draw that both economic theory and empirical evidence suggest that FDI has a beneficial impact on developing host countries though recent researched work view some potential risks which could be reversed through financial transaction. Although the empirical importance of some of these sources of risk remains to be demonstrated, a wide range of empirical literature indicating the relevance of FDI on growth and development of the host economy abound.

MATERIALS AND METHODS

In this study, econometric method of two stages least squares (2SLS) estimation technique was employed in order to ascertain the true and existing relationship between the specified variables in the econometric models. Usually two stages least square (2SLS) is a method of extending regression to cover models which violate ordinary least squares (OLS) regression assumption of recursive specified models where disturbance term of the dependent variable is correlated with cause(s) of the independence variable(s). A (2SLS) stage in which new dependent or endogenous variables are created to substitute for the original ones and its regression is computed in OLS fashion.

Model Specification: Model Specification according to Koutsoyianis (1997) refers to the statement of maintained hypothesis which involves expressing the models in a mathematical form which is used in exploring empirically, an economic phenomenon. The models are specified thus,

First Stage 2SLS Model:

FDI= f (FDI (-1), INT, RER, OPN, DINVT, DPC, 2 (-1))
FDI= β_0FDI (-1) INT+β_2 RER + β OPN + DINVT+ β_{15}DPC
+β_{16} (M_2 (-1) + M_1 (1)

Second Stage 2SLS Model:

LOG (RGDP)=f (LOG(FDI), LOG (INT), LOG (RER), LOG (OPN), DPC)
LOG (RGDP)=β_0LOG(FDI)+β_1LOG (INT) +β_2LOG (RER) +β_3PG (OPN) +β4 DPC+M2   (2)

where FDI = Foreign Direct Investment inflow
RGDP= Real Gross Domestic product.

Causality Model: Following the stated objective, the casual relationship between FDI and economic growth, would be estimated using the models stated below in form of causality. We therefore, specify the Granger causality as

$$RGDP_t = \sum_{I=1}^{n} \alpha_1 FDI_{t-i} + \sum_{i=1}^{n} \beta_j RGDP_{t-j} + \mu_{1t} \qquad (1)$$

$$FDI_t = \sum_{I=1}^{m} \lambda_1 \mu_i FDI_{t-I} + \sum_{i=1}^{m} \delta_j RGDP_{t-j} + \mu_{2t} \qquad (2)$$

Where it assumed that the disturbances $\mu_1 t$ and $\mu_2 t$ are uncorrelated.

Equation (1) postulates that current RGDP is related to value of RGDP itself as well as FDI which behaves in like manner.

Data Transformation: Starting with the dependent variable, the Real Gross Domestic product (RGDP) which was transformed into a log form in order to reduce its large values. In the same manner, all the explanatory variables(s) such as foreign direct investment (FDI), interest Rate (INT), Real exchange rate (RER) and openness (OPN) were put in its log form except the domestic political climate (DPC) which represents a dummy expressing different political regimes, civilian and military regimes.

DATA: Two stages least square (2SLS) method of estimation technique was employed in our study in analyzing the regression results of our models. Based on these results, the estimation followed a statistical and econometric test using a computer software or econometric package known and referred to as E – view 3.1

Evaluation of Empirical Results: According to Dunning [3], the major rational for results evaluation is to ascertain whether the estimated parameters are theoretically meaningful and statistically satisfactory.

In the table above, using 2SLS estimation techniques assumption which says that if the R^2 of the first stage regression result is high i.e. in excess of 0.8 then we proceed to a second stage 2SLS. Since the R^2 of the first stage is high, then we analyzed our second stage of 2SLS which is the main model of analysis.

Economic Criteria: From the table above, it is observed that a unit increase in FDI will lead to 1% increase in RGDP. This implies that FDI is positively related to RGDP and therefore FDI has a significant impact on RGDP. FDI conforms to the economic theory or a prior. In terms of interest rate (INT), it is observed that a unit increase in INT will lead to a 2% tag decrease in RGDP. This implies that interest rate is negatively related to RGDP hence suggesting a negative relationship between RGDP and INT. Therefore; interest rate conforms to economic theory or a priori.

