Institutional Quality and Macroeconomic Determinants of Diaspora Remittances Inflow in Nigeria

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Abstract: *The study examined the institutional quality and macroeconomic determinants of diaspora remittances inflow in Nigeria, via autoregressive distributed lag model (ARDL) from 1981-2017. The ARDL bound cointegration test showed that a long-run relationship exists among institutional quality and macroeconomic determinants of remittance inflows in Nigeria. That is, there is a long-run implication of GDP, exchange rate, inflation rate, interest rate, unemployment, and net migration on the remittances inflows in Nigeria. Besides, the findings demonstrated that both in the short and long-run institutional quality and macroeconomic determinants of remittances have a significant relationship with the remittance's inflows in Nigeria. While GDP per capita, inflation rate, and interest rate exert a negative effect, exchange rate and net migration exhibit a positive significant link with remittances inflows. It is suggested and concluded that to pull in more remittances, policymakers should think progressively about actualizing steady and master development strategies. It is, consequently, prescribed to devise procedures planned for accomplishing a higher and continued pace of financial development, improved institutions in form of regulatory quality, control of corruption, political stability, and stability of macroeconomic variables in Nigeria.*

Key Words: Institutional Quality, Macroeconomic, Remittances, Diaspora Inflow

Introduction

The primary intentions behind sending remittances as expected in the related hypothetical writing incorporate benevolence, hazard protection, advance reimbursement, trade, and legacy (Hagen and Siegel,2007). These thought processes run from impure benevolence to pure personal conditions (Rapoport and Docquier, 2006). Individuals in the intermediate of the two boundaries are named "impure altruism" (Lucas and Stark, 1985). In pure altruism, migrants send cash home to monetarily support their dependent relative in the nation of the source (Lucas & Stark, 1985; Rapoport & Docquier, 2006). Regardless of the significance of remittances, the nexus among the determinants of diaspora remittances in Nigeria and institutional quality are limited and inadequate.

Besides, although scholars have made an effort to appraise the extent of remittances and research their effect in developing nations, it is seen that besides Egypt in the African district; sub-Saharan Africa, especially Nigeria has given next to no consideration regarding the issue of remittances and macroeconomic determinants through the lenses of quality institutions. There are a few investigations that recorded that macroeconomic determinants of diaspora remittances not even within the lenses of how institutional quality enhances more diaspora remittances inflow into the country. From theoretical constructs, it has been shown that there are two contradicting assumptions as to the causal connection between remittances and macroeconomic factors. The pro-cyclical hypothesis, and countercyclical hypothesis. Late writing has likewise featured the significance of geographical separation and other respective factors in driving remittances. Investigational proof in such a method is restricted in light of constrained information, accessibility concerning shared remittances after some time. At the same time with the financial extent of the beneficiary and the resource of the nation (estimated in GDP), the exchange cost between the source and the receiving nation (once in a while estimated as far as mutual geographical separation) is viewed as a determinant of remittances (Ezike & Ogboi, 2017).

Nevertheless, the position of institutional quality is a major factor of remittances (World Bank, 2017). Remittances allow and act as a form of social protection that enables beneficiaries to substitute government expenditure with their private funds (Berdiev et al., 2013; Majeed, 2016). Research shows that immigrants are citizens who have an impact on national strategy and are pulling the policy to fulfill its task via the wealth of experience acquired from living overseas. They aim to improve the lives of their people, make relations, and offer opportunities of becoming active politically in-home nations. It serves as a useful voice to push the authorities to eliminate costs and handle it effectively (Tyburski, 2014; Tusalem, 2018; Borja, 2020). Remittances could result in higher prices for savings instruments, provided that the fixed expenses of receiving remittances increasing result in a lump-sum influx, presenting families with surplus cash over a certain length of time. Mostly as consequence, they can enhance their preference for deposit accounts on the basis that investment banks give families a safe capacity to sell their transient surplus capital (Misati et al., 2019; Muktadir-Al-Mukit & Islam, 2016).

