

## Impact of Institutional Quality on Economic Growth in Nigeria

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### Abstract

*This study examined the influence of institutional quality on the development of Nigerian economy in the 21st century using annual time series data covering 2001 to 2019. The data for the variables were checked against unit root problems using ADF unit root test and all the variables were either integrated of I(1) or I(0). Consequently, the Pesaran, Shin, and Smith (PSS) Bounds test was employed and it confirmed the existence of a long-run relationship among the variables of the study. The Auto-Regressive Distributed Lag (ARDL) model was utilized and the study found that Institutional Quality (INSQ) exerts a significant negative influence on economic growth. The error correction term was negative and statistically significant implying that the economic growth was capable of reverting to the long-run equilibrium path slowly in event of any disequilibrium. The study recommends improvement in the quality of the country's institutions by instituting a strong fight against corruption, increased accountability and freedom of expression, improved regulatory authority, and increased government effectiveness through improved leadership selection processes.*

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**JEL Classification:** F43, O43, O47, P48

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### 1. Introduction

The quality of institutions in developing countries has taken central in empirical discourse. Institutional quality entails the rule of law, individual rights, as well as high-quality government regulation and services. It is the extent to which a country's institutions facilitate international transactions, and provide for their security and predictability. To Bruinshoofd (2016), it captures laws, individual rights and high quality government regulation and services and that it reinforces economic development. The importance of the quality of institutions in supporting investment and economic growth cannot be overemphasized. As a result, the quality of institutions is critical in ensuring the regulation and implementation of political, social, and economic activities around the world, as well as proper monitoring. Viable institutions foster social cohesion and macroeconomic stability, thereby increase investment and growth (Easterly,

Ritzen & Woolcock, 2006). Evidence suggests that countries with strong institutions encourage a strong legal framework for efficient fund mobilization and allocation, resulting in a less risky business environment (Abubakar, 2020; Law & Azamn-Saini, 2008). Other studies have also emphasized the importance of strong institutional quality in ensuring long-term growth and development (Thorbecke, 2013; Iheonu, Ihedimma, & Onwuanaku, 2017; Parks, Buntaine & Buch, 2017).

The basic impediments to Latin American and African countries in achieving economic growth are uncertainty and manipulation, whitespace in the judicial system, corruption, bribery, tax evasion, ill-defined property rights, and the presence of inefficient institutions such as non-growth enhancing policies as ill-conceived arrangements that cause nations to be unattractive to investors (Luiz, 2009; Fosu, Betes & Hoeffler, 2006, Balamoline, 2005; Birdsall 2007; Charnock, 2009). For instance, Asian economies have achieved economic development due to the quality of institutions, but African nations, such as Nigeria and most others, are plagued by high unemployment and poverty. To this effect, governments have shifted attention or focus more on advancing the quality of institutions as that of developed countries (Rodrik, 2008). Generally, despite the attention in enhancing the quality of institutions in developing countries and Nigeria inclusive, there is yet a consensus on whether these improvements are effective (Andrews, 2013). Consequently, countries with weak institutions find it difficult to evolve rapidly enough to enjoy economic growth and development (Abubakar, 2020). This is justified as institutions are seen as part of a country's productive capability frontier. Nigeria has witnessed worsening quality of institutions over time. The indices for rule of law, government effectiveness, control of corruption, regulatory quality, voice and accountability, and political stability have been trending negative throughout the 21<sup>st</sup> century (World Bank, 2021). This has characterized most of the developing economies alike.

In order to enhance the quality of institutions in Nigeria, the government established the Corrupt Practices Investigation Bureau, the Code of Conduct Bureau, and Public Complaints Commission. Further attempts were made by instituting institutions that can ensure prudence and accountability in resource utilization in both public and private sectors towards sustainable economic growth. Some of these institutions include Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices Commission (ICPC), the Nigerian Financial Intelligence Unit (NFIU), Fiscal Responsibility Commission

(FRC), among others. Given the level of institutional deficiencies noted above and the negative trending pattern over time, it has become imperative to investigate the impact of institutional quality on economic growth in Nigeria, particularly those charged with ensuring efficient management of scarce resources that are still operating at a low ebb due to a lack of political will or weak legal backing. Available literature have shown that institutions are viewed as a basic requirement for economic success and long term progress and that institutional quality consists of a broad range of factors, some of which are hard to measure (Bruinshoofd, 2016). However, the World Bank constructed institutional quality index from six World Bank Governance Indicators.

Given Nigeria's declining institutional quality, the country's economic growth has become highly precarious. More importantly, while there is widespread agreement that the quality of institutions and economic growth are inextricably related, the relevant economic literature is divided on the exact nature of this relationship (Bruinshoofd, 2016). Even though the common consensus is that institutional quality is more likely to promote economic growth than the reverse direction of causality, it must be re-examined empirically, hence the need for this study. Consequently, the study is set to examine the effect of institutional quality on economic growth in Nigeria.