Table 1: First Stage 2SLS Model Results

Variable	Coefficient	Std.Error	T-Stat	Prob
C	-17.61839	14.72210	14.72210	0.2426
FDI (-1)	0.960328	0.093499	10.27095	0.0000
INT	0.397273	0.334053	1.189254	0.2455
RER	0.013788	0.027424	0.502756	0.6195
OPN	0.276400	0.195594	1.4131136	0.1699
DINVT	1.106929	0.086321	1.238739	0.2269
DPC	-2.228690	5.593843	-0.398418	0.6937
M2 (-1)	-2.99E-05	2.13e.05	-1.403759	0.127
M2 (-1)	-2.99E-05	2.13e.05	-1.4038	0.127
R²=0.976728	DW=2.483735			

Table 2: Second Stage 2SLS Model Results

Variables	Coefficient	Std. Error	T-stat	Prob
CONSTANT	11.80291	0.692303	17.04870	0.0000
LOG(FDI)	0.100901	0.020675	4.880373	0.0000
LOG(INT)	-0.211137	0.065442	-2391902	0.0050
LOG(RER)	-0.154378	0.064542	2.195469	0.00240
LOG(OPN)	0.180997	0.082441	-0.112652	0.0369
DPC	-0.004721	0.041905	-0112652	0.9111
R²=0.845115	F-stat=29.12165	R²=0.816432	DW=1.757689	

In Real Exchange Rate (RER), a unit increase in RER will lead to a 1% decrease in RGDP. This implies a negative relationship between RER and RGDP, but here RER does not conform to economic theory or a priori. This may be as a result of exchange rate policies in Nigeria.

From the table, it was observed that a unit increase in OPN will lead to a 1% increase in RGDP. This also suggests that openness (OPN) and RGDP are positively related hence OPN conforms to economic theory or a prior. Finally, it was observed from the table above that a unit increase in Domestic political climate (DPC) will lead to a non-digit decrease in RGDP. This implies that there exist a negative relationship between DPC and the RGDP and this situation occurred as a result of the nature of Nigeria political climate or environment which has been unstable over the years.

Statistically, from the above table/results, it is observed that all the explanatory variables except DPC are all statistically significant at 5% level of significance. In other worlds, we conclude that foreign direct investment FDI has positive influence on RGDP. Interest rate (INT) is statistically significant. This also implies a positive influence of INT on RGDP. Also real exchange rate statistically significant and this suggest an influence of RER on RGDP. Openness is also statistically significant. This means that there's a positive influence of RER on RGDP. From our table above, Domestic political climate is found not to be significant. This implies that DPC has no influence or contribution to RGDP.

Statistical Criteria: The statistical first order criteria test which the researcher employed in this study would be based specifically on the adjusted R^2, students.

R^2 adjusted: In our two stage least squares (2SLS) model, the R^2=0.83. This implies the variation of the independent variables explains the dependent variable by 83%. The implication here is that, the 2SLS model results in a good fit.

Students T-Test: The students'-distribution usually referred to as the t-test is used to test the significance criteria of each of the estimated parameters at 5% level of significance (i.e. $\grave{\alpha}$=0.05). We state the following hypothesis

$H_o: B_j=0$ (statistically insignificant)

Where B_j=the coefficient of the estimated parameters.

Decision Rule: The significance of each of these estimated parameters is measured if t-value is greater than +2 and less than -2 then it is significant but if it is less than +2 and greater than -2. it is non-significant. From the t-distribution table, for a two tailed test at 5% level of significance with 30 degree of freedom, the critical/tabulated t-value will be given thus, t 0.025(3) = ±1.697

Table 3: ????????

Variable	T-Statistic	T-Tabulated	Decision	Conclusion
Constant	17.04870	1.697	REJECT	SIGNIFICANT
LOG(FDI)	4.880373	1.697	REJECT	SIGNIFICANT
LOG(INT)	-3.055297	1.697	REJECT	SIGNIFICANT
LOG(RER)	-2.391902	1.697	REJECT	SIGNIFICANT
LOG(OPN)	2.195469	1.697	REJECT	SIGNIFICANT
DPC	-0.112652	1.697	ACCEPT	NON-SIGNIFICANT

CONCLUSION

All the variables are significant except the DPC which is not significant due to the nature of political instability in Nigeria.

The F-Test: The f-statistic test that the overall significance of the regression analysis of the model with $V_1 = k-1$ and $V_2 = n-k$ degrees of freedom. This test follow the hypothesis stated below, $Ho = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ (statistically insignificant) at 5% significant level

Decision Rule: The computed f-value (f*) =37.95289 and the tabulated (F $\acute{\alpha}$ k-1, n-k) value =2.69.