In comparison to other studies, Nigeria has indeed been rated among the most corrupt and terrorist country in the world (Transparency International, 2019). Although such ratings indicate crucial issues for Nigerian people and the numerous institutional quality indicators could be improved. According to World Bank (2018), Nigeria is the largest recipient of remittances in sub-Saharan Africa with approximately $22 billion in 2017, followed by Senegal ($2.2 billion), Ghana ($2.2 billion), Kenya ($2.0 billion), Uganda ($1.4 billion) and Mali ($1.0 billion). It has been estimated that these countries would still be the largest remittances in the country. Despite the inflow of these funds into the region, there is minimal and insufficient research to investigate the institutional quality and macroeconomic determinants of diaspora inflows in Nigeria and sub-Saharan Africa.

The justification or gap for this study is critical due to the Covid and post Covid era the whole world has witnessed. Total direct remittance inflows to Nigeria have decreased dramatically in recent years, dropping by 50% from US$ 2.04 billion to US$ 1.01 billion around January and February 2020. This is slightly lower than the 2019 average, with a total of US$ 23 billion being committed in 2019, making Nigeria the largest recipient in the sub-Saharan African region. Nonetheless, with most of its people living in the diaspora especially in countries that have already been heavily affected by the COVID-19 pandemic, particularly Spain, Italy, the United Kingdom, and the United States, their ability to function and therefore remit funds have been drastically reduced. Given that remittances are an important source of revenue for poor people in developing countries, this positive innovation could reduce poverty and expand inequality. Remittance payments are estimated to continue to decline in the upcoming years, as the recent World Bank report states that transfers to low- and middle-income countries in sub-Saharan Africa will decrease by 23.1% in 2022 (Knomad,2019).

To reduce the effects on disadvantaged families, the government has a crucial role to play in enhancing institutional efficiency and providing extra safety net programs for the pro-poor and poor by ensuring that the cash transfer process is effective and fair (Centre for the Study of the African Economy,2020). Authorized transfers in the form of remittances to third world countries contributed to $429 billion in 2016, a significant decline of 2.4% from $440 billion in 2015, while worldwide inflows decreased by 1.2% to $575 billion in 2016, from $582 billion in 2015 (World Bank, 2017). According to the World Bank (2017), remittances to sub-Saharan Africa declined by approximately 6.1 % to $33 billion in 2016. Ranking linked to declining oil prices and poor economic growth in Europe that hindered collecting nations' remittances; and shifts in remittances to indirect mechanisms due to regulated exchange-rate mechanisms in parts of Africa (World Bank, 2017).

Research has shown that there has been developing attention to migrants' remittances to their nations of origin in recent times and such as money related to migrant remittances are critical for development. The issue of remittances has kept on being on the front burner. As indicated by International Migration (2017) report, more than 1 million Nigerians dispersed in the diaspora over Europe, the United States, Asia, North America, and different pieces of Africa, transmits $20bn every year to Nigeria. These remittances inflows of private ventures, family use, access to training, and social insurance help in a great way in easing existing and future poverty. Other than these, an expanding total of research discovered that remittances are certain to affect growth positively as exemplified in several studies (Giuliano and Ruiz-Arranz,2009, Kumar,2014, Marwan et al,2013, Bayar, 2015, Tahir et al.2015, Nwaogu and Ryan,2015, Karamelikli & Bayar,2015); while a few examinations showed that remittances have undesirable impact on growth (Hassan et al., 2017; Jouini, 2015; Parinduri & Thangavelu,2011).

The World Bank reported and evaluated figures of global remittances in 2018 to be over $689 billion around the world. India ($78.609 billion; 2.9% of GDP) and China ($67.4 billion; 0.5% of GDP) got the most elevated progressions of internal remittances s while Nigeria was

the seventh most elevated beneficiary of inward inflows ($24.311 billion; 6.1% of GDP). In certain nations and domains, inflows are represented as high as over 30% of GDP. It was 35.2% of GDP in Tonga; 15.3% in Gambia; 14.8% in Lesotho; 13.6% in Senegal; 13.1% in Liberia and 10.8% in Egypt. Remittances comprise a critical piece of the worldwide fund and the GDP of a few nations and are on track to turn into the biggest wellspring of outer financing in emerging nations. Throughout the most recent decade, a lot of inflow to emerging nations sent by migrants' laborers have risen relentlessly. All around 70% of inflows of remittance stream to emerging nations. Especially, the authority documented remittances traveled to unindustrialized nations $US 431.6 billion of every 2015, an expansion of 0.4% over $ 430 billion of every 2014 (World Bank, 2016). Besides, as shown by the World Bank report (2014), 232 million global migrants recorded 3.2% of the complete total populace in the year 2013. Of these figures, 36% comprised immigrants from emerging nations living in other unindustrialized nations, a marvel named south-south movement. The remittances to sub-Saharan Africa persisted at USD32billion in the year 2013, and that migrant remittances remained generally steady and might carry on contradict consistently because migrants regularly send more when the beneficiary nation is in a financial downturn. (World Bank report, 2014).

