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# An Assessment of the Nexus between Quality of Governance and Domestic Private Capital Formation in Nigeria: An Application of Error Correction Model

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## Abstract:

We estimate the nexus between quality of governance and domestic private capital formation in Nigeria using annual data for the period of 1996 to 2019 sourced from WGIs and WDIs. The study adopts ADF and PP, Johansen cointegration test as well as the ECM estimates techniques. Finding of the study indicates stationary of the series at order of one that is I(1) and the presence of long run cointigration among the series under control as revealed by Johansen test. The result further revealed a positive significant long run relationship between control of corruption, political stability, regulator quality and voice and accountability with domestic private capital formation in the country. The ECM outcome account that 87% number of errors in the short run have been corrected in the long run. Therefore, we recommend that authorities in the country need to improve the quality of all the governance indicators especially government efficiency and voice and accountability in order to attract further domestic private capital formation.

Keywords: Governance, private, capital formation, ECM, Nigeria

## 1. Introduction

The role of private sector towards achieving sustainable long term economic growth remained indisputable in the present day literatures. In this regard, domestic private investment stimulates the growth rate of capital formation which can be channeled to productive sector and thereby leading to the expansion in productive capacity of an economy that can simply translate to sustainable economic growth (Akanbi, 2010; Abubakar & Bala, 2016 & Iheanu, 2019). Most of the submission relates significant correlation between domestic private capital formation and the quality of governance (see Matendechere, 2015; Waheed, 2015; Adenuga & Evbournwan, 2012 & Akanbi, 2010 among others).

Quality of governance helps to accelerate the growth rate of capital formation via the provision of enable political and administrative certainty that can add to investors' confidence and reduce uncertainty. Khan (2007) observed that the quality of governance is the major player of variation in economic performance between developed and developing economies. If the institutional is strong, the correlation with the growth of capital will be positive and/or negative if otherwise. According to Chauvet and Collier (2004) as cited in Iheonu (2019) countries with poor governance are associated with an average of 2.3 percent less of GDP than other countries with relative good governance. Domestic private investments in developing countries stand still to be volatile since 1970s and this is accords with the nature of institutional quality and macroeconomic policies to attract domestic investment potential.

Over the years in Nigerian however, the country economic system under gone a series of fluctuations resulting from political and economic instability that impede the growth rate of domestic private investment in the country. This instability of political and macroeconomic setting reflects in the socio-economic changes which affect the soundness and quality of governance and thereby creating major obstacles in decision making by the investors (Akanbi, 2010). In the country for instance, data shows a drop of 4.1 percent of gross domestic fixed capital formation as percentage of GDP in the pre debt period of 1973 to 1981 to 3 percent in the debt period of 1982 to 1994. This indicates acceleration in the growth rate of domestic investment by 7.4 percent during the structural adjustment program (Chete & Akpokodje, 2007). Since 1994 a declined in the trend of domestic investment persists, available figures revealed that in 2005 the rate of domestic investment as percentage of GDP worth \$24.9 billion and constantly declined to \$14.7 billion in 2016 and

gradually return to increase in 2018 and 2019 to \$ 19.0 billion and \$26.1 billion respectively (World Development Indicators, 2021).

There are relatively growing body of empirical literature among scholars across different countries and/or region but neglecting the role of governance in modeling domestic private investment (Ndiwulu and Manzongi, 2011; Waheed, 2015; Travis & Linhui 2014). These studies again differ in conclusions and/or findings, some revealed positive correlation between governance and private investment (Ajide, 2014, Obeng, Akoto and Acquah, 2014 & Nahousse, 2019) and others found negative correlation between the said variables (Ndiwulu and Manzongi, 2011& Dahunsi, 2019) these makes the literature inconclusive. In view of this, we set to examine the relationship between quality of governance and domestic private investment in Nigeria. To achieve our aims we classify the paper into five sections including this introduction as section one. Section two is the literature review and section three constitutes mythological and estimation approach. Section four is the presentation and discussion of the result and finally section five conclude the paper.

