Modelling Inclusiveness of Growth in Nigeria. What are the Roles of Remittances and Institutional Quality?

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Abstract: The Nigerian economy has witnessed tremendous growth in the last three and half decades, yet 62.7% of the 188 million population remains poor. The non-inclusiveness of growth recorded has heightened the search for the underlying cause of this age-old macroeconomic problems. The institutional mechanism in place to attract worker's remittances in order to attain a broad-based growth have been the placed at the forefront of the national quest for growth to be inclusive. In analysing the role of institutions in the remittance-inclusive growth puzzle, this paper employ the Auto-Regressive Distributed Lag Approach to account for the short-run and long-run structural properties of the model. Findings reveals that remittances has a long-term negative relationship with inclusiveness of growth while institutional quality positively enhances inclusiveness of growth in Nigeria in the long-run. However, institutions have negative short-term relationship with inclusive Growth while remittances have short-term positive relationship with inclusive Growth in Nigeria. It is therefore recommended that the society should do more to embrace strong institutions that will promote inclusiveness and their instrumental value as a means toward better growth performance and equal income distribution.

Keywords: Inclusive Growth; Remittances; Institutional Quality; Nigeria

JEL Classification: E01; E44; F24

1. Introduction

Over the past decade, developing countries have made a considerable effort toward poverty reduction through earnings accrued from international remittance. Remittances have become a vital source of external finance (Lartey & Mengova, 2016). The official payments in the form of remittances to developing countries were amounted to $429 billion in 2016, a sharp decrease of 2.4 percent over $440 billion in 2015, while the global remittances constricted by 1.2 percent to $575 billion in 2016, from $582 billion in 2015 (World Bank, 2017). According to World Bank (2017), remittance flows to Sub-Saharan Africa deteriorated by an estimated 6.1 percent to $33 billion in 2016. The status which was attributed to dwindling oil prices and weak economic growth in Europe, which thwarted remittance receiving countries; and changes in remittances to informal channels due to controlled exchange rate regimes in countries such as Nigeria (World Bank, 2017). The significant impact of global remittances to the macroeconomic stability and viable growth outlooks of vast numbers of developing countries cannot be underestimated in the present discourse on remittances, particularly Nigeria. A remarkable disclosure is that the high level of unemployment and hence surplus labour in Nigeria, migration from developing to technologically advanced countries may positively assist the countries in the long-run if remittances are focused on improved domestic consumptions and investments.

Regrettably, the global cost for sending money is about 8 percent of the transaction value, which tend to rise to approximately 10 percent for funds sent to sub-Saharan Africa, constituting an unfair penalty on the world's poorest people, and around $50 billion in "misplaced" money that could be better

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utilised. Noting the astonishingly cumbersome process, ranging from managing senders with recipients coupled with strict regulation. Indeed, a reported cracked down on payments to some countries by the U.S. and European governments amid concerns that al-Shabaab is funding itself through these transfers, left the reliant upon remittances impoverished and making an unjustifiable social condition more implausible. Consequently, those nations where transfers are permissible to be made without unnecessary exertion, more needs to be done to get the money sent into the financial system. While remittance recipient households can and do save, without access to financial institutions and services, much of their savings are kept informally. It is requisite for government to put up economic policies to harness remittances for inclusive growth. Such that the focus now needs to be on creating the conditions for remittances to build prosperity, rather than sustain survival, and on leveraging these enormous inflows for full and comprehensive financial inclusion.

This paper stresses on the growth impact of remittances with particular interest on its ability to make growth a broad-based phenomenon in line with the quest for inclusiveness of growth at all level of economic productivity. We presume that the effect of institutions on the growth-remittance relationship depends on measurement or definition of institutions. An inquiry into the remittance-growth relationship provides a different consequence. From the positive perspective, developing countries gain from global remittance inflows as crucial earnings to support infrastructural limits and economic growth (Ahortor & Adenutsi, 2009). Consequently, remittance inflows tend to support the poverty alleviation programmes; provide capital to fund households' investments and savings; and drive for macroeconomic growth. Other views suggest that persistent and growing inflows of remittances ignite inflation; lessen the incentives for instituting viable and sound structural reforms, and also ignites human capital flight which divests these countries of a sizeable proportion of the very human resource unfavourably requisite to boost inclusive growth and sustainable development in recipient countries. Hence, it is plausible to note that methodological issues will perhaps explain some of the differences in the empirical literature. For instance, Combes and Ebeke (2011), explored System-GMM methodology and reported that remittances considerably lessen consumption volatility. Conversely, other methodological issues noted in the literature of growth-remittance relationship comprise the heterogeneity amongst countries and salient features of data, namely endogeneity, persistence, and heteroskedasticity that matter directly for the performance of models and renders the results worthless and contradictory.

