



AN INSTITUTION ECONOMICS APPROACH TO FOREIGN DIRECT INVESTMENT ANALYSIS IN NIGERIA

Sunday Timothy Omojuyigbe*, Michael Kwanashie (Ph.D),

Anthony Ihuoma (Ph.D) and Oluwatosin Solomon Olushola (Ph.D)

Department of Economics, Veritas University, Abuja, Nigeria

*Corresponding Email: omojuyigbesunday@yahoo.com; 08035747457.

Cite this article:

Omojuyigbe S.T., Kwanashie M., Ihuoma A., Olushola O.S. (2023), An Institution Economics Approach to Foreign Direct Investment Analysis in Nigeria. African Journal of Social Sciences and Humanities Research 6(6), 21-39. DOI: 10.52589/AJSSHR-DUNZJL7B

Manuscript History

Received: 14 July 2023

Accepted: 5 Sept 2023

Published: 26 Oct 2023

Copyright © 2023 The Author(s). This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited.

ABSTRACT: *This research is an institution economics approach to foreign direct investment analysis in Nigeria spanning 1995 to 2021, using autoregressive distributed lag (ARDL) model. It employed FDI as the dependent variable, while business freedom (BF) and trade freedom (TF) are the independent variables. FDI data were sourced from World Development Indicator (WDI), while BF and TF data were sourced from Index of Economic Freedom. Descriptive statistics were used to reveal behavioral tendencies of the data; both Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests established mixed series of $I(0)$ and $I(1)$. F-bound test and Nayaran table showed long-horizon nexus between the series. The study found that in the long-horizon, the coefficients of both BF and TF have positive nexus with FDI, but are not statistically significant at 5% level of significance. Consequently, it was recommended that policy makers should improve on the openness and transparency with which businesses and trade are carried on within the economy, and interaction with other business people and government at the global level. In addition, deliberate efforts should be made to remove institutional rigidities and bureaucratic impediments to trade and investment.*

KEYWORDS: Investment, Institution, Growth, Trade, Rigidities.



INTRODUCTION

Nigeria with numerous sectors of the economy, the largest human population and economy, various mineral resources and myriad of quality human resources succeeding both within and outside the country, is undoubtedly the giant of the continent of Africa. However, both economic and human resources require refinement in form of education, processing and investment which can be made either locally or via foreign direct investment (FDI). Therefore, investment remains an avenue for increasing productivity, job creation, wealth creation, welfare and at large, a means of absolutely growing sectors of the economy. Where a country is already burdened with local and foreign debts and unable to amass adequate internally generated revenue (IGR) for investment, foreign direct investment desirability becomes a veritable economic strategy.

Despite the general acceptability of FDI as an important element of growth, some studies implied that it may be detrimental to growth, cause dependency and underdevelopment. Such studies include Carike et al. (2012), Zandile and Phiri (2019) and Zhang (2022). Therefore, country specific analysis is a necessity to determine if at all past FDI benefited a country, when FDI will benefit a country, how it benefits the country, and under what terms and conditions it will benefit the country. Else, instead of looking inward to create local economic activities, invest and re-invest surplus, a country may be disillusioned by looking forward to other countries to attract FDI.

Wang et al. (2021) stated that the characteristics of FDI are that it shows a fewer volatility degree and has asymmetrical pro-cyclical tendencies. They further stated that between the 1980s and 1990s, FDI related source of funds have increased tremendously across the globe, and it is very imperative for developing nations to grow their economies. FDI is a vital constituent of the global economy and a vital factor of economic development strategies of countries (Asiamah et al., 2019; Wang et al., 2021). Therefore, studies such as Abiola (2019), Susic et al. (2019), Asiamah et al. (2019), Loewendahl (2018) and Wu (2021) stated that FDI is an engine of economic growth as it helps to increase investment and productivity. All things being equal, the investment and productivity translates to enlargement of income for a nation, creation of jobs and a favourable balance of trade, leading to positive balance of payment. Hence, FDI remains a macroeconomic dominant force that should not be unheeded in theory and in empirical analysis.

Data from the Central Bank of Nigeria (CBN) 2020 statistical bulletin indicated that capital importation into Nigeria stood at an average of 14,996 (US\$' Million) between 2010 and 2014. It stood at an average of 13,057 (US\$' Million) between 2015 to 2020. It therefore infers that while Nigeria's population increases, there is a decline in FDI. This suggests one of the reasons why Nigeria has been experiencing increase in unemployment. The economy ought to attract more investment while retaining past FDI into the economy so as to increase productivity and inclusive growth. Furthermore, capital importation by nature of business revealed that investment in shares is the highest, followed by financing and banking. At the least, weaving, drilling, transport and hotels attracted the lowest FDI. Lastly, the reported capital importation came from about 118 countries across continents of the world. Capital importation by countries revealed that United Kingdom, United States, South Africa, Belgium, Netherland, Singapore and United Arab Emirates were the highest. By type of investment, capital importation came in form of equity, investment portfolio, bonds, money market instruments, trade credit, loans and others.



According to Iyaji (2021), continuous level of economic growth attracts more FDI. Furthermore, many factors are causations of FDI. Such factors are labor costs, level of human capital, returns to investment, trade openness, financial openness, the size of countries, natural resources endowment, macroeconomic and political determinants, taxes, as well as investment climate in recipient countries (Bayraktar, 2013; Iyaji 2021). Bayraktar (2013) stated that the share of developing countries in FDI increased almost three times between 2007 and 2010. Osei and Kim (2020) attributed the positive impact of FDI on economic growth to a country's level of financial market development. Following the general consensus on the imperative of FDI, Loewendahl (2018) stated that most economies have created internal agencies, "National Investment Promotion Agencies" (IPAs) with the main obligation of attracting FDI.

Why is FDI on a decline in Nigeria? What nature of nexus exists between FDI, business and trade freedom in Nigeria? Are there institutional rigidities in investment, business and trade in Nigeria? Are there any policy options available to the government to improve FDI? The declining state of FDI in the recent times culminating into declining investment, increasing unemployment and many other socio-economic challenges necessitated the need to investigate FDI and the freedom with which the country permits business and trade to be carried on.