In 2017, the number of international migrants globally has been almost 258 million (or 3.4% of the global population), as per figures by the UN Population Division. The UN migration data portal shows that there were 1.3 million new immigrants from Nigeria in 2017, representing 0.6% of the total population (immigration rate is ~300,000 in the last 5 years). Although the official documents, it does not include all born to Nigerian parents in the immigrant population and still hold the nationality of their country of birth. The remittance flows to Nigeria are also included in this group. Unofficial estimates suggest that there are around 15 million Nigerians in the diaspora.

Official records show that there are 1,24 million Nigerian migrants in the immigrant community (United Nations, 2017). This estimate is probably higher in 2018 and 2019, with the massive immigration pattern from the region. Approximately half of the Nigerian adults also suggested their desire to leave the country in the next five years, as per a survey study by the pew research Centre, in 2018. Nigeria thus accounts for more than a third of the migration of migrants to sub-Saharan Africa. PwC stated that these flows contributed to US$23.63 billion (2017: US$22 billion) in 2018 and accounted for 6.1% of Nigeria's GDP. Migrants' remittances in 2018 constitute 83% of the federal government budget in 2018 and 11 times the FDI flows in the same timeframe. Nigeria's remittance inflows also were 7.4 times higher than the US$ 3.4 billion of net official development assistance (foreign aid) received in 2017. PwC forecasts that remittances to Nigeria will rise to US$ 25.5 billion, US$ 29.8 billion, and US$ 34.8 billion in 2019, 2021, and 2023. Over 15 years, PwC expects total remittance flows to Nigeria to rise almost twice in size from US$ 18.37 billion in 2009 to US$ 34.89 billion in 2023.

Growth in remittances is central to international economic pressures which might stimulate or impede the development of capital inflows, while other factors that are driving remittance

flows involve migration rate growth, the competitive pressures of the residence nations, and the currency markets of the Nigerian economy. The World Bank expects global growth to slow to 2.6% in 2019. The SSA region received a small portion of world remittances in 2018, with Nigeria accounting for more than one-third of global inflows. Despite reflecting a small percent of global flows, official inflows to sub-Saharan Africa increased by 10% to $46 billion in 2018. The World Bank also forecasts that remittances to the region will rise by 4.2 percent in 2019, due to a slowdown in global growth. According to the International Monetary Fund (IMF), remittances sent to SSA via informal networks account for between 45 and 65 percent of formal flows, which are substantially higher than other countries. Pretty much across the board, remittance flows are expected to continue to increase due to two considerations: estimated robust national trading growth in 2019 and high intra-regional migrant flows from the SSA region. Thus, it is essential that the countries, particularly Nigeria, reap the benefits of this pattern in the sense of structural economic decision-making.

For several decades, governments, analysts, and development organizations didn't offer consideration regarding the idea of payments in form of remittances and its impact on economic progress via institutional quality. At the financial level, it has been indicated that reimbursements in form of remittances additionally give a critical source of overseas money, builds national pay just as account imports (Brown, Carmignani & Fayad,2013). As indicated by the 2018 reports of the world bank, however, revealed as the seventh most elevated beneficiary of internal settlements in form of remittances, Nigeria could just pull in $24.3billion which is 4% of the worldwide authority remittances inflows. Given the above contentions and apparent absence of agreement about the connection between diaspora remittances macroeconomic factors and institutional quality nexus, it along these lines of thought we find the connection between diaspora remittances macroeconomic factors and institutional quality in Nigeria. This paper therefore is divided into five sections. Section I introduction, section II Literature Review, section III Theoretical framework and Methodology, section IV Discussion of findings and section V Conclusions, and policy recommendations.