## 2. Empirical Evidences

In a number of empirical evidences using different approach in ascertaining the determinants of domestic private capital formation/investment is reviewed hereunder. To start with Shabbier, Shaheen and Qayyum (2020) ascertained the impact of political and economic factors on domestic private investment in Pakistan and submit that, political stability, gross domestic product, foreign direct investment, foreign debt and domestic credit to private sector had significant positive associated with domestic private investment in the country. In his study, Nahousse (2019) examined the role of institutional factors in determining private investment in Cote d'Ivoire. Finding revealed that, a reduction in investment risk and government stability had positive significant link with domestic private investment while corruption control stance with negative correlation with domestic private investment.

In the study of Adenuga and Evboumwan (2012) investigate the short run and long run dynamic impact of governance, investment and economic growth. The result from the estimates shows that, there exist long run relation between the variables of governance, private investment and economic growth and had positive significant relationship. Similarly, Travis and Linhui (2014) ascertained the impact of institutional factors on private productivity in manufacturing firms in China and the findings of OLS estimators indicate that, property right within the institution had positive significant to labor productivity but not to contracting institution. Waheed (2015), examined the determinant of domestic private investment in Pakistan using alternative hypothesis of political regime and other related conventional macroeconomic variables of GDP, interest rate, public expenditure, credit to private sector, real exchange rate and FDI and revealed the existence of democratic political regime in the country had significant positive association with domestic private investment in the long run. Again, Similarly, Attefah and Enning (2016) revealed that, trade openness, taxation and democracy had positive and significant association with private investment in the Ghana while public investment, credit to private sector, external debt are submitted to had negative and significant to deterred the growth rate of private investment in the country.

In another related submission by Obeng, Akoto and Acquah (2014) submit that governance and globalization had positive significant effects in attracting private investment in the Ghana whereas, exchange rate and trade openness stands as negative and significantly affected the growth rate of private investment. Moreover, Matendechere (2015), examined the determinants of private domestic investment in Kenya and found that, the coefficient of GDP and the dummy of election period (proxy as governance) suggests a positive and significant impact to domestic private investment while, real interest rate, broad money supply, public investment had negatively significant to such investment potential in the country.

Akanbi (2010) statistically indicates that, output, user cost of capital (proxy by interest rate) and financial development (availability of credit to private sectors) structural institution and stable socioeconomic environment had positive and significant long run impact in determining domestic private investment in the Nigeria. In their own study, Abbas, Ahmed and Husain (2019), found that political stability (measured by government nationalization policy), GDP growth rate, user cost of capital and the degree of openness are found to be the major determinants of domestic private investment in Pakistan both in short and long run.

In the study of Ajide (2014), examined the relationship between governance and stock market performance in Nigeria and shows that, corruption, government efficiency and regulatory quality had positive and significant association with all-share index. While the traditional macroeconomic variables of inflation rate, exchange rate and interest rate are negatively correlated to all-share index of stock market performance. Ojeka, Adegboye, Umukoro, and Dahunsi (2019), submit that corruption perception and institutional quality are negatively associated to firm's performance in Nigeria following the adaptation of correlation matrix and Principal Components Analysis (PCA) through system GMM technique.

In his own study, Adeji (2013), investigate the role of governance on domestic private investment in Nigeria and revealed that, in the long run degree of openness, inflation rate, saving real GDP, interest rate is strong determinant of private investment in Nigeria while governance indicators of political stability and voice and accountability had negatively significant associated with investment expansion. Ndiwulu and Manzongi (2011) examined the impact of uncertainty on investment behavior in Democratic Republic of Congo (DRC) and submits that, institutional and macroeconomic uncertainty (proxies to political index and inflation rate accordingly) had negative significant impact on private investment in the country.

