9. DO REGULATORY QUALITY, GOVERNMENT EFFECTIVENESS AND RULE OF LAW MATTER TO FOREIGN DIRECT INVESTMENT IN NIGERIA?

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Abstract

A strong institutional framework, which embeds rule of law, regulatory quality and government effectiveness, is critical to foreign direct investment drive. In general, the effectiveness and predictability of the judiciary, quality of contract enforcements, including property rights, government effectiveness, regulatory framework, stability of the political system, as well as macroeconomic environment are indispensable to private enterprise and foreign direct investment inflows in resource-scarce countries, necessitating this study. Employing the Generalized Method of Moments (GMM) estimation techniques on annual time series data covering the period from 1970 to 2020 and the Fully Modified OLS (FMOLS) and Dynamic OLS (DOLS) for robustness check, the empirical findings show that regulatory quality, government effectiveness and rule of law matter to FDI inflows in Nigeria. Political stability and exchange rate are positively related to FDI, although the effects are not significant. Infrastructure development (measured by ICT) has a significant impact on FDI, while Inflation rate (a proxy for macroeconomic policy environment) and control of corruption are negatively related to FDI inflows. Based on the foregoing findings, it is important that sound regulatory framework and government effectiveness be developed, in addition to an efficient legal framework that support FDI inflows. Increased investment in critical infrastructure, stable political and macroeconomic environments and a competitive exchange rate are other important ways of promoting foreign direct investment inflows in Nigeria.

Keywords: institutions, regulatory quality, enforceability of contracts, macroeconomic policy, GMM

JEL Classification: D02, D72, F21, C13

1. Introduction

The importance of sound regulatory environment, government effectiveness and rule of law to foreign direct investment (FDI) inflows is well established in the development literature. A sound institutional environment is *sine qua non* to foreign investment inflows. Thus,

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regulatory framework, government efficacy and rule of law that guarantees effectiveness and predictability of judiciary, as well as enforceability of contracts proceedings matter to foreign investment (Jensen, 2003; Fosu *et al*., 2006; Avellaneda, 2006, Diop *et al*., 2010, Ozekhome, 2017).

A large body of the literature on the theoretical and empirical determinants of foreign direct investment have shown that political and institutional framework are critical to FDI. These studies that were largely cross-sectional and panel, examined the determinants of FDI (see Ayanwu 2011; 2012; 2015); Asiedu, 2006; Ajayi, 2006; Mijiyawa, 2015), positing that economic, political and institutional variables explain FDI empirics in different countries. Importantly, evidence (see Kaufmann and Kraay, 2003; Rodrik *et al*. 2004) showed that foreign trade, private enterprise and foreign direct investment cannot thrive in an environment of uncertainty. Invariably, institutional and governance structures, as well as enforceability of contracts and secured property rights drive foreign investment to certain destinations (Kaufmann and Kraay, 2000; Acemoglu *et al*., 2002; Avellaneda, 2006; Eregha, 2014; Ozekhome, 2017). These studies mainly employed panel data, with very few of them utilizing country-specific evidence. No known study has investigated the simultaneous effects of regulatory quality, government effectiveness and rule of law on FDI in Nigeria. Given the fact that institutions promote foreign private investment and enterprise, this study becomes imperative.

A unique feature of this study is the use of a more comprehensive and reflective measure of political stability, as opposed to previous studies. This study uses a weighted index of socio-political risk components on comparable basis, sourced from the International Country Risk Guide (ICRG) to measure socio-political stability. This is a significant improvement on past studies that utilized a dummy variable to capture political stability/ instability. It is to be noted that democracy in a typical developing country like Nigeria, given the experience so far, does not imply absence of violence, hostilities, insurrection, armed conflicts and terrorism, as these are integral parts of socio-political instability. In addition, this study uses an appropriate dynamic estimation approach - the GMM system, alongside Fully Modified OLS (FMOLS) and dynamic OLS (DOLS (used for test of robustness), to address any potential endogeneity and reverse causality (simultaneity) that may arise between the institutional variables employed and FDI. The adoption of these robust dynamic approaches is clear value addition to this study as against past studies on the subject matter.

Against this background, the following research questions are pertinent to this study:

(i) What is the effect of institutional variables encompassing regulatory quality, government effectiveness and rule of law on foreign direct investment inflows in Nigeria?

(ii) Does institutional, policy and governance variables (outcomes) significantly influence foreign direct investment in Nigeria?