The remaining sections of this paper are organized as follows; section 2 is devoted to the literature review. The methodology is presented in section 3 while section 4 presents, discusses, and interprets the empirical results. Section 5 offers conclusion and policy recommendations.

## **2. Review of Related Literature**

This study is anchored on the Solow-Swan neoclassical growth theory and the institutional theory. According to the Solow-Swan theory, technological change, labour, and capital are key factors in determining economic output (Solow, 1956; Swan, 1956). Mankiw, Romer, and Weil (1992) expanded on this theory by including the accumulation of human capital. This is no longer the case, as there are several driving factors to sustainable growth, one of which is institutional quality that has taken centre stage among other determinants. According to the institutional quality theory, the institutional framework within which economic agents interact with one another in an economy influences economic development (Alexiou, Tsaliki & Osman, 2014). According to them, the 'rules of the game' in a society are defined by the prevailing explicit and implicit behavioural norms, as

well as their ability to create appropriate incentives for desirable economic behaviour (Rodrik & Subramanian, 2003).

Some studies investigated the impact of institutional quality on investment and its relationship to economic growth. For example, in trying to understand the role of institutional quality in the nexus between FDI and economic growth, Jilenga and Helian (2017) used the fixed effect and GMM models for the analysis on a sample of 36 countries from 2001 to 2015. The study found that institutional quality has a positive influence on economic growth even as foreign direct investment exerts negative influence on economic growth and development. In understanding the relationship between institutional quality and FDI, the study showed that institutional quality increases the spill-over effect from FDI and thus matters for economic growth. Peres, Ameer, and Xu (2018) categorized countries into developed and developing in assessing the influence of institutional quality on investment. The study found that institutional quality has positively and significantly impacted on investment (particularly, FDI) in developed countries. Further research found that institutional quality has a favourable and considerable impact on economic growth in developed countries, whereas it has a negligible impact in developing economies. Bon (2019) also investigated the role of institutional quality on the public investment-growth relationship using a balanced panel data of 52 provinces in Vietnam from 2005 to 2014 through the estimation method of difference panel Generalized Method of Moments (GMM). The study found that public investment and institutional quality significantly promote economic growth and development.

Using panel data for low, lower-middle, upper-middle, and high-income countries spanning 1996 to 2016, Sabir, Rafique, and Abbas (2019) examined the impact of institutional quality on FDI inflows using the system Generalized Method of Moments (GMM). In all groupings of nations, the study indicated that institutional quality has a significant impact on FDI. Similarly, Akpo and Hassan (2015) examined the institutional influence as a determinant of Foreign Direct Investment (FDI) focusing on Nigeria using the Autoregressive Distributed Lag (ARDL) cointegration technique. The study also found that institutional qualities utilize long-run sway in determining FDI inflows and it is seen an essential factor in determining FDI in Nigeria. Using Ordinary Least Squares (OLS) technique, Jurčić, Franc and Barišić (2020) also examined the impact of institutional quality on foreign direct investment inflow with evidence from Croatia covering 1996 to 2017. The study found that the institutional quality variables (political stability,

regulatory quality, the rule of law, government effectiveness, and control of corruption) were not found as important determinants of the FDI inflow in Croatia. Other scholars such as Chaib and Siham (2014), Fakher (2014), Ameer, Sohag, Xu and Halwan (2020) and Minh (2019) also examined the relationship and found the positive influence of institutional quality on foreign direct investment.

Some studies examine the relationship between institutional quality and economic growth either using time series data or panel data. Some of the panel analysis are: Radzeviča and Bulderberga (2018) used the system Generalized Method of Moments to analyze the impact of institutional drivers on economic growth in a panel of 113 nations from 2006 to 2016. The study discovered that institutional quality has a significant positive impact on economic growth. Other panel studies include, Hassan, Meyer and Kot (2019) who investigated the role of institutional quality in the oil wealth–economic growth nexus for 35 oil-exporting developing countries from 1984 to 2016 using panel Autoregressive Distributed Lag (ARDL) with a dynamic fixed effect estimator. The study found a contingent effect of oil wealth on economic growth and that institutional quality mitigate the negative effect of oil wealth on economic growth in the long run, while it enhances the positive effect of oil wealth on economic growth in the short-run. Kebede and Takyii (2017) also examined the causal relationship between institutional quality and economic growth in Sub-Saharan Africa from 1996 to 2014 using system GMM technique. The study found that there is a long-run relationship between institutional quality and economic growth and that institutional quality, trade openness, financial development, and debt positively affect economic growth. Sani, Said, Ismail and Mazlan (2019) used the Generalised Method of Moments (GMM) approach to assess the impact of public debt and institutional quality on economic growth in 46 Sub-Saharan African nations from 2000 to 2014. The empirical result showed that institutional quality has both a direct and indirect impact on economic growth. Using a related panel structure but different technique, Lahore, Qureshi, and Nadeem (2015) investigated the impact of institutional quality on economic growth using panel data from 1990 to 2013 for 13 Asian emerging economies. Findings from Panel ARDL showed that institutional quality has a positive impact on economic growth. Yushi and Borojo (2018) also looked at the impact of institutional quality, border and transportation efficiency, as well as physical and communication infrastructure, on overall and intra-Africa trade for 44 African nations and their 173 trading partners from 2000 to 2014. According to the study, the marginal influence of institutional quality,