## 3. Methodology and Estimation Approach

This study employed annual time series data for the period of 23 years for all the six governance indicators and domestic private capital formation (proxy by gross domestic fixed capital formation) that ranges from 1996 to 2019. The

data for the study were obtained from online data base of World Governance Indicators (WGIs) and World Development Indicators (WDIs). Following the work of Shabbier *et al*, 2020; Abbas, *et al*, 2019; Ojeka, *et al*, 2019; Waheed, 2015 and Ajide, 2013, the following neoclassical production function model is adopted and modified for the purpose of this study. DPCF = F(CC, GE, PS, RQ, RL, VA)......(1)

This implies from the equation one (1) that, domestic private capital formation (DPCF) is primarily a function of control of corruption (CC), government effectiveness (GE), political stability (PS), regulatory quality (RQ) and voice and accountability (VA). The simple linear production function however, can be further transform into simple linear econometric model thus:

 $DPCF = \beta_0 + \beta_1 CC + \beta_2 GE + \beta_3 PS + \beta_4 RQ + \beta_5 RL + \beta_6 VA + \mu_{it}$  .....(2) Where  $\beta_0$  is the coefficient of the constant parameter,  $\beta_s$  is the parameters of the independent variables control in the specified equation one (1), CC, GE, PS, RQ, RL, VA are the coefficient of parameters and  $\mu_{it}$  is the error term.

#### 3.1. Estimation Approach

The research investigates the time series characteristics of the data by employing Augmented Dickey-Fuller (ADF), as specified in Dickey and Fuller (1979), and Phillips-Perron (Phillips and Perron, 1988). For the ADF, the null hypothesis is that the variable being considered has a unit root against an alternative that it does not. The model for the ADF is as specified as:

$$\Delta y_t = \alpha + \beta T + \gamma y_{t-1} + \sum_{i=1}^p d_t \Delta y_{t-i} + \varepsilon_t$$
(3)

Where  $y_t$  is the variable being considered, T is the time trend (which is only allowed if significant), and  $\mathcal{E}_t$  is a

random error term. The Schwaz Information Criterion is used in selecting p (the lag-length) after testing for first and higher order serial correlation in the residuals. The lagged variables serve as correction mechanism for possible serial correlation. The Phillips-Perron (PP) test uses models similar to the Dickey-Fuller tests but with Newey and West (1994) nonparametric correction for correcting possible serial correlation rather than the lagged variables method employed in ADF. Also Bartlett Kernel is used as an automated bandwidth estimator for lag truncation of the Newey and West nonparametric correction (Andrew, 1991). The test statistics of the PP have the same distribution as those of Dickey-Fuller with critical levels as provided by MacKinnon (1996). The fact that two series are unit roots can be an indication of a long-run relationship between the two series.

#### 3.2. The Johansen Cointegration Specification

The finding that many time series may contain a unit root has spurred the development of the theory of nonstationary time series analysis. Engle and Granger (1987) pointed out that a linear combination of two or more nonstationary series may be stationary. If such a stationary linear combination exists, the nonstationary time series are said to be cointegrated. The stationary linear combination is called the cointegration equation and may be interpreted as a long run equilibrium relationship among the variables. The purpose of the cointegration test is to determine whether a group of nonstationary series is cointegrated or not. Consider a VAR of order p:

$$\Delta y_{t} = \prod y_{t-1} + \sum_{i=1}^{p-1} \Gamma_{i} y_{t-i} A_{p} y_{t-p} + B x_{t} + \varepsilon_{t}$$
(4)

Where  $y_t$  is a vector of nonstationary I(1) variables,  $x_t$  is a vector of deterministic variables, and  $\varepsilon_t$  is a vector of innovations. We may rewrite this VAR as:

$$\Delta y_{t} = \prod y_{t-1} + \sum_{i=1}^{p-1} \Gamma_{i} y_{t-i} A_{p} y_{t-p} + B x_{t} + \varepsilon_{t}$$
(5)