Given the mixed results concerning the impact of remittances on growth, some have started to inquire if remittances promote growth under certain conditions. And if remittances are primarily used by households to ease short-term cash limits through consumption undertakings, would be expected outcome aimed at lessening the poverty in the recipient households. Thus, the current study provides an interplay between remittances, inclusive growth and institutional quality. The present investigation on diverse patterns of remittances suggests that domestic remittances are inclusive, prompting us to consider whether remittances would result in a more inclusive economic growth? How is it contributing to inclusive growth in Nigeria, and how can this contribution be improved? Above all, how can the governments come up with an institutional policy that impacts growth, and also make remittances more effective? Section one discusses the background of the study while a review of the recent literature on the subject was offered by Section 2. Section 3 stresses on methodology, section four analyse and interpret the result, while Section 5 concludes the study.

2. Review of the Recent Literature

2.1. Why institutions?

Mostly, literature has reflected that there are numerous likely effects of remittances on economic growth. Nevertheless, the role of institutions and government policies are significant determinants of remittances (World Bank, 2017). It is affirmative in the literature that the growth impact of remittances eventually depends significantly on the underlying institutions in the receiving country. The quality of institutions put forth substantial effect on the volume and efficiency of investment, which may have a significant role in defining the impact of remittances on growth. Subsequently, North (1990) describes the institutions as the humanly conceived restrictions that control human interaction, structuring social, political and economic enticements in human exchange. The author resolves that in as many institutions can control the environment in which individuals operate; they can be seen as contributing influence on the recipient household's decision on the usefulness of remittance income.

The literature provides that economic institutions are crucial in the allocation of resources from remittances to their most resourceful purposes. Rodrik (2004) once notes that more prosperous nations draw investors due to the existence of the active rule of law and monetary and fiscal policies. However, otherwise for the deprived countries. Conversely, Catrinescu et al., (2009), note that remittances are more helpful to contributory factor to stronger economic performance, longer-term growth where the quality of institutions is highly developed. Ahoure (2008) investigates the impact of governance on remittances and investment in Sub-Saharan African countries centres on panel data spanning from 2002 and 2006. The study adopts GMM piloted by Blundell and Bond (1998) and reports that remittances negatively affect investment when controlled for governance. Conversely, countries with high governance index tend to record the low adverse effect of remittance on investment. In another cross countries analyses, Abdih et al. (2012) examine the role of remittances on the institutional quality on a cross-sectional model of 111 developing countries. The study reveals that an increase in remittances inclines to depreciate institutional quality- as such that access to remittance earnings makes government corruption less costly for domestic households to tolerate.

Gadzar and Kratou (2012) follow the trend of analysis by examining the effect of remittances on economic growth, institutions and financial development in a panel of 24 African countries spanning from 1988 to 2011. The study reveals that there is a complementarity between financial development and remittances in economic growth, such that remittances spur growth in a well-established financial system country. Possibly, an expansion in economic institutions that ease economic freedom would serve to reduce costs that influence the value of remittances. Recently, Lartey and Mengova (2016) examine the impact of institutions on remittances of some developing countries through a sample series of 90 countries and adopted the generalized method of moments (GMM) estimator as a methodology. The author suggests that enhancement in economic institutions would ease economic freedom and further lessen the transaction costs accompanying remittances in receiver countries. They resolve that the sound monetary policy and an active government contribute to remittance inflow into developing countries, such that developing countries would maximize the benefit of macroeconomic environments which are crucial for economic performance.