Literature Review

Countless up-to-date studies utilized quantitative macroeconomic variables to discover the factors that affect remittances. Even though numerous studies are researching diverse aspects of the association among diaspora remittances and the macroeconomic determinants of remittances, little consideration has been paid to experimental proof of investigating the effect of long-term institutional quality and macroeconomic determinants of diaspora remittances inflow in Nigeria with the underdeveloped financial sector and increasing needs for various remittances. A research carried out by Ricciardulli (2019) researched how the government reacts to remittance inflows using IV estimation techniques. The findings indicate that remittance greatly affects government expenditure policies. This finding is compatible with Majeed (2016) analysis which showed that remittances encourage corruption in highly corrupt economies in a sample of 122 countries. Tusalem (2018) included data

conducted by the Philippine National Statistics Office and the National Statistical Coordinating Board of the Philippines. The objective of providing empirical data that the number of immigrants (by region) and the sum of remittances sent through immigrants are directly linked to government effectiveness. Also, Borja 2020 quantitatively demonstrated that remittances have a huge impact on human development and minimize corruption.

Furthermore, Meyer and Shera (2017) noted that remittances surpass FDI flows. The outcome of the study using regression analysis showed that remittances had a significant positive influence on economic progress. However, Cismas, et al. (2020) discovered that the diaspora remittances have insignificant influence in boosting economic development. Hassan and Shakur (2017) examined the effect of internal remittance on per capita (GDP) development in Bangladesh utilizing data from 1976 to 2012. They showed that the forwarding impact of the remittance was negative from the onset and, at a later point, the validation of positive non-direct relationship using regression analysis. They opposed to suggesting a U-shaped connection between remittances and the development of GDP per capita.

On the part of Ofeh and Muandzevara (2017), they studied the impact of remittances on Cameroon's monetary development. They used data from 1980 to 2013 the regression result showed that migrant remittances are significantly linked to money-related development. Notwithstanding, the various examinations have remained on the determining factor of payments from overseas in Nigeria, a large portion of them have concentrated on the microeconomic determining factor of remittances (for example, Nwosu et al., 2012; Olowa et al., 2012). These methods are besides inclined to endogeneity issues.

In contrast to the numerous studies carried out relating to remittances determinants, only a few other types of research have explored a negative link between remittances and other variables. Sebil and Abdulazeez (2015) for example investigated the relationship between remittances and monetary development in Nigeria for the period 1981-2011. They find that remittances significantly influence Nigeria's financial development. As time progresses, the result showed that there is a short-term negative effect. Jebran et al (2016) analyzed the impact of remittances on Pakistan's per capita growth for the period from 1976 to 2013. They used the Lag of ARDL Bounds test methodology to investigate both the short-and long-term relationship between money remittances and PCI. They identified considerable positive relations both in the long term and short-term. This implies that in the long run and short term, their considerable influence of remittances on per capita income. In another study, Meyer and Shera (2017) investigated the effects of remittances on financial development employing a panel of six high-profile remittances to countries: Albania, Bulgaria, Macedonia, Moldova, Romania, and Bosnia-Herzegovina for the time frame 1999–2013. They found out that there is a positive and considerable significant influence of remittances on the money inflows of remittances.

Furthermore, Tabit & Moussir (2016) considered the macroeconomic determining factor of migrants' remittances for 22 unindustrialized nations from 1990-2014. This investigation showed that nation's gross domestic product, the host nation's GDP growth, remittances, and

institutional quality have significant consequences for individual remittances. Despite the fact the migrant's remittances accumulate, the legitimate exchange rate and the actual financing cost of the nation in the short run has an insignificant influence on the remittances. Additionally, Kosse and Vermeulen (2014) examined the determining factor of migrants' decision of remittance means while moving cash to family members abroad. The investigation demonstrated that educational cost and financing cost for development in the nation of origin are the fundamental determinants, while general money preferences and web banking use affect and constrained jobs. Mugumisi (2014) he examined the microeconomic determining factor of remittances stream to Zimbabwe. The examination demonstrates that more established aged and progressively educated immigrants are bound to remit to home nations. Odunga (2016) examined the impact of macroeconomic factors on varieties in migration transfers in Kenya. According to them, remittances have become a significant source of external trade and a key driver of financial development as underscored in the Kenya vision 2030. The examination utilizing regression estimation showed that trade level, loan costs, exchange rates, and RGDP together were accountable for the variety in the estimation of migration remittances at R2 of 63.36%. There is a direct relation between trade rates, financing costs, and migration remittances, while the indirect connection between change rate and migration remittances. Real gross domestic product has no significant relationship with remittances inflow. External trade showed that negotiation would allow investment streams to balance out by the exchange rate differences from medium to long-run periods.