Aside the introductory section, the rest of the paper is organized as follows. Section 2 presents some stylized facts on FDI in Nigeria. Section 3 presents a review of the theoretical literature and empirical literature, as well as key policy issues in the institutional quality-FDI nexus. Section 3 deals with the methodology, model specification and data. The empirical results and discussion are contained in Section 5, and Section 6 concludes the paper, with some evidence-based policy recommendations.

2. Stylized Facts on FDI in Nigeria

Data from UNCTAD (2019) show that FDI to Nigeria stood at $205 million in 1970, rising to $738.78 million in 1980. By 1986, net FDI inflows to Nigeria was $193.21 million. Between 1997 and 2000, FDI fluctuated, reaching an all-high $8.024 billion in 2011. FDI was $1.87 billion in 2004, $4.9 billion in 2005, $4.9 billion in 2006, 6.2 billion in 2009, $72.5 million in 2016, and $72.3 million in 2017 (IMF, 2019; UNCTAD, 2019). On the average, FDI inflows to Nigeria fell by an average of 8.2 percent within the period 2014-2019 (World Bank, 2019). The decline in FDI inflows is attributed to a number of factors as poor regulatory quality and government effectiveness, weakness in the legal environment, poor and non-enforceability of contracts proceedings, unstable macroeconomic and political environments, weak security architecture, poor bureaucratic processes, infrastructure constraints and structural bottlenecks, and a wide-spread rent-seeking behavior (Ozekhome, 2017).

3. Review of Literature

3.1. Theoretical Literature

In the theoretical literature, several approaches have been adopted to explain the behavior of investment and its dynamics. They include the Keynesian model, the neoclassical approach and cash-flow model. Recall that investment decision is a firm level decision (microeconomic) and the aggregation of micro-level activities adds up to macro-level activities. The most widely utilized approach to explaining investment decisions by firms is the neoclassical model, hinged on the rigid assumption that in a perfectly competitive environment, firms seek to maximize profits (Ajide, 2013). Using the extended neoclassical approach to investment analysis, institutional factors are incorporated as determinants of FDI. Unlike the purely neoclassical model, the modified neoclassical approach accounts for institutional settings in consistently modelling FDI. In this context, rule of law, regulatory framework and government effectiveness are factored in as integral determinants of firms' investment decisions. Following this approach, improved institutional framework and good governance have the capacity to enhance capital accumulation (Avellaneda, 2006, Ozekhome, 2017). Acemoglu *et al*. (2002) posit that differences in the degree of institutional settings are responsible for the varying levels of investment among countries/regions. Thus, countries that experience increased foreign private investment are those with sound regulatory framework, effective government capacity, especially in terms of the ability to restrain socio- political tension and violence, including insurgency and terrorism, as well as favorable macroeconomic environment that sufficiently encourages foreign direct investment and private initiative, technological know-how and innovation and international economic integration (Ozekhome, 2017). Strong domestic institutional capacity and good governance therefore stimulate capital accumulation.

3.2. Empirical Review

Lim (2001) investigates FDI determinants. The findings reveal that a combination of political, institutional and economic variables are significant determinants of FDI.

Jensen (2003) examines the impact of democratic governance on FDI and economic growth, based on data obtained from ten African countries. Utilizing panel data techniques, as well as Granger causality test, the findings show that poor democratic governance and structures

undermine FDI while the reverse holds for robust democratic institutions. Bengoa and Sanchez-Robles (2003) findings corroborated the findings of previous studies that FDI is enhanced by institutions structures such as rule of law, control of corruption, accountability and efficient bureaucratic procedures.

Using evidence from 59 countries for the period 1999 -2000, Sung (2004) evaluates the link among state failure, economic failure and predatory organized crimes based on the Annual Economic Competitiveness Evaluation Report by the World Economic Forum and Harvard University. Utilizing the least-squares dummy variable model, the bivariate model results show that investment and growth are undermined by institutional weakness and weak state capacity. Specifically, the findings show that state failure leads to lower private investment inflows. Against this backdrop, he recommends strong institutional framework in order to enhance private investment. Easterly and Levine (2002), Rodrik *et al.* (2004) and Diop *et al*. (2010) also find positive link between degree of institutional settings, governance structures and investment.