Where:

$$\prod = \sum_{i=1}^{p} A_{i} - 1, \quad \Gamma_{i} = -\sum_{j=i+1}^{p-1} A_{p} - Bx_{i} + \varepsilon_{i} \quad \dots$$
(6)

Granger's representation theorem asserts that if the coefficient matrix  $\prod$  has reduced rank r < k, then there exist k < r, matrices  $\alpha$  and  $\beta$  each with rank r such that  $\prod = \alpha \beta'$  and  $\beta' y_t$  is I(0). r is the number of cointegrating relations (the cointegrating rank) and each column of  $\beta$  is the cointegrating vector. Johansen's method is to estimate the  $\prod$  matrix from an unrestricted VAR and to test whether we can reject the restrictions implied by the reduced rank of  $\prod$ .

#### 3.3. Error Correction Model

To test for the long run relationships between the variables, the study apply the Engle-Granger (1987) two step cointegration tests which uses the residuals from the long run equation estimated with the nonstationary variables, and then test for the existence of unit root in the residual using the ADF regression and compare the value to an appropriate asymptotic null distribution. If two time series  $Y_t$  and  $X_t$  are both integrated of order d i.e. I(d), then, in general, any linear combination of the two series will also be I(d); that is, the residuals obtained on regressing  $Y_t$  on  $X_t$  are I(d). If,

however, there exists a vector b, such that the disturbance term from the regression ( $e_t = y_t - bx_t$ ) is of a lower order of

integration I(d-b), where b>0, then Engle and Granger (1987) defined  $Y_t$  and  $X_t$  as cointegrated of order (d,b). The economic interpretation of cointegration is that if two or more series are linked to form an equilibrium relationship spanning the long-run, then even though the series themselves may be nonstationary, they will move closely together over time and their difference will be stationary. Their long run relationship is the equilibrium to which the system converges over time, and the disturbance term  $e_t$  can be interpreted as the disequilibrium error or the distance that the system is

away from equilibrium at time t. In order to estimate the long run relationship between  $Y_t$  and  $X_t$  it is necessary to estimate the static model:

 $y_t = BX_t + e_t \dots \tag{7}$ 

Although, the equilibrium long run relationship can be estimated directly using (7), it is also important to consider the short-run dynamics of the variables under consideration, since the system may not always be in equilibrium. A simple dynamic model of short run adjustment can be written as:

 $yt = \alpha_0 + \gamma_0 X_t + \dots + \gamma_1 X_{t-1} + \alpha_1 y_{t-1} + \mu_t$ (8) Reparametrizing and rearranging (8) give the error correction formulation (ECM):

 $\Delta y_{t} = \gamma_{0} \Delta X_{t} - (1 - \alpha_{1}) [y_{t-1} - \beta_{0} - \beta_{1} X_{t-1}] + \mu e_{t} \dots (9)$ 

Where  $\beta_0$  and  $\beta_1$  are coefficients estimated from equation.

The ECM incorporates both short run and long-run effects, when equilibrium holds  $[y_{t-1} - \beta_0 - \beta_1 X_{t-1}] = 0$ . But in the short run, when disequilibrium exists, this term is non-zero and measures the distance that the system is away from equilibrium during time t. Thus  $(1 - \alpha_1)$  provides an estimate of the speed of adjustment of the variable  $y_t$ . For instance, if

 $[y_{t-1} - \beta_0 - \beta_1 X_{t-1}] < 0$ , that is,  $y_{t-1}$  has moved below its equilibrium level, since  $-(1 - \alpha_1)$  is negative, it will boost  $\Delta y_t$ , thereby forcing it back to its long run path. Engle and Granger show that two or more variables are cointegrated of order I(1,1) if and only if an ECM exists.