From the table above, since the fcal =37.95 F0.05 (4, 30) =2.69, we reject the null hypothesis (Ho) and conclude that the overall regression is statistically significant at 5% significant level. This implies that there exist a relationship between the dependent variable (RGDP) and the explanatory variables.

Normality Test: The normally test is employed in this study to ascertain whether the error term follows a normal distribution. It follows a Chi-square (X^2) distribution. The hypothesis is stated below.

H_o: The error term is not normally distributed.

Decision Rule:
Where $X^2* = 5.99$ and $X^2 = 0.21 =$ Jargue Bera value.

From the table, since the JB value =0.21 is less than the computed $X^2* = 5.99$, we accept Ho and conclude that the error term is normality distributed.

Autocorrelation Test: Autocorrelation is a problem associated with the time series data. We employ autocorrelation test using Durbin-Watson (DW) statistic usually referred to as d-test and this according to Koutsoyiannis (1997) have optimal asymptotic properties and are more efficient for all sample sizes. The Durbin-Watson test is used to ascertain whether or not there is an indication of the presence of autocorrelation. In this study, a Durbin-Watson of d-1.75 was obtained.

Decision Rule: If $O < dl < D\iota$, we reject H_o, of no positive autocorrelation. If $d\iota \leq d \geq D\iota$, no positive autocorrelation and no decision. If $4 - d_l < d > 4$, we reject Ho, of No negative correlation. If $4-du \leq d \leq 4-D\iota$ no decision, no negative correlation and if $Du < d < 4-d$ we do not reject Ho of No autocorrelation, positive or negative.

From the table, $d\iota = 1.143$ and $Du = 1.739$ since $Du < d < 4-d$ i.e. $1.73 < 1.76 < 2.25$ then we do not reject H_o of No autocorrelation, positive or negative

Multicollinearity Test: Multicollinearity is used to denote the presence of near linear relationship among explanatory variables due to the nature of economic magnitude; multicollinearity is inherent in most economic relationships. This test is carried out using the correlation matrix. Once the pairwise correlation coefficient between two explanatory variables is in excess of 0.8 then there one bound to exist a multicollinearity problem but if not there will be no existence of such multicollinearity.

Stationarity Test: Most economic variables are non-stationary hence the need to conduct a stationarity test in order to ascertain whether the variables are stationary or not at a given order i(d). The unit Root test for stationarity was employed using the Augmented Dickey fuller /ADF/ test. The hypothesis is formulated thus; H_o: Non-stationary.

Decision Rule: Reject Ho, if /ADF/ statistic < critical value at 5% level of significance with the desires degrees of freedom.

Co-integration Test: The co-integration test is carried out in this study in order to ascertain whether the variables in the model have a sustainable long-run relationship. The hypothesis is stated below.

H_o: $\mu_t \neq 0$ (not co-integrated)
At 5% level of significance

Table 4: ???????????

VARIABLES	LOG (FDI)	LOG(RER)	LOG(INT)	LOG(OPN)	DPC
LOG (FDI)	1.000000	0.791582	-0.724010	0.644054	0.326194
LOG (RER)	0.791582	1.000000	-0.816405	0.508929	0.121625
LOG (INT)	-0.724010	-0.816406	1.000000	-0.701555	0.228242
LOG (OPN)	0.644054	-0.816406	-0.701555	1.000000	0.185809
DPC	0.326194	-0.121625	0.2282420	0.185809	1.000000

Table 5: Stationarity Results

Variable	ADF Statistic	5% Critical Value	Assessment
LOG(REDP),2	-3.407162	-2.9591	STATIONARY
DO(LOG(FDI),3)	-5.025317	-2.96273	STATIONARY
D(LOG (RER),2	-4.136235	-2.9591	STATIONARY
D(LOG(INT),2)	-5.411924	-2.9591	STATIONARY
D(log(OPN),2)	-4.612036	-2.9591	STATIONARY
D(DPC,2)	-3.803507	-2.9591	STATIONARY

From the table above, we can conclude that all the variables are stationary at different order I(d)

Table 6: Co-integration Test Results

Variable	ADF Statistic	5% Critical Value	Assessment
RESIDUAL	-3.275980	- 2.9527	CO-INTEGRATED

From the table above, since /ADF/Statistic = 1-3.275980, 5% Critical Value =/-2.9527/, we reject H_o and conclude that the residual (μ_i) is co-integrated at order one $\iota(l)$ i.e. unit root and this implies that there is a sustainable long-run relationship between the variables.

Table 7: The White Heteroscedesticity Test Results.