Adigun and Ologunwa (2017) examined remittances in Nigeria and its consequence on economic growth from1980- 2015. The goal of the examination is to take a gander at the connection between remittances and macroeconomic factors. They analyzed the pattern of remittances in Nigeria utilizing regression analysis. They discovered that laborers remit cash to fund the use and projects of their relations. This affects the prosperity of the beneficiaries, however, the effect on financial development are innumerable.

From the review carried out, there is a great need to look at the institutional quality factors and the macroeconomic determining factor of diaspora remittances as it has both long term and short-term implications for the Nigerian economy in the post-Covid era.

Research Methodology

Theoretical Framework and Model Specification

This paper is anchored on the Harrod & Domar Model and the segmented (dual) labor market theory of migration. These theories in development and growth models emerged according to Keynesian writing, growth, and development models (Harrod, 1939, Domar, 1946). As indicated by Keynes in the short run, the prevailing significance of investment is its impact on the prevailing application and the supply of capital. This might remain taken as given and autonomous of it. Be that as it may, over the long run, it tends to change since investment consumption augments capital stock.

The model clarifies the connection between reserve funds proportion (SR), capital-yield proportion (COR), and monetary development (Iyoha et al, 2002). Where the capital-yield proportion (COR) is the capital unit required to create a yield unit, though the investment funds proportion is the all-out reserve funds proportion to national pay. The Harrod – Domar Model is portrayed as a cutting-edge model since it has no worked in stabilizers that will in general move an economy back to a full-business harmony pace of development once it has veered off from it.

Harrod-Domar Growth Model is elementary hypothesizes that alterations in national income ΔY be contingent directly on changes in capital stock K and that speculation or changes in capital stock is financed out of household reserve funds S in the shut economy rendition of the model i.e ΔK = S. The model states that household investment funds S itself rely upon national salary Y, for example

S = sY, where s is the sparing proportion of salary:

ΔY = bΔK

ΔK = S = sY

Substituting

ΔY/Y = sb

In light of the hypothetical model of this examination and using an adapted model to deal with model specification, the model is framed and augmented with different factors. The model was adapted from the work of Tabit and Moussir (2016); Odunga (2016) and Adigun and Ologunwa (2017). To accomplish the goal of finding out the effect of dynamic interactions of macroeconomic determinants on diaspora remittances inflow in Nigeria, the ARDL model is composed and the functional is written below as:

$$\text{Rem} = f(Gdp, Exr, Nmi, Infr, Intr, Unem, cc, Ps, Rq) \quad (3.1)$$

In an econometric form, this functional relationship using the ARDL is written below as:

$$Rem = \beta_0 + \beta_1 Gdp + \beta_2 Exr + \beta_3 Infr + \beta_4 Intr + \beta_5 Unem + \beta_6 Nmi + \beta_7 Cc + \beta_8 Ps + \beta_9 Rq + \mu \quad (3.2)$$

$$Gdp = \beta_0 + \beta_1 Rem + \beta_2 Exr + \beta_3 Infr + \beta_4 Intr + \beta_5 Unem + \beta_6 Nmi + \beta_7 Cc + \beta_8 Ps + \beta_9 Rq + \mu \quad (3.3)$$

$$Exr = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Infr + \beta_4 Intr + \beta_5 Unem + \beta_6 Nmi + \beta_7 Cc + \beta_8 Ps + \beta_9 Rq + \mu \ldots\ldots (3.$$

$$Infr = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Exr + \beta_4 Intr + \beta_5 Unem + \beta_6 \text{Nmi} + \beta_7 Cc + \beta_8 Ps + \beta_9 Rq + \mu \ldots\ldots (3.5)$$

$$Intr = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Exr + \beta_4 Infr + \beta_5 Unem + \beta_6 Nmi + \beta_7 Cc + \beta_8 Ps + \beta_9 Rq + \mu \ldots\ldots (3.7)$$

$$Unem = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Exr + \beta_4 Infr + \beta_5 Intr + \beta_6 Nmi + \beta_7 Cc + \beta_8 Ps + \beta_9 Rq + \mu \ldots\ldots (3.8)$$