physical infrastructure, and communication infrastructure on trade flow appears to be growing as GDP per capita rises. These study were able to assess the relationship between institutional quality and economic growth, however, the studies were not in the context of the Nigerian economy that has distinctive features.

More so, using panel data, Nguyen, Su and Nguyen (2018) investigated the impact of institutional quality on economic growth for 29 emerging economies from 2002 to 2015 by employing System Generalized Method of Moments (SGMM) estimator. The study found a significant positive impact of institutional quality on economic growth but it impedes the positive effects of Foreign Direct Investment (FDI). Assessing the effect of institutional quality on economic growth in developed and developing countries, Helgason (2010) used a pooled regression model and a fixed-effects model. The results indicated that institutional quality has a significant and positive relationship with growth in both developed and developing countries. Recently, Glawe and Wagner (2019) examined the effect of institutional quality and human capital on economic growth using 35 European countries from 1996 to 2014. Results from system GMM estimation showed that institutional quality is a key driver of the per capita income growth in Europe. The study also considered the disaggregated analysis of the effects of the institutional quality indices and found that political stability, rule of law, regulatory quality, and control of corruption appeared to be particularly important, whereas voice and accountability as well as government effectiveness were less relevant. Arshad (2019) also examined the role of institutional quality on economic growth using 104 countries and applied GMM estimation method. Both FDI inflows and institutional quality are linked to higher economic growth, according to the study.

Using time series data for Nigeria, Abubakar (2020) investigated the effect of institutional quality on economic growth from 1979 to 2018. The study used Johansen Cointegration and Ordinary Least Square (OLS) approach and the results showed that economic growth responds positively and significantly to institutional quality (contract intensive money), while effective governance index exerts positive but insignificant influence on the growth of the economy. However, this current study examines the relationship using asymmetric approach while considering the composite index of institutional quality on economic growth in the country. As a result, a novel and non-linear approach is needed to re-examine the impact of institutional quality on economic growth in Nigeria.

### **3. Research Methodology**

#### **3.1 Theoretical Model**

The empirical model for this study is based on the theoretical model suggested by Solow (1956) growth model, and Mankiw et al (1992) with modifications. Similarly, the endogenous growth model purported by Lucas (1988) indicates that investment in human capital, innovation, and knowledge is a significant contributor to economic growth. The basic neoclassical production function can be written as:

$$Y = f(K, L) \quad (1)$$

Here, Y denotes the level of output, K is the capital formation and L is the labour force. Human capital is also considered to be the major determinant of economic growth in endogenous growth theories advanced by Romer (1986, 1990) and Lucas (1988) and it is the key extension of the neoclassical model. Human capital (H) is incorporated into the fundamental neoclassical production function, and the model becomes:

$$Y = f(K, L, H) \quad (2)$$

Standard aggregate function can be modified as suggested by Feder (1983), Grossman and Helpman (1990) and Ram (1996). Thus, introducing the institutional quality, the model can be specified as:

$$Y = f(K, L, H, INSQ) \quad (3)$$

The study decomposed capital into domestic investment and foreign direct investment, while labour force for labour. Given that human capital development leads to effective labour force, the study considered labour force as a proxy for Labour (L) and human capital (H). The model can be defined as follows:

$$RGDP = f(INSQ, DOM, FDI, LAB) \quad (4)$$

Where RGDP is for real Gross Domestic Product growth rate, INSQ stands for institutional quality, and DOM stands for domestic investment, FDI is foreign direct investment, and LAB is labour force.

$$RGDP_t = \beta_0 + \beta_1 INSQ_t + \beta_2 DOM_t + \beta_3 FDI_t + \beta_4 LAB_t + \varepsilon_t \quad (5)$$

Where  $\beta_1 - \beta_4$  are parameters to be estimated,  $\beta_0$  is the intercept and  $\varepsilon$  is the error term