Variable	F-Statistic	F-Tabulated	Assessment
Dept. Var	1.746430	3.73	Homoscedasticity

Heteroscedasticity Test: This test was employed in this study in order to ascertain whether the error term is constant or not, the model is specified thus,

$$\mu_t = \beta_o + \beta_l(LOG)(FDI) + \beta_2 (RER) + \beta_3 (LOG (INT) + \beta_4 (LOG (OPN)) + \beta_5 DPC + \beta_6 (LOG (FDI)^2 + \beta_7 (LOG (RER))^2 + \beta_8 (LOG (INT))^2 + \beta_9 (LOG (OPN)^2 + \beta_{10} (DPC)^2 + \beta_{11} (LOG (FDI) (LOG (RER)) (LOG (INT)) (LOG (OPN) (DPC) + V_E$$

The hypothesis is stated thus,

H_o : $\beta_o = \beta_1 = \beta_2 = \ldots = \beta_{11}$ (Homoscedasticity)
At 5% significant level

Decision Rule: Reject Ho, if F* > F tab (0.05) and accept if otherwise from the above table, since F*=1.746430 < F$\grave{\alpha}$ = 3.73 we accept H_o of homoscedasticity and conclude that the error term is constant.

Summary of the Findings: The main aim and objective of this research work is to examine the impact of FDI on economic growth in Nigeria. Empirically, this work succeeded in providing further analysis of the impact of foreign Direct Investment (FDI) on economic growth in Nigeria.

Considering, the framework of the Neo-classical growth literature which postulates that foreign direct investment has positive impact on economic growth, we developed a two stage least square (2SLS) method or technique of estimation in order to arrive to a more concise estimate of the true impact of FDI. From the three specified models, it was ascertained that in the first model, interest rate does not conform to a priori expectation and this was as a result of the trade policy variable used by the government. In the model two of the second stage, all conformed except exchange rate which was found not to be favourable with investment due to the system of exchange rate policy practiced in Nigeria. In model three of the causality model; it ascertained that FDI Granger causes economic growth meaning that FDI contributes positively to the growth level. This implies a unidirectional effect. From the co-integration test carried out, this research work found that there exist a positive long-run equilibrium relationship between FDI and economic growth in Nigeria.

CONCLUSION

For the developing country like Nigeria, to attain an increase in growth rate through FDI inflow, more efforts should be made in attracting the flow of FDI through consistent and more reliable investment policies which should be properly regulated to ensure its optimal application.

Policy Recommendations: From the conducted empirically analysis of this research work, it was observed that more effort should be made in formulating policies that would enhance investment (both domestic and foreign) as the economy strives to attain growth through investment. Government should ensure macroeconomic stability through the appropriate use or application of trade policies, fiscal and monetary policies etc which if synchronized, would be mutually reinforcing in achieving common macroeconomic objectives of price stability and higher rate of investment and growth.

There should be stability in the domestic political climate of the host nation in order to increase FDI inflow and these should go in line with the guarantee of adequate security so as to create conducive environment for foreign and private domestic investors. Government should equally ensure that any formulated domestic investment policies must have a strong institutional and political backing for its effective implementation.

One significant factor that derives Foreign Direct Investment (FDI) is successful privatization. It goes without saying that increased inflow of forego capital for the development and expansion of our local economy can be secured if we prosecute our privatization policy drive transparently and successfully according to international standard. In essence, FDI does not necessarily mean that the inward flowing capital is for core investment in privatized state enterprises since most foreign investors are interested in privatization to the extent that it ensures liberalized, level-playing field whereby the state becomes an impartial participant. Also, much publicity should be done and mobilization to educate the citizens on the immense benefits of opening our doors for foreign investors hence attracting more FDI. Critical factors that promote increase of FDI inflow may therefore be included but not limited to flagship privatization (presently lacking in Nigeria) such as high process integrity, broad acceptance and political support and more importantly, a reliable legal and regulatory framework that is fair and reasonably predictable.

Also, with respect to the level of development of the nation's economy, there is need to effectively regulate the flow of FDI, the balance growth doctrine should be recommended for the developing country like Nigeria. The government should target the development of certain key industries based on the overall survey of the potential embedded in the industries. This will be developed through domestic and foreign Direct investment.

However, in trying to attract the required foreign capital, careful consideration must be made to protect infant industries and it would be of good view to review the applicable determinants of investors thereby increasing the rate of foreign investors in Nigeria.

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