Similarly, Elias (2016) re-analyzed the relationship between remittances and economic growth with particular focus on the role of institutions through a sample series of 55 developing countries, spanning from 1991 to 2011. The author reports that the link between remittances and growth is

fragile and that remittance-growth relationship depends on how institutions are measured. As such that the sub-Saharan countries like Nigeria should strive to make policies that promote sound and accountable local institutions a priority to enjoy the full benefit of remittance as a source of external finance. However, this paper aimed at extending the work of Catrinescu et al. (2009) by incorporating different proxies of inclusive growth and institutions impact on the relationship between remittances and growth through an appropriate methodological approach that reduces the problems of measurement errors.

2.2. The Framework Linking Remittances, Institutional Quality to the Inclusive Growth

This segment predominantly focusses on the implications of remittances on the economy and society from the empirical and theoretical framework. From the literature on remittances, there are two divergent views concerning the impacts of remittances on the economy of the labour-sending country: the optimistic view and the pessimistic view. The hopeful describes remittances as instruments for economic development while the hopeless perceives remittances as an infection that worsens the economy (Cattaneo, 2008). Meanwhile, an orthodox explanation of the linkages between remittances and inclusive growth centres on the contribution of remittances to household income and thus poverty reduction.

Evidence in the literature shows that remittances are linked with reducing poverty indicators and extreme growth rates (Adams and Page, 2005), which hitherto used as a source of household consumption and source of financial investment in human capital (Gupta, Catherine & Smita, 2009). There is also evidence, though to a lesser extent, that remittance inflows facilitate growth and development in the receiving countries. For example, Morton, Panday and Kula (2010) assert that remittance inflows help economic growth and development in the receiving countries. The author resolves that most of the remittance recipients experienced an improvement in poverty but may witness worsening income inequality. Studies such as Ratha (2003) suggests that remittances raise the consumption levels of rural households might have substantial multiplier effects because they were more likely to be spent on domestically produced goods. Imai, Gaiha, and Kaicker (2014) report that remittances enhances economic growth and reduce poverty in the 24 Asian and Pacific countries observed. More importantly, two strands of the literature indicate that institutional quality is a vital determinant of remittances on inclusive growth through the influence institutions exert on the volume and efficiency of investment.

Nevertheless, there is surprisingly very little literature that would come even close to analyzing the interplay between institutions, remittance and growth. Recently, Singh, Jain-Chandra & Mohammad (2012) show that the global surge in public protests against discernments of weak governance and lack of inclusive growth is a cue of the importance of developing strong institutions, and of expanding the benefits of the formal economy to encourage economic growth and opportunity on the other. It is prominent in the literature that a large informal economy confines state capacity, which may thwart institutional development and as such limiting development of the formal sector. A well-developed governance institution guarantees investors with certainty that they will reap where they sow. The nature of the moderating effect of institutional quality on the broad-based growth impact of remittances is unclear. However, the presence of poor institutional quality, remittances could be the only external capital available to entrepreneurs. In a case like this, remittances substitute for lousy governance institution, and so, the causation runs directly from remittances. The consequence of

institutional quality may surpass access to external finance as an explanation on the connections between remittance and inclusive growth cores on support on household income and poverty diminution. Poor institutional quality may weaken poverty reduction capacity and further deteriorate inclusively. Thus, the previous debate on remittances, pro-poor growth and institutional quality relationship in developing countries seem to be either negative or mixed. Literature provides that if remittances are primarily used by households to ease short-term cash limits through consumption undertakings, the expected outcome would be reduced poverty in the recipient households through an improved standard of livings.

Consequently, given the contribution of remittances on poverty reduction, it predominantly supports the short-term consumption. Thus, it is imperative to note that the relationship between remittances, income and poverty is not as unidirectional as primarily anticipated but is equally strengthening with both positive and negative externalities and unpredicted outcomes. The impact of remittances goes beyond merely increasing household spending power but also change behaviour in other social realms such as altering attitudes to gender and education (Maskay & Shiva, 2013). These alterations can also possibly support the poverty reduction and income disparity. Arising from the above is that remittances and institutional quality compel inclusive growth. Similarly, Ali and Alpaslan (2013), using panel vector correction method, presume that there was a two-way relationship between remittances and investment.