### 3.2 Method of Data Analysis

This study utilized Autoregressive Distributed Lag (ARDL) approach. It is indeed worth noting that ARDL has a lot of advantages when it comes to handling cointegration because of its inherent robustness. When some variables are  $I(0)$ , and others are  $I(1)$ , ARDL approach is most appropriate. This is because, the traditional cointegration technique of Johansen (1995) and some others, typically failed since all variables need to have identical orders of integration, usually  $I(1)$ . This necessitates pre-testing each of the variables in question for the presence of a unit root. This study therefore adopts the ADF unit root technique to test for the presence or otherwise of unit root in each of the variables under consideration. Besides, the Pesaran, Shin, and Smith (2001) Bounds test for cointegration is not subject to such limitations when series have mixed order of integration. The ARDL method therefore works when all or some variables are  $I(0)$ ,  $I(1)$  or even mutually cointegrated as noted earlier. A typical generalized ARDL  $(p, q, q, \dots, q)$  model is specified as:

$$y_t = \sum_{j=1}^p \delta_j y_{t-j} + \sum_{j=0}^q \beta_j' X_{t-j} + \varepsilon_t \quad (6)$$

Where  $y_t$  is the dependent variable,  $(X_t)'$  is a  $k \times 1$  vector that are allowed to be purely  $I(0)$  or  $I(1)$  or co-integrated;  $\delta_j$  is the coefficient of the lagged dependent variable called scalar;  $\beta_j$  are the  $k \times 1$  coefficient vectors;  $p, q$  are optimal lag orders;  $\varepsilon_t$  is the stochastic error term. The reparameterised ARDL  $(p, q, q, \dots, q)$  error correction model is specified as:

$$\Delta y_t = \theta \left[ y_{t-1} - \lambda' X_t \right] + \sum_{j=1}^{p-1} \xi_j \Delta y_{t-j} + \sum_{j=0}^{q-1} \beta_j' \Delta X_{t-j} + \varepsilon_t \quad (7)$$

Where  $\theta = -(1 - \delta)$ , group specific speed of adjustment coefficient (expected that  $\theta < 0$ ),  $\lambda'$  = vector of long-run relationships,  $ECT = \left[ y_{t-1} - \lambda' X_t \right]$ , the error correction term,  $\xi_j, \beta_j'$  are the short-run dynamic coefficients. The ARDL conditional Error Correction Form and the Bounds Test can be specified as:

$$\Delta y_t = \alpha_0 + \alpha_1 t - \psi(1)EC_{t-1} + \left( \psi^*(L)\Delta y_{t-1} + \sum_{j=1}^k \beta_j(L)\Delta x_{j,t-1} \right) \quad (8)$$

From equation (8), it is clear that the error correction term, typically denoted as  $EC_t$ , is also the cointegrating relationship when  $y_t$  and  $x_{1,t}, \dots, x_{k,t}$  are cointegrated. Thus, the dynamic equilibrium for the main model in equation (5) can be specified as:

$$RGDP_t = \sum_{j=1}^p \delta RGDP_{t-j} + \sum_{j=0}^q \alpha_1 INSQ_{t-j} + \sum_{j=0}^q \alpha_2 DOM_{t-j} + \sum_{j=0}^q \alpha_3 FDI_{t-j} + \sum_{j=0}^q \alpha_4 LAB_{t-j} + \varepsilon_t \quad (9)$$

And the error correction model of the equation (9) is written as:

$$\begin{aligned} \Delta RGDP_t = & \theta [RGDP_{t-1} - \alpha_1 INSQ_t - \alpha_2 DOM_t - \alpha_3 FDI_t - \alpha_4 LAB_t] \\ & + \sum_{j=1}^{p-1} \delta_j \Delta RGDP_{t-j} + \sum_{j=0}^{q-1} \alpha_1 \Delta INSQ_{t-j} + \sum_{j=0}^{q-1} \alpha_2 \Delta DOM_{t-j} + \sum_{j=0}^{q-1} \alpha_3 \Delta FDI_{t-j} + \sum_{j=0}^{q-1} \alpha_4 \Delta LAB_{t-j} + \varepsilon_t \end{aligned} \quad (10)$$

Where  $\theta$  is the speed of adjustment coefficient or measures how long it takes the system to converge to its long-run equilibrium and  $\varepsilon_t$  is the error term.

### **3.3 Data and Data Measurements**

The data utilized in this study include data on economic growth measured as the rate of change of real Gross Domestic Product (GDP), institutional quality index (-2.5 weak; 2.5 strong), domestic investment as a percent of GDP, foreign direct investment as a percent of GDP, and labour force in millions of people. The data spans 2001 to 2019. All the data on values were sourced from World Bank. Six different institutional quality measures were used to calculate the institution's quality. These include: rule of law index, government effectiveness index, control of corruption, regulatory quality index, voice and accountability index and political stability index. Available literatures have shown that institutional quality consists of a broad range of factors, some of which are hard to measure (Bruinshoofd, 2016). However, the World Bank constructed institutional quality index from six World Bank Governance Indicators. The World Bank Global Governance Indicators (WGI) have been used by several scholars such as Easterly and Levine (2003), IMF (2003), Kuncic (2013), and Fabro and Aixalá (2013). This study also utilises the World Bank's institutional quality index, which include political stability, voice and accountability and lack of violence, rule of

law, regulatory quality, government effectiveness, and corruption control as noted earlier. The variables used and their measurements are summarized in Table 1.