The first stage in the Engle-Granger framework is to test whether the variables are cointegrated. This is accomplished by testing the residuals of equation (1) for stationary. That is, the null hypothesis of  $e_t$  being I(1) is tested against the alternative of it being I(0). Although any unit root test can be used, Engle and Granger advocated the use of Augmented Dickey Fuller tests on the residuals. The second stage of the EG procedure comprises of estimating the short run ECM itself from the residuals of the regression of the first stage. That is, having obtained  $\varepsilon_{t-1} = y_{t-1} - \beta X_{t-1}$ , we estimate equation (9) to determine the dynamic structure of the system.

Then, expect that there is a long run relationship between fiscal deficit, government revenue, government expenditure and exchange rates. To test for the existence of cointegrating relationship, this will be done using the above ECM methodology. In the first step we estimate the coefficients by OLS and test for the existence of a unit root in the residuals. The analysis will also be supplemented by testing for the number of cointegrating relationships using the Johansen procedure. The deviations from the long run path would be captured at the second stage. When the coefficients of the lagged residual term from the first stage are negative, it suggests that the system comes back to the long run path or adjusts. Therefore, there exists an error correction mechanism. The parsimonious error correction mechanism (ECM) can be specified as:

 $\Delta DPCF = \beta_1 + \Delta CC_{t-s} + GE_{t-s} + \Delta PS_{t-s} + \Delta RQ_{t-s} + \Delta RL_{t-s} + \Delta VA_{t-s} + \mu_{it} \dots (10)$ Where the variables are defined in equation (1)

## 4. Results and Discussion

## 4.1. Result of Unit Root Test

We attempt to fulfill the precondition for time series analysis to check for the stationarity of the variables control in our model using Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) estimation procedure. Table 1 indicate that, all the series are integrated at order of one I(1) with the exception of government efficiency (GE) and voice and accountability (VA) that revealed to be at both level and first differencing. The finding however enables us to further ascertain the cointegration test as the null hypothesis of both ADF and PP were rejected at I(1).

Variable Series	Level Value	First Difference	Order of
	ADF PP	ADF PP	Integration
DPCF	-1.411 -1.448	-2.941*** -2.923***	l(1)
	(2) {3}	(2) {3}	
CC	-1.602 -1.448	-4.644* -4.645*	l(1)
	(2) {3}	(2) {3}	
GE	-3.914*** 3.914***	-6.747* -10.309*	I(0) & I(1)
	(2) {3}	(2) {3}	
PS	-1.701 -1.526	-1.334* -5.618*	l(1)
	(2) {3}	(2) {3}	
RL	-1.236 -1.236	-3.623** -5.618**	l(1)
	(2) {3}	(2) {3}	
RQ	-2.455 -2.455	-5.678* -5.759*	I(1)
	(2) {3}	(2) {3}	
VA	-2.788*** -2.846	-5.023* -5.021*	I(0) & I(1)
	(2) {3}	(2) {3}	

Table 1: Result of Unit Root Test Sourced: Author(S) Computation Using Eviews 8

Note that \*, \*\* and \*\*\* indicate significant at 1%, 5% and 10% and figures in parenthesis and bracket represent maximum lag selection criteria based on SIC and Newey-West automatic were selected using Bartlett Kemel for the Phillips-Perron (PP) test.

## 4.2. Result of Johansen Cointegration

After confirming the time series characteristics of the data set to be stationary at fist difference we further test cointegration relationship among the variables using Johansen cointegration estimation. The result of the trace test statistic as provided in Table 2 affirms that there exists long run relationship among all the series under consideration. This result similarly is confirmed by the Maximum-Eigen statistic as can be seen in Table 3 as indicated by the probability value of the statistics.