3. Methodology

In modelling the role of workers' remittances and institutional quality in inclusive growth in Nigeria, the study follows the neoclassical theory of International capital flow as in (Ojapinwa and Odekunle, 2013). The relevance of foreign capital inflow in boosting inclusive economic growth and prosperity originated from both classical and neoclassical theories which postulate that the primary constraint on the part of developing economies is the shortage of capital. The arguments in their open extension postulate that foreign capital inflow can supplement domestic investment funds to foster improved broad-based economic growth. While the extended neoclassical growth theory argues that there are three leading causes of economic growth: increase in the stock of capital; technological progress and growth in labour input due primarily to population growth; economic growth analysis within the framework of open economies posits that economic growth in scarce capital economies is possible when inflows of capital are channelled through the financial system (Bencivenga & Smith 1991). The theory posits that capital flows through the financial system could lead to steady growth rate through increased allocation efficiency. Increased foreign savings can then facilitate growth which therefore can be constrained either by a shortage of domestic savings (the savings gap) or by a shortage of exports earnings (the trade gap) through the financial system. Foreign capital inflows are a therefore crucial determinant of growth, thus adding to domestic savings to generate a higher rate of investment allowing less developed countries to grow faster than the more developed ones (Aghion & Howitt,1998).

Following the neoclassical idea that increasing foreign capital flows to developing economy may be adding to domestic savings gap to generate a higher rate of investment, this study is motivated to determine insight into remittances as a source of economic growth. Hence, Solow-Swan growth framework based on the premise that output in an economy is produced using a combination of labour

(L) and capital (K) under constant returns, where the quantity of output (y) is determined by the efficiency (A) is a useful starting point

$$Y = Af(L, K) \quad \textbf{(1)}$$

This study assumes competitive markets. The inclusive growth rate of the economy is then, a weighted sum of the growth rates of the efficiency parameter, g_A, of the labour force,g_L , and of the capital stock, g_k, where the weights on the latter two are the shares of payments to labour and capital in the gross domestic product.

$$g_A = g_A + a_L g_L + a_K g_K \quad \textbf{(2)}$$

The above gives the inclusive growth accounting framework. However, since our focus is on the institutions and remittance led inclusive growth, the model includes indices of institutional quality and foreign remittances representing a knowledgeable economy as a predictor of inclusiveness of growth in Nigeria. This study is a prototype of Ojapinwa and Odewale (2013). The functional relationship is specified thus;

$$INC_{GROWTH} = f(REM, RULE_{LAW}, REG_{QUALITY}, CONT_{CORRP}) \quad \textbf{(3)}$$

Where INC_{GROWTH} represents inclusive growth proxied with GDP per capital , $RULE_{LAW}$ (rule of law) which gives the perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence, $REG_{QUALITY}$ (regulatory quality) captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development, $CONT_{CORRP}$ (control of corruption) captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

The mathematical model is shown as

$$GDP_{PERCAPITAL_t} = \beta_0 + \beta_1 REM_t + \beta_2 RULE_{LAW_t} + \beta_3 REG_{QUALITY_t} + \beta_4 CONT_{CORRP_t} \quad \textbf{(4)}$$

Restating the model in an econometric form:

$$GDP_{PERCAPITAL_t} = \beta_0 + \beta_1 REM_t + \beta_2 RULE_{LAW_t} + \beta_3 REG_{QUALITY_t} + \beta_4 CONT_{CORRP_t} + \varepsilon_t \quad \textbf{(5)}$$

Where ε_t represents error term, β_0 *is the value of the dependent variable when the explanatory variables are zero* and $\beta_1, \beta_2, \beta_3,$ *and* β_4 *are parameter estimates*

These variables are log-linearized to adjust for disparities in units and measurements

$$lnGDP_{PERCAPITAL_t} = \beta_0 + \beta_1 lnREM_t + \beta_2 lnRULE_{LAW_t} + \beta_3 lnREG_{QUALITY_t} + \beta_4 lnCONT_{CORRP_t} + \varepsilon_t \quad \textbf{(6)}$$

3.1. Data sources and measurements

Our study used time series data for inclusive growth (measured with GDP per capital) and indicators for institutional quality and remittances in Nigeria (workers remittances, the rule of law, regulatory quality, control of corruption, government effectiveness, political stability and the absence of violence, voice and accountability) from 1996 through 2017. The data are mainly obtained from the CBN

statistical bulletin various issues up until 2016 and World Bank Database (World Governance Indicator, 2017).