**Table 1: Variable Description and Measurements**

| <b>Label</b> | <b>Variable</b>             | <b>Definition</b>   | <b>Measurement</b> | <b>Source</b>  |
|--------------|-----------------------------|---|--------------------|----------------|
| RGDP         | Economic Growth/Development | Annual percentage growth rate of GDP at market prices based on constant local currency  | Percentage         | The World Bank |
| INSQ         | Institutional Quality       | This refers to the basic tenets that guide the operations of the whole institutions in the quest to maximize wealth   | Index              | Computed       |
| DOM          | Domestic Investment         | This refers to gross domestic investment as a percent of GDP.   | Percentage         | The World Bank |
| FDI          | Foreign Direct Investment   | Foreign direct investment (FDI) refers to net inflows of funds used to acquire a long-term management interest in a company that operates in a country other than the investor's. | Percentage         | The World Bank |
| LAB          | Labour Force                | This comprises of people ages 15 and older who supply labor for the production of goods and services during a specified period  | Million People     | The World Bank |

**Source: Authors' Compilation**

## **4. Results and Discussions**

### **4.1 Descriptive statistics**

The result of the descriptive statistics for the variables is presented in Table 2.

**Table 2: Descriptive Statistics**

| <b>Tools</b> | <b>RGDP</b> | <b>INSQ</b> | <b>DOM</b> | <b>FDI</b> | <b>LAB</b> |
|--------------|-------------|-------------|------------|------------|------------|
| Mean         | 5.697       | -1.131      | 21.165     | 1.567      | 51.287     |
| Maximum      | 15.33       | -1.025      | 30.93      | 2.93       | 59.87      |
| Minimum      | -1.62       | -1.265      | 14.9       | 0.07       | 42.38      |
| Std. Dev.    | 3.639       | 0.074       | 5.597      | 0.788      | 5.112      |
| Skewness     | 0.398       | -0.142      | 0.343      | -0.052     | -0.23      |
| Kurtosis     | 4.252       | 1.924       | 1.622      | 2.223      | 2.037      |
| Jarque-Bera  | 1.741       | 0.98        | 1.877      | 0.487      | 0.901      |
| Probability  | 0.419       | 0.613       | 0.391      | 0.784      | 0.637      |
| Sum          | 108.24      | -21.48      | 402.14     | 29.77      | 974.46     |
| Sum Sq. Dev. | 238.406     | 0.0989      | 563.803    | 11.171     | 470.412    |
| Observations | 19          | 19          | 19         | 19         | 19         |

Source: Extracts from E-views 10 Output

From the descriptive results in Table 2, it shows that economic growth in Nigeria averaged 5.697% from 2001 to 2019. Others variables averaged 21.165% for domestic investment, 1.567% for foreign direct investment, and -1.131 for institutional quality that ranges from -2.5 (weak) to 2.5 (strong). This means that the institutional quality in Nigeria over the study period is weak. More so, the average rate of economic growth was relatively low. This is further evidenced by the maximum growth rate of 15.33% in 2002, with no other year recording a growth rate in the double digits. Labour force averaged 51.287 million people. The negative maximum and minimum values of -1.025 and -1.265, respectively, show that there has never been any high institutional quality recorded in Nigeria, as indicated by the outcomes of institutional quality. All other variables exhibited the distribution that is platykurtic except economic growth that exhibited a leptokurtic pattern. The data distribution for economic growth and domestic investment are positively skewed implying that data are tilted towards large values, while the data distribution for institutional quality, foreign direct investment, and labour force are negatively skewed implying that data are tilted towards small values.

The data for the variables that were used in forming the institutional index are depicted on the graph in Figure 1.