Chauvet *et al*. (2007) in Elijah and Ayodele (2013) assess the resulting cost of state institutional failure, including weak capacity on a failing state and its neighbors. Using a global sample of developing countries for the period 1974-2001, and Ordinary Least Squares (OLS) and the Generalized Method of Moment (GMM), the evidence indicate that a failed state has lower rate of economic growth by 2.6 per cent as compared to when it is at peace in the presence of good institutions and governance, while violence and crimes result to a further deterioration of growth to the tune of 1.6 percent annually. Knutsen (2010) in Ozekhome (2017) examine the growth effect arising from the presence of democratic structure in sub-Saharan Africa, and in particular, whether the growth-impact of democracy is dependent on the degree of state capacity, as well as institutional structures. The study specifically sought to examine the negative impact of dictatorial regimes on economic performance in countries characterized by weak state institutions where leaders pursue macro economically inefficient policies to the detriment of public welfare. The findings reveal that democracy engenders higher growth and that the effect is of a higher positive magnitude in Africa as compared to the world. Invariably, the existence of democratic institutions has higher growth positive impact in countries with strong institutions than in weak state institutions.

Utilizing OLS estimation technique, Nurt-tegin and Czap (2012) evaluate the growth impact of democratic institutions, using evidence from developed and developing countries for the period 2000 – 2009. The results show that countries with less democratic institutions have greater tendency to experience slower growth than those with more stable and robust democratic structures. The results show that policies paying attention to institutional and macroeconomic environment yield greater and more sustained private enterprise and foreign direct investment.

Adelegan and Olabisi (2013) investigate the impact of democracy on foreign direct investment and economic growth in Nigeria. The findings show that democratic variables significantly influence FDI and growth. Based on the findings, they recommend strong democratic and governance structures to stimulate foreign direct investment and economic growth in Nigeria.

In an assessment on 'executing growth by means of FDI attractiveness survey', Ernest and Young (2014) show that institutional framework matter to FDI, and both are positively and significantly linked to growth. Specifically, rule of law, control of corruption, as well as bureaucratic procedures are significant FDI and growth determinants.

Eregha (2014) investigates the impact of institutional and governance variables on investment performance and per capita GDP growth of ECOWAS countries. Employing panel data analysis, the results show that institutional and governance variables significantly influence investment and growth of ECOWAS countries. In view of the evidence, the author recommends strengthening of institutional framework to stimulate investment and growth in the region.

Ozekhome (2017) investigates the nexus between democratic institutions, foreign direct investment and economic growth in Nigeria. He employs the Generalized Method of Moments (GMM) estimation techniques on annual time series data covering the period 1981 to 2015. The findings show that democratic institutions that embed the rule of law, the effectiveness and predictability of the judiciary and enforceability of contracts proceedings, as well as accountability and transparency of government policies and actions are significant drivers of FDI and growth. Other studies that find evidence of a significant relationship between political and institutional variables and foreign direct investment in Africa and Nigeria are Asiedu (2006); Benjamin (2012); Ayanwu (2012; 2015); Mijiyawa (2015); Brown and Ibekwe (2018); Fadiran (2020) and Ozekhome (2022).

3.3. Gap in the Literature

From the review of the pertinent literature, it may be observed that the focus of most previous studies has largely been on the FDI-growth relationship. The few related studies on institutional framework-FDI nexus have largely been grouped (panel) studies. Country-specific studies are quite important, considering the fact that the impact of institutional variables on FDI could significantly vary across countries, given the structural and economic peculiarities across countries. To the best of author's knowledge, based on wide research, the simultaneous effects of regulatory quality, government effectiveness and rule of law on FDI is yet to be investigated in Nigeria, in spite of the important role of FDI in the augmentation of domestic and foreign resource shortages in Nigeria. This study uses several dynamic estimation approaches -the system GMM, alongside the FMOLS AND DOLS (for robustness checks) to address the potential endogeneity and reverse causality (simultaneity) that may arise between institutional variables and FDI, which prior research neglected. The adoption of these robust dynamic approaches is thus, clear value addition to this study.

4. Empirical Methodology

4.1 Model Specification and Description of Variables

To investigate the effect of regulatory quality, government effectiveness and rule of law on foreign direct investment, a stylized FDI model is specified using the system GMM equation:

$$y_{i,t} - y_{i,t-1} = (\text{ø} - 1)y_{i,t-1} + \beta' x_{it} + \alpha_i + \epsilon_{it} \qquad (1)$$

where: y represents the dependent variable, x_{it} is a set of regressors, α_i is a country-specific effect, and ϵ_{it} is error term.

More formally, the equation that denotes the SYS-GMM model is written as:

$$\begin{pmatrix} Y_{it} \\ \Delta Y_{it} \end{pmatrix} = \propto i + Y \begin{pmatrix} Y_{it} - S \\ \Delta Y_{it} - S \end{pmatrix} + \beta_i \begin{pmatrix} Y_{it} \\ \Delta Y_{it} \end{pmatrix} + \varepsilon_{it} \dots\dots\dots\dots (S = 1\ 2, \dots\dots\dots s) \qquad (2.1)$$

To ensure that used instruments are valid, two tests are applied; the Hansen test, which is used to verify that the included instruments are exogenous, and the Arellano-Bond test that checks for the second order autocorrelation of the error term, which is done by testing the residuals. Blundell and Bond (1998) show that, under a mild stationarity assumption for the initial conditions Y_{i1}, the system GMM (SYS GMM) estimator that uses the lagged first-difference of the Y_{it} series can be exploited.