3.2. Estimation Technique

In accounting for the short-run and long-run dynamics of the institutions and remittances as a predictor of macroeconomic instability in Nigeria, the study made use of a 3-prong econometric procedure. First, is the pre-estimation evaluation. The Augmented Dickey-fuller (ADF) unit root tests were deployed to ascertain the order of integration of the variables and equally inform the choice of estimation technique to be used. This test of the time series data is required because a non-stationary regressor invalidates many standard empirical results. The presence of a stochastic trend is determined by testing the presence of unit roots in time series data. Secondly, the descriptive statistics method to help show, describe and summarize the data in a meaningful way and also to know if the data are normally distributed through their averages and Jarque-Bera values (Gujarati and Dawn, 2009). Then, the Auto-Regressive Distributed Lag approach is employed to establish whether there is a the long-run relationship between the variables. The ARDL model was introduced originally by Pesaran and Shin (1999) and further extended by Pesaran et al. (2001). The ARDL approach has the advantage that it does not require all variables to be I(1) like the Johansen framework and it is still applicable if we have I(0) and I(1) variables in our set. The third phase is post-estimation. To confirm the robustness and validity of regression model, some post-estimation tests was conducted. These are the Breusch-Godfrey Serial Correlation to test for the presence of serial correlation, Breusch Pagan Heteroscedasticity to test for heteroskedasticity and Cusum stability test to verify the structural stability of the model.

4. Result and Interpretations

4.1. Descriptive Statistics

Table 1. Descriptive Statistics of the Data Set

	$GDP_{PERCAPITAL}$	$RULE_{LAW}$	REG_{QUA}	$CONT_{CORRP}$	REM
Mean	3.865123	4.145324	7.092299	6.536366	5.788304
Median	4.295432	4.997689	7.867788	5.458902	6.399393
Maximum	8.735213	6.643277	9.344554	8.453213	8.564782
Minimum	2.459875	3.564799	4.342557	2.456738	2.285682
Std. Dev.	2.655374	1.575209	2.285007	2.567785	1.313406
Skewness	0.299112	0.667277	0.473473	0.7373772	1.333288
Kurtosis	1.322999	1.646363	2.663772	2.099999	1.563929
Jarque-Bera	3.456782	1.663626	2.182282	1.267929	3.827727
Probability	0.132999	0.071199	0.382821	0.737377	0.083381

Source: Authors computation, 2018

Table 1 shows the mean and median of all the observations in the data set lie within the maximum and minimum values indicating the high tendency of normal distribution. All the variables are positively skewed. The kurtosis statistics show that all the variables were platykurtic suggesting that their distributions were flat relative to normal. The Jarque-Bera statistics shows that the series are normally

distributed since the p-values of all the series are not statistically significant at 5% level. Thus, informing the acceptance of null hypothesis that says each variable is normally distributed.

Table 2. Correlation Matrix of the Data Set

	GDP_PCAP	*RULE_LAW*	*REG_QUA*	*CONT_COR*	*REM*
GDP_PCAP	1				
RULE_LAW	0.645737	1			
REG_QUA	0.234445	0.543322	1		
CONT_COR	0.713332	0.432888	0.512342	1	
REM	0.723792	0.002332	0.017134	0.729483	1

Source: Authors computation, 2018

The study presents the results of the correlation analysis of the set of variables employed in Table 2 above. The table shows that the correlation coefficients among the variables are below 0.75 indicating that there is no tendency for multicollinearity to occur among the independent variables.

4.2. Time Series Properties of the Variables

The ADF test is used to test for stationarity of the data. The ADF test consists of estimating the following regression equation.

$$\Delta Y_t = \alpha + \beta_t + \delta Y_{t-1} + \sum_{i=1}^{m} \varphi i \Delta Y_{t-i} + \varepsilon_t \quad \textbf{(5)}$$

Where α represents the drift, *t* represents deterministic trend and m is an optimal lag length ample enough to ensure that ε_t is a white noise error term.