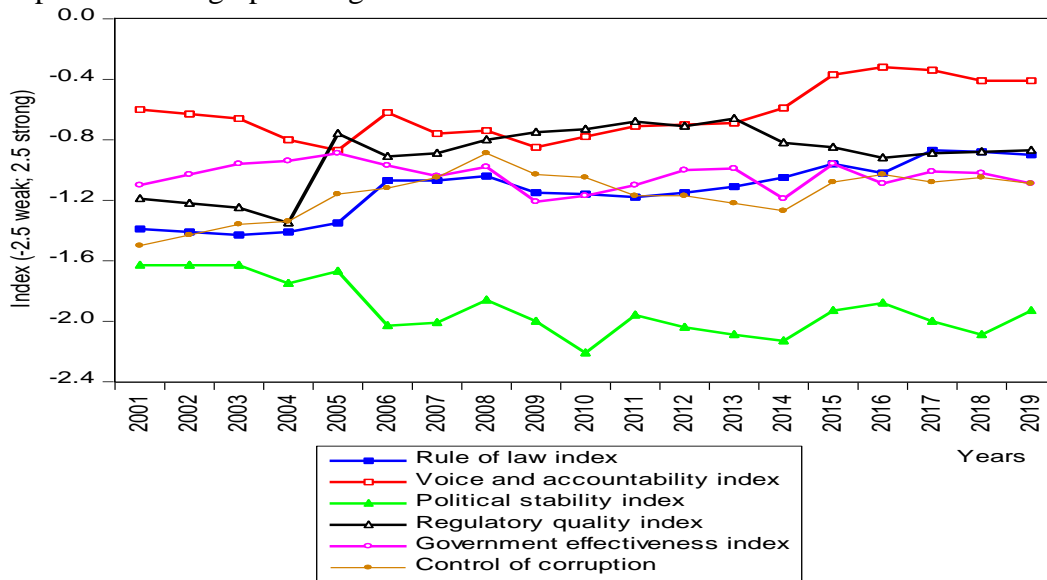


Figure 1: Trends of Institutional Quality Indices

The trends show that all the institutional quality indices recorded negative indices throughout the period under study. The implication is that none of the indices of institutional quality has shown positive trend which means that the quality of institutions in Nigeria are weak. The political stability index became weaker over time, while other institutional indices such as regulatory quality, government effectiveness, voice and accountability, rule of law, and control of corruption improved slightly over time with fluctuations.

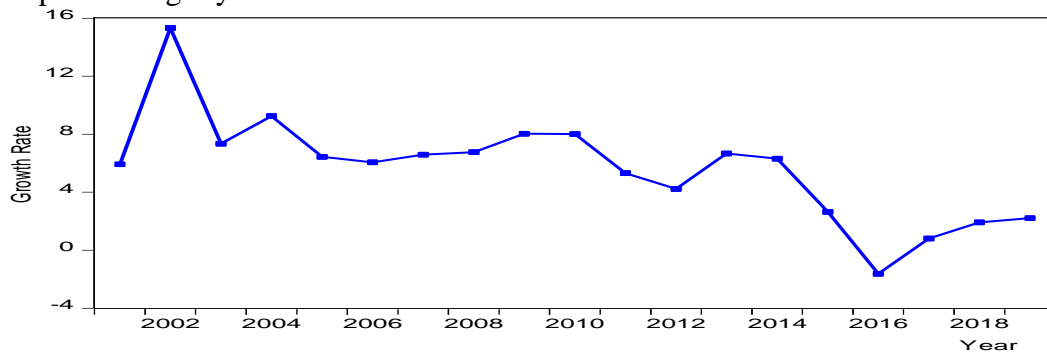


Figure 2: Trend of Economic Growth in Nigeria

The trend of real GDP growth rate (proxied economic growth) shows that it has exhibited a downward trend pattern with an initial peak in 2002 which was subsequently followed by declining levels of economic growth in Nigeria.

**4.2 Summary of the Unit Root Tests Results**

The Augmented Dickey-Fuller (ADF) test was used to determine whether the series are stationary and exhibit random walk in tandem with the stochastic process. Table 3 summarizes the findings.

Table 3: Unit Root Test Results

| Variables | ADF Statistics       |                      |                   |                   |                    | Order of Integration |
|-----------|----------------------|----------------------|-------------------|-------------------|--------------------|----------------------|
|           | At level             | First Difference     | 1% Critical Level | 5% Critical Level | 10% Critical Level |                      |
| RGDP      | -5.069802<br>0.0040* |                      | -4.667883         | -3.7332           | -3.310349          | I(0)                 |
| INSQ      | -3.547708<br>0.0642  | -5.897414<br>0.0010* | -4.616209         | -3.710482         | -3.297799          | I(1)                 |
| DOM       | 0.056945<br>0.9936   | -4.394644<br>0.0149* | -4.616209         | -3.710482         | -3.297799          | I(1)                 |
| FDI       | -2.734155<br>0.2359  | -6.831510<br>0.0002* | -4.616209         | -3.710482         | -3.297799          | I(1)                 |
| LAB       | -2.531208<br>0.3110  | -6.168134<br>0.0012* | -4.616209         | -3.710482         | -3.297799          | I(1)                 |

Source: Extracts from Using E-views 10 Output

Note: In ADF unit root test, the asterisk (\*) indicates that the variable is stationary otherwise, it is not at a 5% level of significance.