DY_{it} as instruments for the equation in levels, in addition to the use of the lagged levels of Y_{it} as instrument for the first-differences equations

$$y_{i,t-1} = \alpha y_{i,t-1} + \varepsilon_{i,t-1} \qquad (2.2)$$

The instrument matrix for the equation in levels is

$$Z_1,i = \begin{pmatrix} \Delta\varepsilon_{i2} & 0 & 0 & \cdots & 0 & \cdots & \vdots \\ 0 & \Delta\varepsilon_{i3} & \Delta y_{i2} & \cdots & 0 & \cdots & \vdots \\ \vdots & \vdots & \vdots & \ddots & \vdots & \ddots & \vdots \\ 0 & 0 & 00 & \cdots & \Delta y_i T-1 & \cdots & \Delta y_{i2} \end{pmatrix} \qquad (2.3)$$

The additional moment restrictions are written compactly

$$E(Z_L', i\,^{\varepsilon_i}) = 0 \; with \; \varepsilon_i = \begin{pmatrix} \varepsilon_{i3} \\ \varepsilon_{i4} \\ \vdots \\ \varepsilon_{iT} \end{pmatrix} \qquad (3)$$

The GMM estimator for the level equation is

$$\hat{\alpha}_{level} = (y_{-1}' Z_L W_N Z_L' y - 1)^{-1} (y_{-1}' Z_L) W_N Z_L' y \qquad (4)$$

where: $y - 1$ is the vector which includes the first lag of Y_i for each period.

Blundell and Bond (1998a) suggest a system GMM estimator which exploits both sets of moment conditions;

The full set of conditions is therefore

$$E\left(Y^i, t - 2D\varepsilon it\right) = 0 \; for \; t = 3, \ldots, T \qquad (5)$$

$$E\left(\varepsilon itDY^i, t - 1\right) = 0 \; for \; t = 3, \ldots, T \qquad (6)$$

The system consists of (T - 2) stacked equations in first-differences and (T – 2) stacked equations in levels for t=3, …, T.

$$Z_1,i = \begin{pmatrix} Z_D,i & 0 & 0 & \cdots & 0 \\ 0 & \Delta y_{i2} & 0 & \cdots & 0 \\ 0 & 0 & \Delta y_{i3} & \cdots & \vdots \\ \vdots & \vdots & \vdots & \ddots & 0 \\ 0 & 0 & 0 & \cdots & \Delta y_i T-2 \end{pmatrix} = \begin{pmatrix} Z_D,i & 0 \\ 0 & Z_L,i \end{pmatrix} \qquad (7)$$

The system GMM estimator is therefore;

$$\hat{\alpha}_{SYS} = (q'_{-1} Z_{SYS} W_N Z'_{SYS} q - 1)^{-1} (q'_{-1} Z_{SYS} W Z'_{SYS} q i) \quad (8)$$

where: $q_i = (\Delta y'_i, y'_i)$

The additional moment conditions for the equations in levels, and hence, the validity of the lagged differences as instruments were initially suggested by Arellano and Bover (1995). Further development of this approach by Blundell and Bond (1998) show that the additional moment restrictions remain valid, also in case of weak instruments that explicitly describe the assumptions on the initial conditions that need to be satisfied for the SYS estimator to be valid. In the SYS GMM estimator, only the most recent lag of the first differences is used as instruments for the equations in levels, given the lagged levels as instruments for the equations in first differences is already in use. The use of additional lagged first-differences results in redundant moment condition.

Thus, taking the first-difference of equation (1),

$$(Y_t - Y_{t-1}) = \alpha_1(I_t - I_{t-1}) + \beta(X_t - X_{t-1}) + \delta(y_{t-1} - y_{t-2}) + (u_t - u_{t-1})$$

where: Y= dependent variable; I = independent variable of interest; X = independent variable used as control; U = error term; t = time.

and consequently, using adequately lagged values of y_t, I_t, and $X_t$as instruments for the first differences, produces

$(y_{t-1} - y_{t-2})$ and $(X_t - X_{t-1})$

where the variables are defined as previously.