THEORETICAL UNDERPINNING

Clarification

Foreign investment, otherwise called Foreign Direct Investment (FDI), is the net investment fund flow from other countries to purchase ownership interest of at least 10 percent in an entity functioning in a country that is not the country of the investor. It refers to the addition of investment sum, profit ploughed, and both long- and short-horizon assets reported or expressed through balance of payment account. The net inflows are new investment inflows less disinvestment (Bayraktar, 2013). To Susic et al. (2019), FDI is a form of outlay that external sponsors contribute to possess proprietorship right in the firm in which they advanced their investment sum for the primary aim of profit earning and retaining proprietorship right. According to Asiamah et al. (2019), FDI refers to the monetary resources that foreigners invest in companies or their subsidiaries listed on local economy's Stock Exchange. Upon this background, this study refers to FDI as the gross amount of quantifiable financial and economic inflows from various countries in different currencies and assets invested across Nigerian sectors less outflow over the same period.

Attraction of FDI

Loewendahl (2018) adapted institution economics approach to propose practical steps in which investment promotion agencies (IPAs) in nations can attract more FDI. He stated that countries can modify their institutional framework and strategy towards attracting FDI from fast emerging global markets. He further suggested improvements in answering investors' questions and demand with utmost sense of responsibility and urgency, leading to greater FDI into the economy. In addition, he posited that nations can establish efficient "one-stop-shops" to enable, negotiate or incentivize novel investment. Finally, to Loewendahl (2018), a pertinent facet to a successful IPA organization is the presence of a system that truthfully tracks and appraises operations and results.



To align with the strategies of other economies of the world, Nigerian government established the Nigerian Investment Promotion Commission (NIPC) in 2004 under the Nigerian Investment Promotion Act Chapter N117 Laws of the Federation of Nigeria (2004). The aim was to provide a national platform for investment promotion, authorization and coordination. According to Ogiemudia et al. (2021), “under the NIPC Act and the Immigration Act, companies with foreign shareholding must be registered with the NIPC and obtain a Business Permit from the Federal Ministry of Interior before commencing operations in Nigeria. A Nigerian company can have foreign shareholders, except in certain sectors on the negative list. The negative list prohibits investment by both Nigerian and foreign investors in the production of arms and ammunition, and the production of and dealing in narcotic drugs and psychotropic substances. Restrictions also apply to specific industries.”

Institutionally, there is permission for foreign ownership across industries. However, to enhance the participation of the citizens, some restrictions are in place. Ogiemudia et al. (2021) identified the limits on the purchase of ownership rights by foreign nationals in the following explicit businesses:

- i. Nigerians must own a minimum of 51% of the stocks of oil and gas business
- ii. The Coastal and Inland Shipping Act restricts the use of foreign-owned or manned vessels for coastal trade in Nigeria.
- iii. For broadcasting license to be issued, it must be evident that the firm applying is not a proxy for any foreign interests and such firm is majorly owned and run by Nigerians.
- iv. It is only a national agency (in which Nigerians have minimum of 74.9% ownership) can advertise to gain the Nigerian consumption caption.
- v. A foreign investor cannot acquire an equity interest in or sit on the board of a Nigerian private security guard company.
- vi. A company rendering engineering services must be registered with the Council for the Regulation of Engineering in Nigeria (COREN). A pre-qualification requirement for registration with COREN is that the company must have Nigerian directors who have registered with COREN and to hold a minimum of 55% of the company's stocks.
- vii. To obtain licence for aviation business, the Nigerian Civil Aviation Authority must be pleased that the company or person applying is Nigerian.
- viii. The Pharmacist Council of Nigeria Act (2004) provides for the registration of non-Nigerian citizens only if the applicant's home country grants reciprocal registration to Nigerians, and the applicant has been resident in Nigeria for at least 12 months before the application.

Product Life Cycle Theory

Raymond Vernon (1913–1999) was an American economist who developed product life cycle theory in 1966 with the aim of explaining foreign direct investment (FDI) made by American companies outside of America, precisely to Europe after the World War II. The theory states that in the early stage of the product's life-cycle, most or all the components and human capital used in producing, conserving and packaging the said product emanate from the national origin



where it was developed. Once the product becomes fertile, accepted and universally proliferated across intercontinental markets, production from the originating country commences to gradually shift to countries and continents where the product is being mostly consumed. This continues to happen until certain instances where the product itself turns to be imported by its first country of development.

Vernon (1966) posited that there are four stages of production cycle which are: innovation, growth, maturity and decline. During the innovation stage, the United States (US) multinational firms create new advanced goods for their country's internal consumption in a manner that there is no exportation of the new goods. As the goods grow to the maturity stage, there comes massive production, leading to export of the leftover to many other territories so as to gain foreign markets share. As a continent, Europe experienced mass consumption, leading to high demand in favour of manufactured commodities like those from the US. Consequently, firms in America commenced exportation, leveraging their productive technology to scale transnational entrants. During the innovative stage of the production cycle, producers have exclusive knowledge and personal technologies. As the product develops and gains local and international market share, the technology becomes popular among producers. Therefore, firms within Europe begin to replicate American goods that US multinationals were trading into their continent.

As this happens, the decline stage sets in. To prevent relegating their goods, US firms were forced to perform production modification and improvement to maintain their market shares in foreign markets. Without production and improvement, any country that possesses comparative advantage naturally becomes the country that will be well known with the production of the product, without recourse to the initial originating country. The relevance of product life cycle theory is in its divergent view of more than two countries unlike the comparative advantage theory that illustrated only two countries. Product life cycle theory explains how and why foreign direct investment is made across nations and continents of the world. According to Buckley (1999), it shows FDI by US firms, that is, the movement to overseas production embarked upon in response to consumer demand in foreign markets.