With the exception of economic growth, which is stationary at level, the ADF unit root test shows that all other series are stationary after the first difference at the 5% level of significance. It then shows that the variables have no unit root problems, and the ARDL model can be applied having combination of I(0) and I(1)

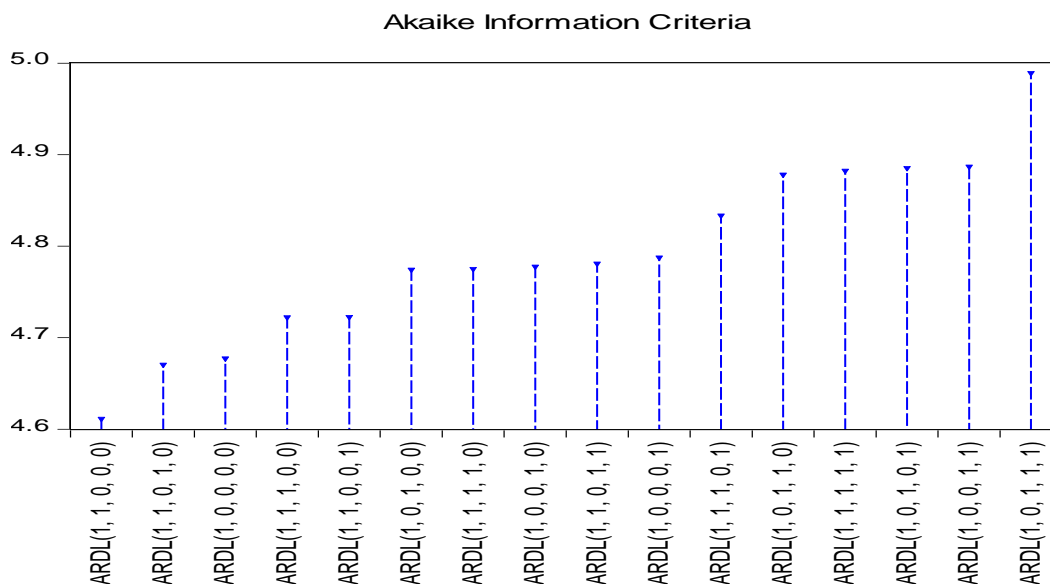


Figure 3: ARDL Lag Selection Criteria

### 4.3 The Bound Test Long Run Results

Bounds test was used to determine whether the variables in the models have a long-run relationship. The bounds test requires that the F-statistic value be greater than the upper bound critical values at the chosen level of significance; otherwise, no long-run relationship exists. Table 4 summarizes the findings.

Table 4: Bounds Test Results

| Level of Significance | F-Statistic Value (K) | Lower Bound I(0) | Upper Bound I(1) |
|-----------------------|-----------------------|------------------|------------------|
| 10%                   |                       | 2.45             | 3.52             |
| 5%                    |                       | 2.86             | 4.01             |
| 2.5%                  | 6.79 (4)              | 3.25             | 4.49             |
| 1%                    |                       | 3.74             | 5.06             |

Source: Extracts from Using E-views 10 Output

Table 4 shows the F-statistic value of 6.79 is greater than the upper bounds value of 4.01 at 5% level of significance for the ARDL model. This implies that there is long-run relationship among the variables.

#### **4.4 The Long Run Tests Results**

The ARDL model was estimated to determine the long-run relationship of the regressors on the regressand, and the long-run estimates are presented in Table 5.

**Table 5: Long Run Estimates (Dependent Variable=RGDP)**

| <b>Variable</b> | <b>Co-efficient</b> | <b>Std. Error</b> | <b>t-Statistic</b> | <b>Prob.</b> |
|-----------------|---------------------|-------------------|--------------------|--------------|
| INSQ            | -36.57152           | 10.32285          | -3.542773          | 0.0046       |
| DOM             | 0.045021            | 0.102586          | 0.438864           | 0.6693       |
| FDI             | 0.836696            | 0.620910          | 1.347532           | 0.2049       |
| LAB             | -0.055086           | 0.198862          | -0.277008          | 0.7869       |

Source: Extracts from Using E-views 10 Output

The results of the ARDL model as shown in Table 5 indicate that institutional quality has significant negative influence on economic growth in Nigeria in the long-run at 5% level of significance. The implication is that Nigeria's institutional quality has harmed the economy's growth potential, resulting in negative effects. The estimated effects of domestic investment and foreign direct investment are positive but not statistically significant at 5% level of significance. This means that there is a lack of investment in Nigeria, which has failed to have a long-term impact on the country's economy. More so, the estimated influence of labour force on economic growth in Nigeria in the long-run is positive but not statistically significant at 5% level of significance.

#### **4.5 The Short-Run Dynamics**

The error correction model is estimated to determine the extent to which the variables would revert to equilibrium in the event of any temporary disequilibrium, and the result is presented in Table 6.