Hypothesized No. CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.
None *	0.988	316.25	125.62	0.0000*
At most 1 *	0.950	214.47	95.754	0.0000*
At most 2 *	0.898	145.41	69.819	0.0000*
At most 3 *	0.872	92.807	47.856	0.0000*
At most 4 *	0.612	45.580	29.797	0.0004*
At most 5 *	0.543	23.796	15.495	0.0022*
At most 6 *	0.222	5.7678	3.8415	0.0163**

Table 2: Result of Johansen Cointegration Test (Trace Statistic) Sourced: Author(s) Computation Using Eviews 8

Note That \* and \*\* Indicate the Rejection of the Null Hypothesis at 1% and 5% Significant Level

Hypothesized No. CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.
None *	0.988	101.78	46.231	0.0000*
At most 1 *	0.950	69.057	40.078	0.0000*
At most 2 *	0.898	52.606	33.877	0.0001*
At most 3 *	0.872	47.227	27.584	0.0001*
At most 4 *	0.612	21.784	21.132	0.0405**
At most 5 *	0.543	18.028	14.265	0.0121**
At most 6 *	0.222	5.7678	3.8415	0.0163**

Table 3: Johansen Cointegration Test (Max-Eigen Statistic) Sourced: Author(s) Computation Using Eviews 8 Note That \* and \*\* Indicate the Rejection of the Null Hypothesis at 1% and 5% Significant Level

## 4.3. Result of Long Run Relationship

Having established the presence of long run relation with the aid of Johansen cointegration approach among the series under investigation, we further present the result of long run impact in Table 4.

DPCF	CC	GE	PS	RQ	RL	VA
1.000000	-100.7707*	76.15430	-103.2032*	-51.38435*	31.88021	-93.76659*
	(11.1263)	(14.7707)	(3.35253)	(9.48213)	(14.7819)	(6.25734)

 Table 4: Result of Long Run Relationship (Normalize Equation)

 Sourced: Author(s) Computation Using Eviews 8

Note That \* Indicate 1% Significant at Level

On average (ceteris paribus) in the long run, the series of control of corruption (CC), political stability (PS), regulatory quality (RQ) and voice and accountability (VA) has a positive long impact with the growth rate of domestic private capital formation in Nigeria. The result further revealed that government efficiency (GE) and regulatory quality has a negative association with the said dependent variable. Therefore, the null hypothesis of no long run relationship is rejected against the alternative hypothesis at 1% significant level.

## 4.4. Result of Error Correction Model (ECM)

When cointegration exists among the variables under consideration from the outcome of Johansen test, construction of ECM model becomes imperative for modeling the dynamic relationship and the speed of adjustment from short run equilibrium to the long run equilibrium between quality of governance and domestic private capital formation. The greater the coefficient of the parameters the higher the speed of the model from short runs to the long run and vice versa. Table 5presents the result of the parsimonious private investment model (ECM<sub>t-1</sub>).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Variable	18.49060	15.20380	1.216182	0.2455
D(CC(-1))	-1.348435	10.31635	-0.130709	0.8980
D(GE(-3))	-13.77138***	7.005068	-1.965917	0.0710
D(PS(-1))	-8.602983	6.917684	-1.243622	0.2356
D(RQ(-2))	-14.34190	13.54027	-1.059203	0.3088
D(RL(-2))	25.46469*	7.683089	3.314382	0.0056
D(VA(-2))	0.872123***	0.423333	2.060133	0.0600
ECM(-1)	-0.872123***	0.423333	2.060133	0.0600
R <sup>2</sup> 0.599	Adj. R <sup>2</sup> 0.384	F-Statistics 2.78	F-Prob. 0.053	D/W Stat. 1.53