Internalization Theory of Multinational Firms

The theory of internalization was developed by Buckley and Casson in 1976; also, by Hymer (1976) and Hennart (1982). It clarified the growth of multinational firms and their enthusiasms for embarking on foreign direct investment (FDI) in different countries. Buckley and Casson demonstrated that multinational firms organize and re-organize their internal operations and processes in order to amass specific returns, which are earnable within international market. Hennart (1982) develops the idea of internalization using both vertical and horizontal integration models. Hymer authored the idea of firms' explicit advantages and revealed that FDI from one country to another is as a result of earnable rewards harnessed through firms' definite advantages that overshadow the associated operating costs in the international markets. According to Hymer (1976), multinational firms operate upon market imperfections that lead to a divergence from perfect competition in the final product market. He identified that FDI is a strategic action point at a firm's level of decision making, opposed to a capital market monetary decision.



Empirical Evidence

This study reviewed past related empirical evidences to lay a solid foundation, correlation and a basis for understanding FDI analysis. Udi et al. (2022) investigated FDI-led growth within the scope of 1970 and 2017. The variables of the study are gross domestic product, trade openness, urbanization, FDI and industrialization (INDTR). Augmented Dickey-Fuller (ADF), Phillips-Perron and KPSS unit root tests revealed stationarity of the series at mixed orders of I(0) and I(1). Autoregressive distributive lag (ARDL) estimation was used. Econometric outcomes indicate that FDI has very strong direct impact on gross domestic product, while causality outcomes also indicate a one-way link running only from FDI to gross domestic product and a unidirectional connection from urbanization to foreign direct investment. The inference from this interpretation suggests that only urbanization is material in attracting FDI.

Wang et al. (2021) carried out an analysis on the relationship between FDI and economic growth within the scope of 1992 to 2021 using Bibliometrix. By using the top 50 high frequency keywords in the FDI-economic growth (FDI-EG) literature, the study employed the use of both multiple correspondence analysis (MCA) and correspondence analysis (CA). To comprehend the knowledge structure in different periods within the scope. The study conducted a thematic evolution analysis on FDI-EG literature. From the analysis, the study found out that economic effects of FDI are a function of multiple factors, such as financial development, transfer of technology, exportation, importation and country policies.

Iheanachor and Ozegbe (2021) investigated the nexus between FDI and sustainment development using Nigeria and Ghana as case studies. The scope of the time series data used is from 2000 to 2018 and model variables sourced from World Development Indicators (WDI) are FDI, social sustainability as proxy for healthcare and education indicators, environmental and economic sustainability. Both Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests indicated data stationarity and Ordinary Least Square (OLS) econometric technique was model estimation. The study found that the social sustainability of Ghana was better than that of Nigeria, while Nigeria's environmental and economic sustainability was better than that of Ghana. A percentage rise in FDI to both Nigeria and Ghana improves economic growth and sustainability by 0.30 percent. However, the study indicated that the positive impact is not statistically significant. Therefore, economic growth and sustainability in Nigeria and Ghana are not accounted for by FDI.

Okwu et al. (2020) analyzed the effects of FDI on economic growth of 30 leading global economies within the scope of 1998 to 2017. The study employed panel data method with domestic credit to private sector (DCPS), gross fixed capital formation (GFCF), inflation-consumer prices index (INFPC), trade openness (TOPNESS), and youth unemployment (UEMPYT) as the model variables. The outcomes indicated mixed growth effects of the series in general. Foreign direct investment indicated direct and significant effect on economic growth of the countries within the specified scope. It was established that FDI heightened economic growth and consequently the study advocated more FDI-propelling strategies as well as adequate GFCF to complement FDI for workable economic advancement possibilities.

Miftahu (2020) examined the impact of FDI and total export on economic growth using Nigeria as a case study and annual time series data with a scope of 1981 to 2018. The study used ordinary least square (OLS) estimation method, cointegration analysis and granger causality technique to measure the impact and the long horizon nexus among the series. The study found



that, in Nigeria, FDI and export have a direct and significant effect on economic growth. At the same time, cointegration revealed the presence of long-horizon nexus among the series. Granger causality test revealed no causal relations between FDI and real GDP but only unidirectional causality running from FDI to export. Therefore, the study recommended that policy makers should advance a precise growth-targeted-plan, implement economic reforms within the local market, promote trade openness to connect the success of other economies and establish relatively stable macroeconomic environment, leading to wider opportunities for sustainable and inclusive-growth.

Khan and Ozturk (2020) investigated the causal linkage between net foreign direct investment (FDI), environmental pollution by carbon dioxide (CO₂) emissions, economic growth per capita, and trade openness, using balanced annual data of 17 Asian countries within the period of 1980 to 2014. The study used Panel cointegration test and confirmed the long-horizon nexus among the series. Having carried out panel data stationarity test, the study used fully modified ordinary least squares (FMOLS) methodology. FMOLS estimates on CO₂ emission model indicated that FDI exhibits a significant and direct impact on environmental pollution; economic growth per capita and trade openness are the vital determining factors of FDI. Outcomes obtained through causality test indicated bidirectional nexus between CO₂ emissions and inflow of funds through FDI. Empirically, the study found that renewed economic strategies are required to attract and redirect FDI to environmental health sectors.

Abiola (2019) examined the determinants of foreign direct investment in Nigeria. The series of the model were inflation rate (INF), exchange rate (EXR), degree of openness (DOP), infrastructure (INFRA) and growth rate of GDP (RGDP). The series were stationary at I(1) and the study used Structural Vector Autoregressive (SVAR) method of estimation to predict the outcomes. The coefficients of the predictor series indicated that of all the series, only INFRA was found to exhibit inverse nexus with FDI. Findings further indicated that SVAR evaluations and impulse response analysis ascertained this position. Variance decomposition ascertained that inflation and exchange rates are significant series that influence FDI in Nigeria. Conclusively, the study recommended improved social amenities such as access roads, power supply, information and communication technologies to experience continuous rise in FDI.

Susic et al. (2019) examined the impact of FDI on economic growth. The study employed both regression and correlation analysis on 2009 to 2015 data collected from the central bank of Bosnia and Herzegovina. Using GDP as dependent and FDI as independent variables, the absolute value of the correlation coefficient shows the strength of linear nexus that exists in the model. The study found a positive coefficient revealing that the linear rise in one variable matches the linear rise in the corresponding variable. The study concluded that there is a slight influence of FDI on GDP. Regression estimates specify that the increase in foreign direct investment in form of fixed assets of 1 million euros will on the average culminate into a rise in GDP to the tune of 1,583 million euros.