**Table 6: Results of Short-Run Dynamics**

| Variable     | Coefficient | Std. Error | t-Statistic | Prob.  |
|--------------|-------------|------------|-------------|--------|
| C            | -48.63121   | 32.42235   | -1.499929   | 0.1618 |
| RGDP(-1)*    | -1.392864   | 0.244415   | -5.698773   | 0.0001 |
| INSQ(-1)     | -50.93916   | 17.34467   | -2.936877   | 0.0135 |
| DOM**        | 0.062709    | 0.143958   | 0.435604    | 0.6715 |
| FDI**        | 1.165403    | 0.917683   | 1.269941    | 0.2303 |
| LAB**        | -0.076728   | 0.275108   | -0.278900   | 0.7855 |
| D(INSQ)      | -32.21943   | 10.87054   | -2.963923   | 0.0129 |
| CointEq(-1)* | -0.139286   | 0.020471   | -6.804120   | 0.0000 |

\* p-value incompatible with t-Bounds distribution. \*\* Variable interpreted as  $Z = Z(-1) + D(Z)$ .

Source: Extracts from E-views 10 Output

It is evident from Table 6 that the error correction term is negative and statistically significant at 1% level of significance. This shows that any temporary deviation from equilibrium path can be corrected slowly (13.9% yearly) and long-run equilibrium will be restored. The results also show that institutional quality has strong negative influence on economic growth in the short-run at 5% level of significance. The implication is that the quality of Nigerian institutions is generally low, which has contributed to the economy's slowing growth. The lagged dependent variable has negative and significant influence on the current level of economic growth in Nigeria at 1% level of significance.

#### 4.6 Residuals Tests for the ARDL Model

The study examined the residuals tests for the ARDL model. The results are presented in Table 7.

**Table 7: Residuals and Stability Analysis Results**

|  | <i>F. Stat</i> | <i>Prob.</i> |
|--|----------------|--------------|
| Breusch-Godfrey Serial Correlation LM Test     | 2.076526       | 0.1801       |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey | 1.423824       | 0.2479       |
| Jarque-Bera Normality Test                     | 0.597961       | 0.741574     |

Source: Extracts from E-views 10 Output

Table 7 reveals that there is no serial correlation among the residuals as a consequence of the residuals tests as indicated by the Breusch-Godfrey serial

correlation LM Test. The result of Breusch-Pagan-Godfrey Heteroscedasticity test also proved that the residuals have a constant variance in the short-run, while the Jarque-Bera Normality test result affirmed that the residuals are multivariate normal in the short-run. The stability tests of the estimates also show that the model and its parameter estimates are stable through the use of the Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUMS) at a 5% level of significance as depicted in Figure 4.

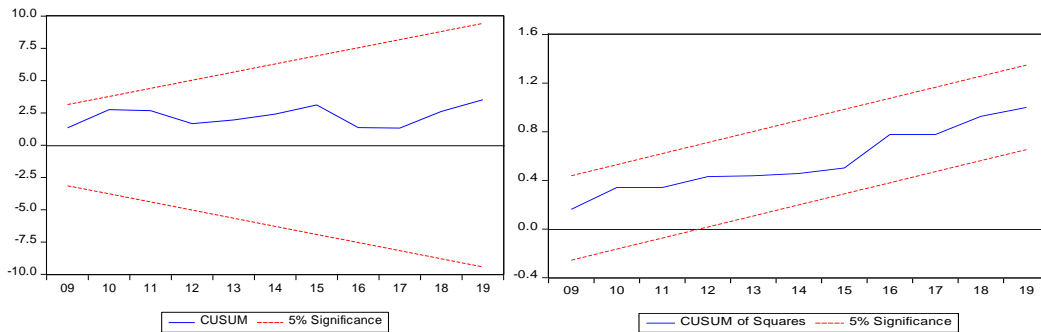


Figure 4: CUSUM and CUSUM of Squares Results

The stability of the residuals suggests that the model is valid for policy implementation.

### **5.1 Conclusion**

The study investigates the impact of institutional quality on economic growth in Nigeria in the 21<sup>st</sup> century (2001 to 2019). The study concludes that a long-run relationship exist between institutional quality and economic growth in Nigeria. And that the relative weak institutional quality in Nigeria has a significant negative impact on economic growth of Nigeria. It shows therefore that political paranoia, a lack of rule of law, a low level of regulatory quality, a lack of voice and accountability, government ineffectiveness, and a lack of control over corruption all impede Nigeria's economic growth.

### **5.2 Policy Recommendations**

According to the findings of this study, Nigeria's weak institutional quality has hampered the country's economic growth and development. Thus, in order to achieve a high level of growth, the Nigerian government should improve the quality of the country's institutions. This entails a vigorous anti-corruption campaign, more accountability and freedom of expression, strengthened

regulatory authority, and improved government efficacy through better leadership selection processes. The study also suggests that policymakers prioritize high and improved law and order in order to ensure Nigeria's stable and accelerated growth. These would aid in the promotion of good institutional qualities throughout the country. This also necessitates going beyond liberal policies and developing good governance capabilities that can accelerate productivity in all sectors of the Nigerian economy.

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