Table 5: Parsimonious Domestic Private Capital Formation Model

Source: Author(S) Computation Using Eviews 8

Note That \*, \*\* and \*\*\* Indicates 1%, 5% and 10% Significant Level

The result suggests that the ECM<sub>t-1</sub> is statistically significant at 10% level. It further revealed that, approximately 87% number of errors in the short run have been corrected in the long run. The table however suggests that a unit increase in control of corruption lagged in year 1 causes to a decrease in domestic private capital formation although is found insignificant. Similarly, a unit increase in government efficiency (GE) lagged in year 3 causes domestic private capital formation (DPCF) to have decrease evidence from the coefficient of the parameters and is significant at 10% level. However, an increase in political stability (PS) and regulatory quality (RQ) lagged in year 1 and 2 causes to a reduction in the said capital formation by -8.602983 and -14.34190 respectively. But rule of law and voice and accountability indicate that a unit increase in each of them lagged in 2 cause domestic capital formation to have increase by 25.46469 and 0.872123 respectively.

The determination R<sup>2</sup>, revealed 0.384(38%) of the variation of domestic Private capital formation is explained by the quality of governance indicators under the period of investigation. As a rule of thumb, if Durbin-Watson (D-W) statistic is less than 2.0, there is an indication of autocorrelation among the variables, but higher value of D-W suggests that autocorrelation is not much severe. From the above table, the D-W statistic is 1.53 that is; less than the required value for D-W statistic (1.53 is less than 2.0). By implication, the successive error terms on average are close to one another in value and therefore, there exist (with negligible concerned) an element of autocorrelation in the series. Finally, the ECM parsimonious model result proves F- statistic significant at 5% level.

We finally perform the estimation diagnostics through the applications of the Jacque- Bera test of normality and Ramsey test for the normality of the model. In the Jacque-Bera we test the null hypothesis that H<sub>0</sub>:  $\delta 1 = 0$  (the error term follows a normal distributed) against alternative H<sub>1</sub>:  $\delta 1 \neq 0$  (the error term does not follow a normal distributed) at  $\alpha = 5\%$  with 2 degrees of freedom.

• Decision Rule: we reject  $H_0$  if Jarque-Bera value greater than the chi square tabulated at 2 degree of freedom and accept  $H_1$  if otherwise. From the result obtained from Jarque-Bera (JB) Test of Normality, JB = 0.174 and chi-square tabulated is 5.99147. Therefore, since 25.111 >0.1734 at 2(0.05) level of significance, we accept  $H_0$  and conclude that the error term is normally distributed.

Finally, Ramsey test for model specification were employed and test the null hypothesis,  $H_0$ : the model is well specify against alternative  $H_1$ : there is misspecification of model.

Decision Rule: If F tabulated > F calculated, we accept H<sub>0</sub> F-statistics (1, 12) = 0.0170 F table = 2.57. Since the F tabulated is greater than the F calculated we accept H<sub>0</sub> and reject H<sub>1</sub>, we concluded that the model is good and well specified.

## 5. Summary and Conclusion

The study ascertains the nexus between quality of governance and domestic private capital formation in Nigeria using annual time series data for the period of 1996 to 2019. The study employed ADF and PP (for the unit root), Johansen cointegration as well as ECM model. Findings from the study revealed that both the series under consideration are stationary at order one that is I(1). The outcome from the Johansen cointegration further revealed the presence of long run cointegration among the variables under investigation. However the normalize coefficient suggest a positive significant long run correlation between control of corruption, political stability, regulatory quality and voice and accountability with domestic private capital formation in Nigeria. There exists also no evidence of significant long run impact between government efficiency, rule of law and the said capital formation.

The evidence reveled further that about 87% numbers of errors in the short run have been corrected in the long run as indicate by the ECM model. We conclude that quality of governance enhance the growth rate of domestic private capital formation required in Nigeria. Therefore, authorities in the country need to improve the quality of all the governance indicators especially government efficiency and voice and accountability in order to attract further domestic capital formation.