Presenting the overall model in its empirical form is

$$FDI_t = \alpha_0 + \alpha_1 FDI_{t-1} + \alpha_2 RQ_t + \alpha_3 GEFF_t + \alpha_4 RL_{,t} + \alpha_5 PS_t + \\ + \alpha_6 CORRUPT_t + \alpha_7 INFR_t + \alpha_8 EXR_t + + \alpha_9 INF_t + \varepsilon_t \quad (9)$$

where: FDI= Foreign direct investment to GDP percent;

FDI_{t-1}= One year lagged value (first lag) of FDI (a measure of agglomeration effects of FDI)

RQ=Regulatory quality;

GEFF= Government effectiveness;

RL = Rule of law;

PS=Political stability and absence of violence (measured as the averages of 12 weighted political risk components on comparable basis);

CORRUPT- Control of corruption;

INF= Infrastructure measured as ICT infrastructure (*i.e.*, average number of telephone mainlines, mobile phones and internet subscribers per 1000 persons);

EXR= Exchange rate of the Naira to the US Dollar, and;

INF= inflation- measured as the growth rate of the consumer price index

μ =stochastic error term.

α_1- α_8, are the parameters or coefficients of the explanatory variables to be estimated.

Regulatory Quality (RQ) is an indication government's capacity to appropriately formulate and implement policies and regulations that allow and encourage private investment initiative. Rule of law (RL is the fulcrum of governance reflects perceptions of the degree to which agents believe in, as well as abide by the societal rules, especially quality of enforceability of contract proceedings and property rights, legal framework, justice system and its adjudication. Rule of law is hinged on important measures such as supremacy of the law, equality before the law, civil liberties and human rights, independence of the judiciary and its effectiveness and predictability, as well as the enforceability of contracts proceedings. Political Stability captures stability in the social and political environment, in terms of the absence of violence indicating the likelihood of the government in power being destabilized or overthrown by unconstitutional or violent means, armed conflicts, insurrection and terrorism. Government effectiveness measures the availability and quality of public service, bureaucracy, quality of civil service, as well as the degree of its independence from political pressures, quality of policy formulation, in addition to its implementation as well as the credibility that the government is committed to such policies. Control of corruption indicates the extent of the fight by government, civil societies and other concerned bodies through relevel institutions, particularly legal and judiciary to curtail corruption to the barest minimum, wherein public power has hitherto been used to satisfy personal interests, private profit, as well as personal aggrandizement, and illegal resource accumulation. It includes government commitment and transparency to fighting corruption and the extent to which those found culpable are brought to face the law. Control of corruption, thus, captures the perceptions of the ability of the government to fight corruption to the barest minimum through strong and effective institutions using the rule law of procedures.

INF is a proxy for macroeconomic instability. Macroeconomic instability increases uncertainty and adversely affect private investment. A high inflation rate is expected to negatively affect investment. Conversely, low Inflation, implies the stability and certainty of the macroeconomic environment for foreign direct investment inflows. Stability of the macroeconomic environment guarantees investors' confidence that the economic environment will be conducive, and thus will sustain their investment.

Infrastructure development measures the availability of good infrastructure such as ICT that supports FDI inflows. As an important determinant of FDI inflows, it increases the productivity of investments. ICT infrastructure, used here as a proxy is a critical factor in integrating local producers into international technological and communication network, as well as in attracting vertical FDI (Addison and Heshmati, 2003; Ayanwu and Yamèogo, 2015). Infrastructure development is thus critical to FDI.

4.2. Data Sources and Estimation Technique

Annual time series data for the period 1970-2020, obtained from various the World Bank World Development Indicators and the Central Bank of Nigeria Statistical Bulletin are used for the study. The choice of the period is hinged on the oscillatory nature of FDI inflows during the period and the resultant policy attention from an era of less policy focus to greater policy consideration by the Nigerian government. To the extent that lagged FDI may be correlated with the endogenous variable and that some of the regressors may be correlated with the error term (residual), estimating the regression parameters using OLS or static panel method may result to potential endogeneity and biased and inconsistent. This necessitates the adoption of the System Generalized Method of Moments. The difference-GMM, unlike the system GMM uses the lagged differences of the endogenous variables as instruments for the level equation, thus yielding better, efficient and consistent estimates. The technique

addresses the triple-problem of endogeneity of the regressors resulting from the problem of reverse causality (simultaneity), the measurement error and omitted variables bias. The system-GMM estimator provides highly precise and less biased estimates compared to the first-differenced-GMM estimator. Added to this, it combines moment conditions for the first difference equations, making use of appropriately lagged variables as instruments, with the additional moment conditions in the levels equations provided that the first-differences are uncorrelated with the within-sample effects.