Asiamah et al. (2019) examined the determinants of FDI in Ghana between the period of 1990 and 2015. Their examination made use of causal research design and Johansen Cointegration technique employing vector autoregressive (VAR) framework for the examination. Outcomes indicated short and long horizon nexus and statistically significant inverse effects of inflation, exchange and interest rates on FDI in Ghana, while gross domestic product, electricity supply and telephone usage (TU) had direct effect on FDI. Conclusively, suggestions from the



outcome are effective ways of fascinating a rise in FDI into the country which in turn realizes growth in GDP and improved well-being for the citizenry.

Mika et al. (2017) carried out a study to investigate how security challenges have impacted foreign direct investment in Nigeria within the horizon of 2005 to 2015 in a time series analysis framework. The model contained FDI outflows (FDI-O) as controlled series; Defense and Security Vote (DSV), Economic Growth (GDP), Exchange Rate (ER) and Trade Openness were used in the model as control series. Augmented Dickey Fuller (ADF) test established the stationarity of the series and Johansen cointegration test also revealed the existence of cointegrating relationship. Pair-wise Pearson correlation coefficients indicated that except for ER, all the series exhibit strong and direct correlation with FDI-O. Estimation outcomes indicated that there exists a long-horizon nexus between FDI-O and DSV. The study also revealed through Granger causality test that causality runs from DSV to FDI-O.

Frimpong and Oteng-Abayie (2006) examined foreign direct investment, trade, and growth relationships employing augmented aggregate production function (APF) growth model. The study applied ARDL bounds test methodology to establish cointegrating equations. The variables of the model were gross domestic product per capita (GDP per capita), foreign direct investment (FDI), volume of the total labour force (L), real value of gross fixed capital formation (GFCF), the sum of export and import values to GDP ratio. The data used for the estimation span from 1970 to 2002. The outcomes of the estimation specified that the influence of FDI on growth is inverse and it is significant. While GFCF exhibits a high significant impact on GDP per capita, labour force is very significant and inversely related.

From the various empirical analysis reviewed in this study, only Udi et al. (2022), Okwu et al. (2020), Frimpong and Oteng-Abayie (2006) linked or related FDI with business and trade. Despite the laudability of their analyses, none of the works analyzed FDI from the perspective of institution economics. This identified gap amongst others is what this study seeks to keenly level up.

METHODOLOGY

Data Description

This study employed secondary time series data in its analysis. FDI data representing net inflow were sourced from World Development Indicator (WDI), while Business Freedom (BF) and Trade Freedom (TF) data were sourced from Index of Economic Freedom with a scope of 27 years covering 1995 to 2021 to depict economic institutions in Nigeria that affect FDI.

Model Specification

This study made use of Auto Regressive Distributed Lag (ARDL) model to analyze foreign direct investment in Nigeria. Bound test for Cointegration established long run relation between the variables under investigation. Here, ARDL is considered best fit knowing its representative and efficient evaluations regardless of whether the applicable series are integration of order $I(0)$ or $I(1)$. In addition, in a case of single long-run relationship, the ARDL can help differentiate between endogenous and exogenous variables (Pesaran, Smith & Shin, 2001).



Further capability and suitability of ARDL lies in its ability to detect cointegrating vectors in a situation of greater than one cointegrating vector.

Following Lipsey (2001), who stated that the influence of FDI on economic growth functions through total factor productivity (TFP), Frimpong and Oteng-Abayie (2006) built their ARDL model upon aggregate production function (APF) theoretical framework. They specified their model as:

$$\Delta \ln Y_t = c_0 + \delta_1 \ln Y_{t-1} + \delta_2 \ln L_{t-1} + \delta_3 \ln K_{t-1} + \delta_4 \ln FDI_{t-1} + \delta_5 \ln TRP_{t-1} + \sum_{i=1}^q \Phi_i \Delta \ln Y_{t-1} +$$

$$\sum_{j=1}^q w_j \Delta \ln L_{t-j} + \sum_{l=1}^q \varphi_l \Delta \ln K_{t-l} + \sum_{m=1}^q Y_m \Delta FDI_{t-m} + \sum_{p=1}^q \eta_p \Delta \ln TRP_{t-p} + \psi D_t + \varepsilon_t$$

The series and parameters are as depicted; c represents fixed parameter, ε_t represents error term and δ_i are the long-run multipliers. Y_t denotes per capita real GDP; FDI is the worth of real gross foreign direct investment; TRP is the ratio of export and import values to GDP; L represents total labour force; and lastly, K represents gross fixed capital formation (GFCF). This study thereby modified the model as:

$$\Delta \ln FDI_t = c_0 + \delta_1 \ln FDI_{t-1} + \delta_2 BF_{t-1} + \delta_3 TF_{t-1} + \sum_{i=1}^p \Phi_i \Delta \ln FDI_{t-1} +$$

$$\sum_{m=1}^q Y_m \Delta BF_{t-m} + \sum_{p=1}^q \eta_p \Delta TF_{t-p} + \psi D_t + \varepsilon_t$$

$\ln FDI$ is log of Foreign Direct Investment (FDI), BF is Business Freedom, TF is trade freedom, c_0 is constant of the model, δ_1 and δ_2 are the coefficients of the control series, and ε_t represent error term.

Apriori Expectation

$$c_0 > 0, \delta_1 > 0, \delta_2 > 0, \delta_3 > 0$$

Testing the nexus between the explanatory series obtained within the ARDL model leads to hypothesis testing of the long-horizon nexus among the underlying series. In doing this, it includes lags of both the dependent and explanatory series as regressors (Greene, 2008; Ezie, 2022).