Table: 3. Unit Root Test: Augmented Dickey-Fuller Test (ADF)

Variables	*Level T-Stat*	*Critical Value @ 5%*	*First Difference T-Stat*	*Critical Value @ 5%*	*Order of Integration*
$lnGDP_{PERCAPITAL}$	-1.673739	-3.464662	-5.898565	-4.519382	I(1)
$lnRULE_{LAW}$	-1.629614	-5.637379	-4.592401	-3.879542	I(1)
$lnREG_{QUALITY}$	-3.88934	-2.963972	-7.220743	-2.777895	I(0)
$lnCONT_{CORRP}$	-4.237807	-2.785662	-5.784555	-1.945778	I(0)
$lnREM$	-1.636387	-2.673737	-7.655221	-4.555627	I(1)

Source: Authors computation (E-views), 2018

The study used Augmented Dickey-Fuller to ascertain the order of integration of the variables. It is observed that the variables are stationary at levels I(0) and at first difference I(1) at 5% significance level. The appropriate modus operandi of analysis that captures the combination of I(1) and I(0) stationary variables, according to Pesaran et al (2001), is the ARDL model.. The primary form of the ARDL model is given as:

$$\Delta lnGDP_{PERCAP\,t} = \beta_0 + \sum_{s=1}^{n_i} \beta_1 \Delta lnGDP_{PERCAP\,t-s} + \sum_{s=0}^{n_i} \beta_2 \Delta lnRULE_{LAW\,t-s} + \sum_{s=0}^{n_i} \beta_3 \Delta lnREG_{QUALITY\,t-s} + \sum_{s=0}^{n_i} \beta_4 \Delta lnCONT_{CORRP\,t-s} + \sum_{s=0}^{n_i} \beta_5 \Delta lnREM_{t-s} + \varepsilon_t \quad \textbf{(6)}$$

Where Δ is the first difference operator, $n_i = (\mathrm{i} = 1,2,3,4,5)$, while other variables remain as defined earlier.

4.3. Optimal Lag Length Selection

The implication of the lag length selected explains the effect of the outcome of the previous year on the current year. The selection of an optimal lag length was very essential before carrying out a Johansen co-integration test, the result of which is presented in Table 4.

Table 4. Optimal Lag Length Selection Criteria

Lag length	LogL	LR	FPE	AIC	SC	HQ
0	-130.3963	NA	0.000123	8.023310	8.292668	8.115169
1	64.80295	310.0223*	1.09e-08*	-1.341350*	0.544154*	-0.698339*

Source: Authors computation (E-views), 2018

Notes * indicates lag order selected by the criterion

LR: Sequential modified LR test statistic (each test at 5% level)

FPE: Final Prediction Error

AIC: Akaike Information Criterion

SC: Schwarz Information Criterion

HQ: -Hannan- Quinn Information Criterion

The result in Table 4 portrays different lag length criterion (LR, FPE, AIC, SC and HQ). The Schwarz information criteria depicting lag order length of (1) for the model is selected. Given our optimal lag length, we can proceed to test for the long-run relationship among the variables.

4.5. The Bound Test Approach

To investigate the presence of long-run relationships among the variables, the bound testing under Pesaran et al., (2001) procedure is used. The bound testing procedure is based on the F-test. The F-test is basically a test of the assumption of no cointegration among the variables against the premise of its existence, denoted as:

$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0$ i.e., there is no cointegration among the variables.

$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq \beta_7 \neq 0$ i.e., there is cointegration among the variables.

Table 5. Bound Test Result

F-Statistics	**1%**		**5%**		**10%**	
6.681599	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound	Upper bound
	2.96	4.26	2.32	3.5	2.03	3.13

Source: Author, 2018.

The result of the computed F-value after each variable has been normalised is presented in Table above. The F-test for the joint significance of the lagged variables was conducted using the Bound test. The 1% lower and upper bound critical values are 2.96 and 4.26. The calculated F-value suggests the existence of long-run relationship among the variables since the test statistics of 6.681599 is greater than the upper bound of 4.26 critical values.