As a test of the robustness of results, alternative methodologies that include the fully modified OLS (FMOLS) developed by Philips and Hansen (1990; Phillips, 1995) and the dynamic OLS (DOLS) developed by Stock and Watson (1993) are utilized. The techniques designed to address the problems autocorrelation, heteroscedasticity and regressor endogeneity are further employed to examine the effects of regulatory quality, government effectiveness and the rule of law on FDI inflows in Nigeria. The estimates of the FMOLS and DOLS account for considerable heterogeneity to produce asymptotic unbiased, consistent and efficient estimates (Pedroni, 2000).

5. Data Analysis and Discussion of Results

5.1. Unit Root Analysis

Given the fact that time series macroeconomic variables usually drift over time, there is need to investigate their stationarity status. Unit root test of stationarity is important, as non-stationary series do not extend to future periods apart from the present, making such series unamenable for structural and policy analysis. Besides, the regression of a non-stationary series produces spurious, unrealistic and inconsistent parameter estimates. The unit root test is conducted using the Augmented Dickey Fuller (ADF) test. The results are presented in levels and first difference in Table 1.

Table 1. Unit Root Test

Variables	ADF Statistic (in Levels)	ADF Test Statistic (in First Difference)	Order of Integration	Remark
FDI	-1.022	-6.225***	I(1)	Stationary
RQ	-0.798	-5.778**	I(1)	"
GEFF	-0.986	-5.992***	I(1)	"
RL	-1.106	-5.883***	I(1)	"
PS	-0.782	-4.827**	I(1)	"
CORRUPT	-0.996	-5.212**	I(1)	"
INFR	-1.115	-6.108***	I(1)	"
EXR	-1.260	-4.850**	I(1)	"
INF	-1.117	-5.220**	I(1)	"

*Note: **; *** denotes statistical significance at 5% and 1% level, respectively.*
Source: Author's estimation.

In the Table, the ADF test statistic for each of the variables (in levels) is shown in the second column, while the ADF statistic (in first difference) is shown in the third column. The result indicates that the variables are initially non-stationary at levels. However, following Box, Jenkins and Reinsel (1994) that non-stationary time series may be made stationary by taking their first differences, the first differences of the respective variables was conducted and the

resultant unit root test conducted show that the variables are now stationary. The variables are therefore, difference-stationary; attaining stationary after first difference. They are thus integrated of order one (*i.e.*, I [1]).

5.2. Test of Cointegration

Against the backdrop that the series are integrated of order I(1), the test of cointegration is conducted to explore the existence of long-run relation among the variables. The results from the Engle and Granger residual-based two-stage cointegration test are presented in Table 2.

Table 2. Engle and Granger Residual Based Cointegration Tests Results

Variable	Test Statistic	5 Percent Critical Value	Remark
Residual Vector	-5.312**	4.107	Stationary

*Note: ** (***) denotes rejection of the hypothesis of no cointegration at 5% (1%) significance level.*
Source: Author's estimation.

The result of the cointegration test show a test statistic of -5.312, which is higher than the 5 percent critical value of 4.107, indicating the stationarity of the residuals. Thus, a long-run equilibrium relationship exists among the variables.

5.3. Analysis of Generalized Method of Moments (GMM) results

The result of the Generalized Method of Moment (GMM) is presented in Table 3. FDI is instrumented by its first lag (lagged FDI) to capture the effects of past FDI inflows on current FDI (*i.e*., agglomeration economies/ FDI persistence).

Table 3. Results from System Generalized Method of Moments (GMM)

Dependent Variable: FDI

Variables	Estimated Coefficient	t-statistics
C	0.0241	1.2280
Lagged FDI	0.0752	2.1073**
RQ	-0.2124	-2.1445**
GEFF	-0.1403	-2.1752**
RL	-0.1082	-3.0278**
PS	0.0742	1.5241*
CORRUPT	-0.0215	-1.4531
INFR	0.1872	1.1684
EXR	0.0642	1.8271*
INF	-0.1053	-1.7433*
Instrument count		12
Post Diagnostics		
Hansen J-Stat	2.87 [0.52]	
Arellano-Bond test for AR(1) Arellano-Bond test for AR(2)	-2.84 [0.03] -0.93 [0.85]	

*Note: *** Statistical significance at the 1 % level. ** Statistical significance at the 5% level. * Statistical significance at the 10% level.*
Source: Author's estimation.