Estimation Procedure

Auto Regressive Distributed Lag (ARDL) model is used in this study to examine FDI in Nigeria. Before then, the Bound F-statistics test is engaged to establish the long-horizon nexus between the variables that are investigated. This approach is given as ARDL (p, q) regression with an I(d) regressor:

$$y_t = \Phi_1 y_{t-1} + \dots + \Phi_p y_{t-p} + \theta_0 x_t + \theta_1 x_{t-1} \dots + q_1 x_{t-p} + u_{1t} \quad (3.3.1)$$

or

$$x_t = \Phi_2 x_{t-1} + \dots + \Phi_p x_{t-p} + \theta_0 y_t + \theta_1 y_{t-1} \dots + q_1 y_{t-p} + u_{2t} \quad (3.3.2)$$

$$t = 1, 2, \dots, T \quad \mu_t \sim iid(0, \delta^2).$$

To aid ease of estimation, the deterministic regressors such as constant and linear time trend are excluded, where Φ , θ_0 and θ_1 are unknown parameters, and x_t (or y_t) is an I(d) process generated by; $x_t = x_{t-1} + \mathcal{E}_t$; or $y_t = y_{t-1} + \mathcal{E}_t$;

u_t and \mathcal{E}_t are uncorrelated for all lags such that x_t (or y_t) is firmly independent with respect to u_t . \mathcal{E}_t is a general linear stationary process.

(Cointegration) $|\Phi| < 1$, in order to foster model stability dynamically. This assumption is not unsimilar to the stationarity condition for an AR(1) process and it simply infers the existence of a stable long-horizon nexus between $y_t(x_t)$ and $x_t(y_t)$. Where $\Phi = 1$, then there is no assurance of long-horizon nexus. The ARDL (p,q1,q2,...,qk) model approach to Cointegration testing:

$$\Delta X_t = \delta_0 i + \sum_{i=1}^k \alpha \Delta X_{t-i} + \sum_{i=1}^k \alpha_2 Y_{t-i} + \delta_1 X_{t-1} + \delta_2 Y_{t-1} + v_{1t} \quad (3.3.3)$$

$$\Delta Y_t = \delta_0 i + \sum_{i=1}^k \alpha \Delta Y_{t-i} + \sum_{i=1}^k \alpha_2 X_{t-i} + \delta_1 Y_{t-1} + \delta_2 X_{t-1} + v_{2t} \quad (3.3.4)$$

k represents the chosen maximum lag order. The F-statistic test is evaluated on the joint null hypothesis that the coefficients of the lagged variables:

$(\delta_1 X_{t-1} - \delta_1 Y_{t-1} \text{ or } \delta_1 Y_{t-1} - \delta_1 X_{t-1})$ are zero. $(\delta_1 - \delta_2)$ corresponds to the long-horizon nexus, while $(\alpha_1 - \alpha_2)$ stands for the short-horizon dynamic section.

The guess that the coefficients of the lag level series are null is evaluated.

The null of non-existence of long-horizon nexus is denoted as:



H₀: $\delta_1 = \delta_2 = 0$ (There is no long-horizon nexus)

H₁: $\delta_1 \neq \delta_2 \neq 0$ (Long-horizon nexus exists).

These are evaluated in each equation as itemized by the number of available series. They can be specified as:

$$F_X(X_I | Y_I, \dots, Y_k) \quad (3.3.5)$$

$$F_Y(Y_I | X_I, \dots, X_k) \quad (3.3.6)$$

The hypothesis is tested by means of the F-statistic (Wald test) in Equations 3.3.5 and 3.3.6 respectively. The distribution of this F-statistics is non-standard, not minding whether or not the series exhibits different orders of I(0) or I(1). The critical values of the F-statistics for different numbers of variables (K) and whether the ARDL model contains an intercept and/or trend are available (Pesaran, Smith & Shin, 2001). They produce two groups of statistical values. A group concluded that all the variables are I(0) (this is the lower critical bound), indicating that cointegration does not exist. The second and the last group concluded that all the series of the model I(1) (this is the upper critical bound, indicating the clear existence of cointegration within the series). Where the evaluated value outcomes lie between the lower I(0) and upper I(1) bounds, the result of the inference remains not conclusive and depends on whether the available series are I(0) or I(1).

Therefore, each bound contains a covering of probable classifications of the series into I(0) and I(1). However, according to Narayan (2005), the existing critical values in Pesaran et al. (2001) cannot be applied for small sample sizes as they are based on large sample sizes. Hence, Narayan (2005) provides a set of critical values for small sample sizes, ranging from 30 to 80 observations. The critical values are 2.496–3.346, 2.962–3.910, and 4.068–5.250 at 90%, 95%, and 99%, respectively.

The second step entails deciding apt lag length for the estimation of selected ARDL model. Finding an apt lag length for each of the causal series in the ARDL model is germane because of the need to have Gaussian error terms (i.e., standard normal error terms that are materially free from non-normality, autocorrelation, heteroscedasticity, etc.). In order to decide on an apt model of the long-horizon causal equation, it become essential to identify and select the optimum lag length (k) by using suitable model order selection criteria such as the Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SBC) or Hannan-Quinn Criterion (HQC).

The third step is the econometric transformation of the ARDL equation into Error Correction Model (ECM). By stating an ECM equation, the model depicts both short- and long-horizon statistical information required for interpretation and means of determining adjustment speed. This connotes the degree of any disequilibrium in the later period that is being adjusted in current period (y_t). A positive coefficient translates to a divergence, while a negative coefficient translates to a convergence. Where the value of $EC_t = 1$, then 100% of the adjustment takes place within the period, meaning the adjustment is prompt and complete. If the value of $EC_t =$



0.5, then 50% of the adjustment takes place each period. Finally, $EC_t = 0$ depicts that there is no adjustment; hence, the assumption of a long-horizon nexus cannot be true afterwards.

RESULTS INTERPRETATION

Descriptive Statistics

	LFDI	BF	TF
Mean	21.55848	53.58519	55.81481
Median	21.60413	55.00000	61.80000
Maximum	22.90267	60.00000	68.40000
Minimum	19.51785	48.00000	27.00000
Std. Dev.	1.011217	3.080922	10.34950
Skewness	-0.525552	-0.327144	-0.820540
Kurtosis	2.252580	2.557109	3.040092
Jarque-Bera	1.871386	0.702276	3.031594
Jarque-Bera Prob.	0.392314	0.703887	0.219633
Sum	582.0790	1446.800	1507.000
Sum Sq. Dev.	26.58658	246.7941	2784.914
Observations	27	27	27

From descriptive statistics above, the mean of 21.55848 for LFDI, 53.58519 for BF and 55.81481 for TF revealed average or center of the respective values of the observations. Standard deviation revealed the variation, spread or dispersion magnitude of the values of the observations from the mean. A low standard deviation value may suggest minimal variations from the mean, while a high value may suggest high variation from the mean. Jarque-Bera probability of $0.392314 > 0.05$ for LFDI, $0.703887 > 0.05$ for BF and $0.219633 > 0.05$ for TF indicate normality tendencies of the variables.