4.6. ARDL Long-run relationship

Table 6. Long-Run Result

Dependent Variable: $\delta GDP_{PERCAPITAL}$				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-4.960661	15.168813	-0.327030	0.7532
$\delta ln\Delta GDP_{PCAP\_1}$	-2.729548	1.493621	-1.827470	0.1532
$\delta ln\Delta REM$	-0.703785	1.689088	-0.416667	0.0419**
$\delta ln\Delta RULE_{Law}$	0.260615	0.777440	0.335222	0.0073*
$\delta ln\Delta REG_{QUALITY}$	0.040481	0.171039	0.236679	0.0297**
$\delta ln\Delta CONT_{CORRP}$	0.021902	0.515808	0.042462**	0.0355**

Note: *(**) (***) implies 1% (5%) (10%) significance level

Source: Author, 2018.

The estimated result presented in Table above explained the long-run relationship institutional quality, remittances and inclusive growth in Nigeria. The result revealed that the coefficient of worker's remittances is negative and statistically significant at 5% level of significance. This implies that a percentage increase in worker's remittances will lead to approximately 0.70 percentage decreases in GDP per capital as indicator of inclusive growth in the long run.

The coefficient of Rule of Law, Regulatory Quality and the Control of Corruption are positive and statistically significant at 1%, 5% and 5% respectively. This implies that a percentage increase in Rule of Law, Regulatory Quality and the Control of Corruption will leads to approximately 0.26, 0.04 and 0.02 percentage increase in GDP perc capital as the measure of inclusive growth in the long-run.

4.7. ARDL Short-run relationship

Table 7. Short-Run Result

Dependent Variable: DLN(CAB)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.668927	0.709821	0.942388	0.3774
$\delta ln\Delta GDP_{PCAP_{-1}}$	-1.486626	0.542865	-2.738482	0.0032*
$\delta ln\Delta REM$	1.134846	0.475285	2.387718	0.0483**
$\delta ln\Delta RULE_{Law}$	0.028671	0.012678	2.261431	0.0512**
$\delta ln\Delta REG_{QUALITY}$	0.023717	0.010088	2.351079	0.0510**
$\delta ln\Delta CONT_{CORRP}$	-0.035143	0.022200	-1.583005	0.0074*
$Coint(-1)$	-0.762339	0.001923	-0.176058	0.0002*
R-squared	0.992956	**Akaike info criterion**		-6.857774
Adjusted R-squared	0.6372875	**Schwarz criterion**		-6.161426
F-statistic	75.90594	**Durbin-Watson stat**		1.964671
(Prob)	(0.000003*)			

Note: *(**)(***) implies 1% (5%)(10%) significance level

Source: Author, 2018

The estimated result presented in Table above explained the short-run relationship between institutional quality, remittances and inclusive growth in Nigeria. The independent variables explained approximately 67.3% of the total variations in the dependent variable while the remaining 32.7% is not captured within the model. This showed that the model had a very high goodness of fit. The value of the F-statistic was statistically significant at 1% level indicating that the model was significant. The value of the Durbin-Watson statistic was closed to 2 implying that the model had no serial correlation problem.

The result showed that in the short-run, inclusive growth had a significant negative relationship with its one-period lag value at 1% level of significance. A percentage decrease in the value of GDP per capital at year t_{-1} leads to approximately 1.49 percentage increase in its value at year t in the short run.

In addition, the coefficient of worker's remittances was positive and statistically significant at 5% level of significance. This implies that, in the short run, a percentage increase in worker's remittances will result to 1.13% increase in GDP per capital.

The Rule of Law, and Regulatory Quality are positively and statistically significant at 5%. Hence, a percentage increase in Rule of Law, and Regulatory Quality will result to 0.03 and 0.02 percentage increase in inclusive growth in Nigeria in the short-run. Albeit, Control of Corruption is negative and statistically significant at one percent implying that a percentage increase in control of corruption will result in a percentage decrease in inclusive growth in Nigeria in the short-run. The co-integrating equation gives the speed of adjustment back to the short term. The negative sign and the value of 0.762 explains that the co-integrating equation is rightly signed and that the speed of adjustment back to the short run is 76.2%.

Table 8. Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.845890	Prob. F(3,25)	0.4433
Obs*R-squared	2.236642	Prob. Chi-Square(3)	0.3268

Source: Authors' computation, 2018

Given the probability value of 32.68 percent, we fail to reject the null hypothesis and conclude that our short-run model is free from serial correlation.