All the variables have the expected signs, in line with economic theory. Lagged FDI is positively related with current FDI and significant at the 5 percent level. Thus, foreign direct investment inflows are persistent, such that agglomeration economies occur, resulting to increased FDI inflows, as a result of past FDI inflows in the country. Thus, foreign investors are attracted to make further investment given favorable investment decisions, which is good signal of favorable conditions to invest. The findings corroborate the results of Ayanwu and Yamèogo (2015 and Mijiyawa (2015). In line with the estimates, a 10 percent rise in past FDI inflows stimulate further FDI inflows by 0.7 percent. The coefficient of regulatory quality is negatively signed and statistically significant at the 5 percent level. This is an indication of the presence of a weak regulatory environment in Nigeria, particularly poor formulation and implementation of policies and regulations that tend to diminish private enterprise and foreign direct investment. The result support the findings of Eregha (2014). The elasticity coefficient indicates that a 10 percent increase in regulatory quality, on the average, stimulate foreign direct investment in Nigeria by 2.1 percent.

Government effectiveness is negatively related to FDI and passes the significance test at the 5 percent level. Thus, quality of public service *e.g*., civil service and the degree of its independence as well as efficiency of policy formulation and implementation and government's credibility and commitment to policies tend to be extremely poor in Nigeria that it undermines FDI inflows. Thus, a greater level of government effectiveness and capacity is imperative to significantly drive FDI inflows in Nigeria. The finding confirms the findings of Nurt-tegin and Czap (2012), and Adelegan and Olabisi (2013). A 10 percent deterioration (improvement) in government effectiveness reduces (stimulates) FDI by 1.4 percent in Nigeria. Rule of law that represents the supremacy of the law, equality before the law, impartial and independent judiciary, civil liberties and human rights is negatively signed and significant at the 1 percent level. Thus, gross violation of the rule of law in Nigeria, particularly by the powers that-be, coupled with the impunity and immunity of some political class and few privilege Nigerians regarded as 'untouchables or sacred cows' who violate the law without qualms and engage in gross abuse of public office explain this outcome. In the same vein, security agencies and government brazenly carry out pronounced infractions of the fundamental rights of citizens. Added to this is the poor enforceability of contracts proceedings that tend to discourage FDI in Nigeria. The result buttresses the findings Ozekhome (2017). The elasticity coefficients indicates that a 10 percent rise in the violation of the tenets of the rule of law hampers FDI inflows by 1.1 percent.

The coefficient of political stability is positively signed (though not significant), due apparently to the nascent democracy in Nigeria. Invariably, the stability of the political system and clear absence of violence has a positive impact on FDI inflow, as it tends to offer favorable signal in terms of an investment-friendly environment. Apparently, in the absence of political stability, the environment becomes unfriendly to FDI drive, as the resulting uncertainty deter foreign direct investment. The current insecurity in Nigeria speaks volume to this. A 10 percent improvement in political stability generates increase in FDI inflows by 0.7 percent. The control of corruption variable is negatively signed but not significant. Since its-t-value exceeds unity, it can be inferred that corruption is negatively related to FDI inflows in Nigeria, but the effect is weak. The result is in line with the findings of Ozekhome (2017). Without doubt, corruption diverts and distort resources meant for economic growth and development. It weakens the productive system, crowds out efficient use of resources, discourages capital inflows and investment, as well as the incentive for hard work and productivity. The elasticity coefficient shows that a 10 percent reduction in the level of corruption stimulates FDI inflows by 0.2 percent.

The coefficient of infrastructure is positively related to FDI but fails the significance test. This is an indication of the poor level of infrastructure development in Nigeria. Thus, infrastructure development positively drives FDI inflows but the impact is weak in Nigeria. The result is in line with the findings of Ayanwu and Yamèogo (2015) and Mijiyawa (2015). A 10 percent improvement in the level of infrastructure development stimulates FDI by 1.9 percent. The coefficient of the exchange rate variable is positively signed and achieves statistical significance at the 10 percent level. Invariably, a competitive exchange rate that encourages greater production of export commodities, as in the case export-oriented FDI triggers greater FDI inflows in Nigeria. The finding supports the findings of Ayanwu (2012). A 10 percent depreciation/devaluation in the exchange rate stimulates export-oriented FDI inflows by 0.6 percent. Finally, the coefficient of inflation has the correct negative sign and is significant at the 10 percent level. Thus, macroeconomic instability, characterizing high and variable inflation has a destabilizing impact on foreign direct investment in Nigeria, as the environment becomes uncertain and highly risky, leading to low FDI inflows. The result corroborates the finding of Mijiyawa (2015).