Unit Root Test

Technique	Significance Level	LFDI	BF	TF
ADF	5%	I(1)	I(0)	I(1)
ADF	1%	I(1)	I(0)	I(1)
PP	5%	I(1)	I(0)	I(1)
PP	1%	I(1)	I(0)	I(1)

Augmented Dickey Fuller (ADF) and Philips-Perron (PP) approaches were carried out to ascertain the stationarity of the variables. Both tests revealed mixed series result at 1% and 5% levels of significance.



ARDL Bound Test

Test Statistic	Value	Significance	I(0)	I(1)
F-statistic	9.118936	10%	4.19	5.06
K	2	5%	4.87	5.85
		2.5%	5.79	6.59
		1%	6.34	7.52
t-statistics	-5.782395	10%	-3.13	-3.63
		5%	-3.41	-3.95
		2.5%	-3.65	-4.2
		1%	-3.96	-4.53

Cointegration test in Table 4.3 above using F-statistic shows that 9.118936 is > the upper band of the levels of significance including targeted 5% level. At the same time, t-statistic of 5.782395 > all the levels of significance. Furthermore, both 9.118936 and 5.782395 are > Nayaran (2005) critical value of 2.96–3.910 at 5% level of significance. Hence, this study established that there is cointegrating equation in the model.

ARDL Model Short-Horizon Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CoIntEq(-1)*	-0.590976	0.102203	-5.782395	0.0003
LFDI(-1)	0.329646	0.128253	2.570279	0.0302
LFDI(-2)	0.068555	0.127974	0.535691	0.6052
LFDI(-3)	0.351861	0.129343	2.720370	0.0236
LFDI(-4)	-0.341038	0.188864	-1.805738	0.1044
BF	0.042514	0.032015	1.327936	0.2169
BF(-1)	0.042893	0.028936	1.482381	0.1724
BF(-2)	0.049893	0.029633	1.683713	0.1265
BF(-3)	-0.033794	0.025595	-1.320304	0.2193
TF	-0.005885	0.012322	-0.477606	0.6443
TF(-1)	-0.001883	0.010926	-0.172334	0.8670
TF(-2)	-0.001032	0.010542	-0.097909	0.9242
TF(-3)	0.035848	0.010515	3.409183	0.0078
R ²	0.980347	F-statistic	34.53472	Durbin-Watson stat.
Adjusted R ²	0.951960	Prob(F-statistic)	0.000005	1.902257

The correction mechanism of approximately -0.59 is significant, has the expected negative sign, and implies a moderately rapid adjustment to equilibrium having experienced a one-time shockwave. This indicates that the former year's shockwave converges back to the long-horizon equilibrium in the current year at approximately 59% speed.

While LFDI(-1), LFDI(-2) and LFDI(-3) show positive coefficient nexus with current period LFDI, only LFDI(-4) shows negative nexus. However, only LFDI(-1) and LFDI(-3) show statistical significance at 5% level with probability values of 0.0302 and 0.0236 respectively.



A percentage increase (or decrease) in LFDI(-1), LFDI(-2) and LFDI(-3) will on the average lead to approximately 0.3, 0.07 and 0.4 percentage increase (or decrease) respectively in current value of LFDI, all other things being equal. A percentage increase (or decrease) in LFDI(-4) will on the average lead to approximately 0.3 percent decrease (or increase) in LFDI. BF, BF(-1) and BF(-2) have positive nexus with LFDI and not statistically significant; only BF(-3) has positive nexus and is statistically significant at 5% level of significance. A unit increase (or decrease) in BF, BF(-1) and BF(-2) will on the average lead to approximately 0.0425, 0.0428 and 0.0499 increase (or decrease) respectively in LFDI, while a unit increase (or decrease) in BF(-3) will on the average lead to a decrease (or increase) in LFDI.

TF, TF(-1) and TF(-2) have negative nexus with LFDI, but are not significant. Only TF(-3) has a positive nexus with LFDI and is statistically significant. A unit increase (or decrease) in TF, TF(-1) and TF(-2) will on the average lead to approximately 0.0059, 0.0019 and 0.001 decrease (or increase) in LFDI while a unit increase (or decrease) in TF(-3) will on the average lead to approximately 0.036 increase (or decrease) in LFDI. R-squared value of approximately 0.98 and adjusted R-squared value of approximately 0.95 established that the model is best fit as R-squared value connotes that approximately 98% variation in LFDI is explained by the model. F-statistics of approximately 34.5 with probability of $0.000005 < 0.05$ confirms overall worth of the model. Durbin-Watson statistics value of approximately 1.9 equally upholds the structural stability of the model and that there is no presence of autocorrelation.

ARDL Model Long-Horizon Estimation

Levels Equation

Case 5: Unrestricted Constant and Unrestricted Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BF	0.171761	0.106339	1.615228	0.1407
TF	0.045768	0.024991	1.831365	0.1003

$$EC = LFDI - (0.1718*BF + 0.0458*TF)$$

In the long-run, though both BF and TF are not statistically significant; they exhibit positive nexus with LFDI. A unit increase (or decrease) in BF averagely results to approximately 0.17 increase (or decrease) in LFDI. An increase (or decrease) in TF averagely results to approximately 0.046 increase (or decrease) in LFDI.



Test for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.144540	Prob. F(4,8)	0.4019
Obs*R ²	8.735448	Prob. Chi ² (4)	0.0681

Source: Author's computation using E-views 10, (2022).

Absence of auto correlation is found given probability chi² value of 0.0681 which is > 0.05 level of significance.