Table 9. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.029755	Prob. F(6,27)	0.0214
Obs*R-squared	13.68061	Prob. Chi-Square(6)	0.3334

Source: Authors' computation, 2018

The p-value (0.3334) of Obs* R-squared showed that we could not reject the null hypothesis. This implies that residuals have a constant variance which is desirable. That is, residuals are homoskedastic.

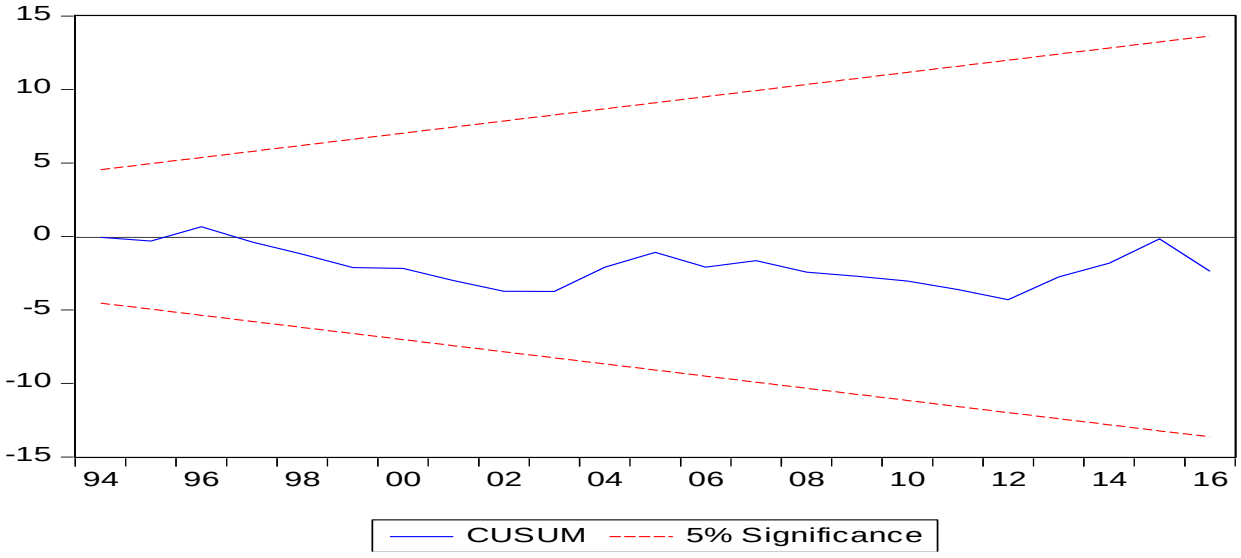

Figure 1. CUSUM Stability Test

Source: Authors' computation, 2018

The above figure shows that the CUSUM line is within the critical bounds of 5 percent level of significance which indicates that the model has structural stability.

5. Conclusion

The study investigates inclusiveness of growth as induced by indices of institutions and workers remittances from 1996 to 2017 (21 years). In evaluating its objectives, the paper adopts Auto-Regressive Distributed Lag (ARDL) approach to account for the dynamics of the model. The empirical result indicates that Remittances has a long-term negative relationship with inclusiveness if growth while institutional quality positively enhances inclusiveness of growth in Nigeria in the long-run. However, Institutions have negative short-term relationship with Inclusive Growth while Remittances have short-term positive relationship with Inclusive Growth in Nigeria.

The findings of the study agree with the results of (Alemu, 2016; Catrinescu, Leonledesma, Piracha, & Quillin, 2009; Mohommad, Singh, & Jain-Chandra, 2012; Singh, Haacker, Lee, & Le Goff, 2011) who found a linear relationship between the institutions, remittances and economic growth.

It is therefore recommended that the society should do more to embrace strong institutions that will promote inclusiveness and their instrumental value as a means toward better growth performance and equal income distribution. Mainly, more investment to be geared towards sensitizing the public about transparency and accountability of governance. Every citizen must be encouraged to participate in governance through ensuring they vote to elect their preferred leader. Political violence that hurts anticipated growth outcomes should be cut out through extended government military expenditure and timely assessment of their operations.

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