Considering key post-diagnostic tests for the robustness, sensitivity and validity of results obtained, the Hansen-J-over-identification test, which serves to verify the validity of instruments, failed to reject the null hypothesis. The instruments used are, accordingly, valid and appropriate. The null hypothesis of no auto-correlation in the idiosyncratic disturbance term, using the Arellano- Bond test for AR(2) is also not rejected. The estimated model is therefore fit and consistent for structural and policy perspectives.

5.4. Robustness Check

Since the objective of the study is to investigate the effects of regulatory quality, government effectiveness and rule of law on FDI in Nigeria, it is imperative to apply alternative methodologies as check of robustness of the result from the GMM estimation. To this end, the Fully Modified Ordinary Least Squares (FMOLS) and the Dynamic OLS (DOLS) techniques are used as test of robustness. The results from alternative estimations are presented in Table 4.

Table 4. Alternative Estimation Results

Regressors	Dependent Variable: FDI	
	FMOLS	DOLS
FDI (-1)	0.012*	0.072*
RQ	-0.201**	-0.215**
GEFF	-0.083**	-0.707**
RL	-0.107**	-0.553**
PS	0.052	0.046
CORRUPT	-0.021	-0.030
INFR	0.152**	0.170**
EXR	0.053	0.051
INF	-0.021*	-0.048*
C	0.041	0.023
R^2	0.927	0.973
Adjusted R^2	0.920	0.944
Durbin-Watson	1.75	1.84
Long-run variance	1.04	

*Note: ****, ** & * indicate statistical significance at the 1%, 5% & 10% levels, respectively.*

Source: Author's estimation.

The results of the alternative estimations using the FMOLS and DOLS confirm the earlier results of the system-GMM of the negative and significant effects of regulatory quality, government effectiveness, the rule of law and control of corruption on FDI in Nigeria. Infrastructure development variable, as in earlier results, has a positive and significant impact on FDI. The exchange rate and political stability variables are positively related to FDI inflows but the effects are weak, while the inflation rate variable is negatively related to FDI.

5.5. Policy Implications of Findings.

A number of important policy implications can be deduced from the empirical findings. First, the combination of strong regulatory framework, government effectiveness, rule of law and control of corruption are imperative to driving and sustaining FDI inflows in Nigeria. By implication, government and policy makers need to create a friendly and enabling institutional environment that can stimulate inflows of FDI in Nigeria. This can be done through robust legal frameworks and regulatory quality, supported by a strong government capacity to implement policies (*i.e*., government effectiveness), as well as socio-political stability, particularly with respect to the capacity to curtail violence, armed conflicts and terrorism.

Second, infrastructure development is a significant FDI-driver. Government should therefore increase her investment on infrastructure, particularly on ICT, roads, railroads, air, markets, and education, amongst others. Third, a competitive exchange rate is important to driving FDI inflows in Nigeria. A strong, stable and efficient exchange rate management policy is thus, important in Nigeria.

Finally, the results indicate that a stable macroeconomic environment is critical to FDI inflows in Nigeria. Therefore, the implementation of policies to tame domestic inflationary pressures, as well stabilize the inflation rate so as to significantly reduce economic uncertainty that may deter foreign direct investment inflows Nigeria are imperative.

6. Conclusion and Policy Recommendations

This study has examined the effect of political, institutional and governance variables on foreign direct investment inflows in Nigeria over the period 1970-2020, using system the GMM estimation approach and the FMOLS and DOLS for robustness checks. The empirical findings revealed that institutional, political and governance variables matter to FDI in Nigeria. Findings from the study showed in particular, that Nigeria is experiencing poor governance and weak institutional and macroeconomic environment, and these tend to hamper foreign direct investment inflows. This was shown by the negative and statistically significant coefficients of the regulatory quality, government effectiveness, the rule of law, control of corruption and macroeconomic instability (proxied by inflation rate). Invariably, foreign direct investment inflows tend to be significantly influenced by strong institutional settings, good governance system and sound and stable macroeconomic and political environments. In line with these findings, there is need for the creation of a politically stable environment that will attract FDI to Nigeria. Consequently, government needs to strengthen the institutional framework in order to make the environment conducive and supportive to foreign private enterprise and FDI in Nigeria. Thus, the efficacy of the rule of law, in terms of the supremacy of the law, equality before the law and independence of the judiciary to fair, equitable and speedy delivery of justice, reflected in effectiveness and predictability of

the judiciary, as well as enforceability of contracts and secured property rights are important. Strong regulatory framework, government effectiveness, efficient bureaucratic institutions, political stability, control of corruption and stable macroeconomic environment that encourage foreign direct investment inflows are also imperative.

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