Test for Heteroscedasticity

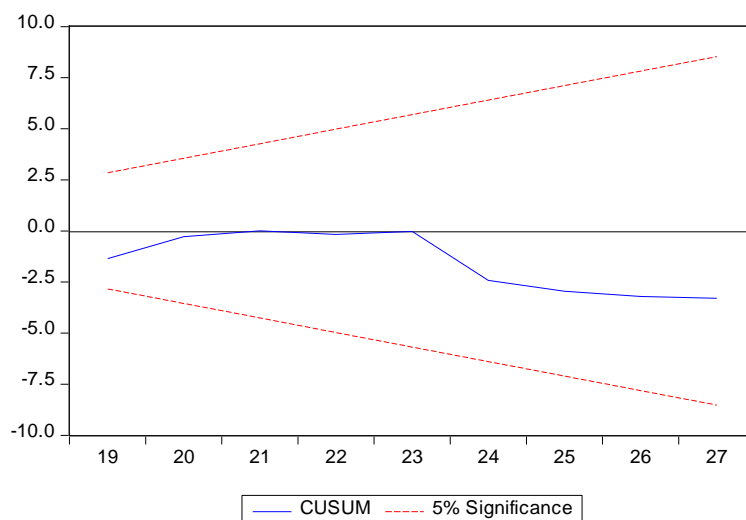
Breusch-Pagan-Godfrey Statistical Values

F-statistic	0.625956	Prob. F(13,9)	0.7857
Obs*R ²	10.92117	Prob. Chi ² (13)	0.6174
Scaled explained SS	3.621720	Prob. Chi ² (13)	0.9946

Source: Author's computation using E-views 10, (2022).

Absence of heteroscedasticity is found given the probability chi² value of 0.6174 which is > 0.05 level of significance.

Cusum Stability Test



The blue line stayed within the acceptable region of 5%; hence, cusum stability test shows appropriateness and stability of the model in making long run decision.



SUMMARY, CONCLUSION AND RECOMMENDATIONS

The study is an institution economics approach to FDI analysis in Nigeria. Relevant works were reviewed and empirical evidence on the subject cut across Nigeria and other countries, using different econometric models and variables including FDI and other economic variables. The study used FDI as the dependent variable while Business Freedom (BF) and Trade freedom (TF) were used as the independent variables to capture the nexus of economic institution on FDI. The findings of the study revealed long horizon equilibrium relationship with approximately 59% speed of adjustment convergence. In the long run, both BF and TF are not statistically significant, but they exhibit positive nexus with LFDI. A unit increase (or decrease) in BF will on the average lead to approximately 0.17 increase (or decrease) in LFDI. An increase (or decrease) in TF will on the average lead to approximately 0.046 increase (or decrease) in LFDI.

This nexus is in line with a priori. The insignificance of the results is an indication that Nigeria is yet to perform optimally and favourably in BF and TF rating globally. This further signifies that the economic institutions that regulate, authorize, supervise and monitor businesses may be weak. This weakness feasibly may exist within the institutions that in one way or the other regulate businesses and trade in different sectors. These institutions play pivotal roles in Nigeria's economy. They regulate, monitor, and promote economic vibrancy, effectiveness and efficiency; hence, they are cogent factors in attracting meaningful FDI into the local economy. Such government institutions include Nigerian Investment Promotion Council (NIPC), Federal Inland Revenue Service (FIRS), Corporate Affairs Commission (CAC), Bureau Public Enterprise (BPE), Nigerian Customs Service (NCS), Nigerian Export-Import Bank (NEXIM), Nigerian Deposit Insurance Corporation (NDIC), Nigerian Stock Exchange (NSE), Nigeria Ports Authority (NPA), Central Bank of Nigeria (CBN), Economic and Financial Crimes Commission (EFCC), etc.

For BF and TF to significantly increase FDI in Nigeria, institutions that helps in attracting FDI in the local economy require government's keen attention. This study hereby recommends the revitalization of economic and regulatory institutions so as to improve the openness and transparency with which businesses and trade are carried on in Nigeria, and interaction with other business people and government at the global level. In addition, deliberate efforts must be made to remove institutional rigidities and bureaucratic impediments to trade and openness. These can be achieved thus:

- i. Adequate legal and economic framework on property rights protection in Nigeria. This is to combat counterfeiting, protect initiative, encourage continuous innovations across sectors and also attract FDI.
- ii. The use of technology for seamless, easy, transparent and timely location tracking and billing of cargo shipment, and payment at the ports to improve the speed of importation and exportation of commodities.
- iii. Renewed, smart, all-inclusive and preventive fight against corruption instead of waiting for whistle-blowing after the act is done. This can be achieved by legally and politically strengthening the institutions established to fight against corruption in the country.



- iv. Promotion of financial discipline between financial institutions and borrowers. Full implementation and institutionalization of global standing instruction (GSI) in the financial sector can help in this regard.
- v. Introduction of institutional performance rating or appraisal, checks and balances so as to drive effectiveness and efficiencies of institutions capable of attracting FDI.
- vi. Promotion of “ease of doing business” measures covering business registration, operation and distribution activities within the Nigeria economy. There should be a very strict control against multiple vehicular licenses and charges by various local government revenue collection representatives and personnel across roads in Nigeria. This will further aid the attraction of incremental FDI into the country.
- vii. Provision of adequate and effective security across the country so that local and foreign investors are free to locate firms in their place of choice.

Declaration by the Authors

It is hereby declared by the authors that there is neither contending financial interests and/or personal relationships with anyone or organization that might influence the results and findings of this study.