## 6. References

- i. Abbas, A., Ahmed, E. & Husain, F. (2019).Political and economic uncertainty and investment behavior in Pakistan. *Pakistan Development Review*, 55(3), 307-331
- ii. Abubakar, A. B., & Bala, A. J. (2016). Nexus between domestic investment, FDI and economic growth: evidence from India. *International Journal of Management, Accounting and Economics, 3*(3), 174-184.
- iii. Adenuga, A. O. & Evbuomwan, O. (2012). Dynamics of governance, investment and economic growth in Nigeria. *CBN Economic and Financial Review* 49(2), 109-132
- iv. Ajide, K. B. (2013). The role of governance on private investment in Nigeria: a preliminary analysis. *CBN Economic* and *Financial Review*, 51(1), 93-132
- v. Ajide, K. B. (2014). Quality of governance and stock market performance: the Nigerian experience. *Journal of Economics and Development Studies*,2(2), 501-522
- vi. Akanbi, O. A. (2010). *Role of governance in explaining domestic investment in Nigeria*. Department of Economics, University of Pretoria, Working Paper No. 168, South Africa
- vii. Andrew, F. (1991).Critical theory of technology: an overview. *Tailoring Biotechnologies*, 1(1), 47-64.
- viii. Attefah, E. K. & Enning, D. K. (2016). An OLS approach to modeling the determinants of private investment in Ghana. International Journal of Academic Research in Business and Social Sciences, 6(2), 201-227
- ix. Chauvet, L. & Collier, P. (2004). Development effectiveness in fragile states: spillovers and turnarounds. *Centre for the Study of African Economies*. Department of Economics, Oxford University (Mimeo)
- x. Chete, M. & Akpokodje, B. (2007). Macroeconomic determinants of domestic private investment in Nigeria: an empirical exploration. *CBN Economic and Financial Review*, 35(1), 43-57
- xi. Dickeys, D.A. & Fuller W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 1(74), 427-431.
- xii. Engle, R. F. & Granger, C. W. (1987). Cointegration and error correction representation: estimation and testing. *Econometrica*, 55(43), 35-52.
- xiii. Iheonu, C. O. (2019). *Governance and domestic private investment in Africa*.an African governance and development institute, Working Paper No. WP/19/001.Yaounde.
- xiv. Khan, M. (2007). Governance, economic growth and development since the 1960s. DESA Working Paper 54.
- xv. MacKinnon, J. G. (1996). Numerical distribution functions for unit root and cointegration tests. *Journal of Applied Econometrics*, 5(34), 601-618.
- xvi. Matendachere, O. S. (2015). *Analysis of private domestic investment in Kenya.* Unpublished Msc. Dissertation Submitted to Department of Applied Economics, Kenyatta University, Kenya
- *xvii.* Nahousse, D. (2019). Government stability, corruption, investment conditions and private investment in Cote d'Ivoire: ARDL approach. *Modern Economy*, 10, 1812-1828.
- xviii. Ndwulu, X. B. & Manzongi, J. P. (2011). Examine the impact of uncertainty on investment in democratic republic of Congo. *AERC Research Paper* No. 226
- xix. Newey, W. & West, K. (1994). Automatic lag selection in covariance matrix estimation. *Review of Economic Studies*, 61(56), 631-652.
- xx. Obeng, S. K., Akoto, L. & Acquah, F. B. (2014). Democracy and Private Investment in Ghana. MPRA Paper No. 72131
- *xxi.* Ojeka, S., Adegboye, A., Adegboye K., Umukoro, O. & Dahunsi, O. (2019). Corruption, institutional quality and Performance of listed companies in Nigeria. *Heliyon*, 5, 1-10*https://doi.org/10.1016/j.heliyon.2019.e02569*
- xxii. Phillips, P. C. & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, 75(12), 335-346.
- xxiii. Travis, N. G. & Linhui, Y. U. (2014). Which types of institutions hinders productivity among private manufacturing firms in Ckhina. *China Economic Review*, 31 17-31
- xxiv. Waheed, A. (2015). Determinants of domestic private investment: a test of alternative hypothesis for Pakistan. International Journal of Research in Business and Social Science, 4(20), 35-43