REFERENCES

- Abiola, Abidemi. (2019). Determinants of foreign direct investment in Nigeria: A structural VAR approach. *International Journal of Applied Economics*, 16(1), 22-37.
http://www2.southeastern.edu/orgs/ijae/index_files/IJAE%20MARCH%202019%20ABIOLA%20OCT-30-2019.pdf.
- Asiamah, M., Ofori, D., & Afful, D. (2019). Analysis of the determinants of foreign direct investment in Ghana. *Journal of Asian Business and Economic Studies*, 26(1), 56-75.
 DOI 10.1108/JABES-08-2018-0057.
- Bayraktar, N. (2013). Foreign direct investment and investment climate. *Procedia Economics and Finance*, 5, 83-92. Elsevier.
- Buckley, P. (1999). In memory of Raymond Vernon. *Journal of International Business Studies*. 30(3). doi:10.1057/jibs.1999.29. JSTOR 155458.
- Buckley, P., & Casson, M. (1976). *The future of the multinational enterprise*. London: Macmillan.
- Carike, C., Elsabe, L., & Henri, B. (2012). Chinese foreign direct investment in Africa: Making sense of a new economic reality. *African Journal of Business Management*, 6(47), 11583–11597.
- Central Bank of Nigeria (2021). Foreign investment statistics. *Statistical Bulletin*, 31(2020).
<http://statistics.cbn.gov.ng/cbn-onlinestats/DataBrowser.aspx>.
- Ezie, O. (2022). *A practical guide on data analysis using eviews*. Kadod, Kaduna.
- Frimpong, J. M. & Oteng-Abayie, E., F. (2006). Bounds testing approach: an examination of foreign direct investment, trade, and growth relationships. *Munich Personal RePEc Archive*. https://mpira.ub.uni-muenchen.de/352/1/MPRA_paper_352.pdf



- Hennart, J. F. (1982). *A theory of multinational enterprise*. University of Michigan Press
- Hymer, S. H. (1976). *The international operations of national firms: A Study of Direct Foreign Investment*. MIT Press.
- Greene, W. H. (2008). *Econometric analysis*. Upper Saddle River, Prentice Hall.
- Iheanachor, N. and Ozegbe, A. E. (2021). An assessment of foreign direct investment and sustainable development nexus: The Nigerian and Ghanaian perspectives. *International Journal of Management, Economics and Social Sciences*, 10(1), 49-67.
<https://doi.org/10.32327/IJMESS/10.1.2021.4>
- Iyaju, D. (2021). Insurgency, political risk, and foreign direct investment inflows in Nigeria: A sectorial analysis. *CBN Journal of Applied Statistics*, 12(2), 27-57.
- Khan, M. A., & Ozturk, I. (2020). Examining foreign direct investment and environmental pollution linkage in Asia. *Journal of Environmental Science Pollution Research*, 27, 7244–7255. <https://doi.org/10.1007/s11356-019-07387-x>.
- Lipsey, R. E. (2001). Foreign direct investment and the operations of multinational firms: Concepts, history and data. *NBER Working Paper N° 8665*. National Bureau of Economic Research (NBER).
- Loewendahl, Henry. (2018). Innovations in foreign direct investment attraction. Inter-American development bank technical note N° IDB-TN-1 572.
<http://dx.doi.org/10.18235/0001442>.
- Miftahu, Idris. (2020). An impact assessment of foreign direct investment and export volume on economic growth in Nigeria. *IOSR Journal of Economics and Finance*, 11(3), 56-67.
 DOI:10.9790/5933-110304566
- Mika, A., Tanko, S., & Abubakar, A. M. (2017). The impact of insecurity on foreign direct investments: Evidence for Nigeria. *Sokoto Journal of the Social Sciences*, 7(2), 175-182. DOI: 10.29816/sjss.7.2.13.
- Narayan, P. K. (2005). The saving and investment nexus for China: Evidence from cointegration tests. *Applied Economics Journal*, 7(37), 1979-1990.
- Ogigemudia, O. L., Ososami, L., Sijuwade, C., Etido, D., Nwokocha, T., Udoma, U., & Osagie, B. (2021). Doing business in Nigeria: Overview. *Thompson Reuters Practical Law*. [https://uk.practicallaw.thomsonreuters.com/5-5250487?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/5-5250487?transitionType=Default&contextData=(sc.Default)&firstPage=true)
- Okwu, A., T., Oseni, I., O., & Obiakor, R., T. (2020). Does foreign direct investment enhance economic growth? Evidence from 30 leading global economies. *Global Journal of Emerging Market Economies*, 12(2), 217-230.
<https://doi.org/10.1177/0974910120919042>.
- Osei, M. J., & Kim, C. J. (2020). Foreign direct investment and economic growth: Is more financial development better? *Economic Modelling*, 93, 154-161.
<https://doi.org/10.1016/j.econmod.2020.07.009>.
- Pesaran, M., H., Smith, R., J., & Shin, Y. (2001). An autoregressive distributive lag modeling approach to cointegration analysis. *Centennial Volume of Rangar Frisch*, Cambridge University.
- Susic, I., Trivanovic, S, M., & Susic, M. (2019). Foreign direct investments and their impact on the economic development of Bosnia and Herzegovina. *IOP Conference Series: Materials Science and Engineering*, 1-17.
<https://iopscience.iop.org/article/10.1088/1757-899X/200/1/012019/pdf>.
- Udi, J., Hasan, G., & Bekun, F. V. (2022). Assessment of foreign direct investment-led growth argument in south Africa amidst urbanization and industrialization: Evidence



- from innovation accounting tests. *Journal of the Knowledge Economy*.
<https://doi.org/10.1007/s13132-022-01015-9>
- Vernon, R. (1966). International trade and international investment in the product life cycle. *Quarterly Journal of Economics*, 81(2), 190-207.
- Wang, X., Xu, Z., Qin, Y. & Skare, M. (2021). Foreign direct investment and economic growth: A dynamic study of measurement approaches and results. *Economic Research*. DOI: 10.1080/1331677X.2021.1952090.
- Wu, Z. (2021). The Impact of FDI on the Economic Growth of the Yangtze River economic belt: An empirical study based on VAR model. *E3S Web of Conferences*, 251. EDP Sciences.
- Zandile, Z., & Phiri, A. (2019). FDI as a contributing factor to economic growth in Burkina Faso: How true is this? *Global Economy Journal*, 19(1).
<https://www.worldscientific.com/doi/10.1142/S2194565919500040>
- Zhang, K. H. (2022). Chinese foreign direct investment in Africa: Its motivations, determinants, and impact on the African economies, the Palgrave handbook of Africa's economic Sectors. https://doi.org/10.1007/978-3-030-75556-0_23