$$Nmi = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Exr + \beta_4 Infr + \beta_5 Intr + \beta_6 Unem + \beta_7 CC + \beta_8 Ps + \beta_9 Rq + \mu \ldots\ldots (3.9)$$

$$CC = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Exr + \beta_4 Infr + \beta_5 Intr + \beta_6 Unem + \beta_7 Nmi + \beta_8 Ps + \beta_9 Rq + \mu \ldots\ldots (3.10)$$

$$Ps = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Exr + \beta_4 Infr + \beta_5 Intr + \beta_6 Unem + \beta_7 Nmi + \beta_8 Cc + \beta_9 Rq + \mu \ldots\ldots (3.11)$$

$$Rq = \beta_0 + \beta_1 Rem + \beta_2 Gdp + \beta_3 Exr + \beta_4 Infr + \beta_5 Intr + \beta_6 Unem + \beta_7 Nmi + \beta_8 Cc + \beta_9 Ps + \mu \ldots\ldots (3.12)$$

Where:

Rem: Migrant remittances recognized equals the proportion of gross domestic product;

Gdp: Domestic nation's gross domestic product per capita

Exr = Domestics exchange rate

Infr = Domestic inflation rate;

Intr = the interest rate of the domestic nation.

Unem = the Nigerian unemployment rate

Nmi = Net migration of home country

PS = Political Stability and Absence of Violence / Terrorism represented by institutional quality

Rq= Regulatory quality represented by institutional quality.

Cs= Control of corruption

$\beta 0$=constant term or intercept

β_1-β_9 =Slope of the parameter estimates or coefficient.

μ = stochastic error term with the usual normality assumption

To accomplish the research hypothesis of evaluating the effect of institutional quality on the remittance inflow in Nigeria. Institutional quality in this study is represented by political

stability and the absence of violence/terrorism, regulatory quality, and control of corruption while remittances are represented by total inflows of remittances in Nigeria.

Estimation Techniques

ARDL Technique

This examination utilized the unit root test to analyze the stationarity or non-stationarity of the individual factors established from the model above. This is since most econometric examinations throughout the years have indicated that generally monetary and macroeconomic factors used often exhibit non-stationary and using such prompts misleading results as clarified by Engel and Granger (1987). In this investigation, the utilization of the Augmented Dickey-Fuller was tested embraced the individual data collection. The test was performed dependent on the accompanying model:

$$\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \sum_{i=1}^{n} \alpha_1 \Delta y_i + e_t$$

Hence,

Δ =first difference operator

n = optimal number lags

et= disturbance term chosen as a white noise error,

y= time series that is the dependent and the independent variables

ADF means Augmented Dickey-Fuller at 5% level

After determining the level of stationarity of the variables, the Auto-Distributed Lag Model (ARDL) is used to examine long-term and dynamic interactions between the institutional quality and macroeconomic determinants of diaspora remittances inflow in Nigeria. The ARDL model to multivariate cointegration test results or a bound cointegrating methodology is used when a single co-integrating vector exists. The model of co-integration of Johansen and Juselius (1990) was not used in this analysis since the state of stationarity of the variables. Consequently, Pesaran and Shin (1995) and Pesaran et al (1996b) suggested the ARDL technique of long-term co-integration testing, regardless of the macroeconomic indicators I (0), I (1), or a combined effect of the same. In the case that a cointegrating vector is visible, the ARDL form of the cointegrated vectors is re-parameterized into the Error Correction Mechanism.

Sources, Description, and Measurement of Variable

The type of data to use in the analysis is secondary times series data gotten from the CBN bulletin, World governance indicators, and World bank Data base 2018 which are all expressed in their respective units in terms of the units of measurement of the variables captured in the model.

Discussion of Result

Unit Root Test

Most economic variables are volatile and possess unit root properties which if used for estimation may likely lead to spurious results. Hence, the need to ascertain the stationarity of the variables to ensure reliable estimations. This work was used by the Augmented Dickey-Fuller (ADF) to uncover the stationarity condition of the parameters. The Augmented Dickey-Fuller test is utilized to evaluate whether or not the measurements of the identified explanatory variables are static. The measurements were very well-thought-out if the maximum value derived from the ADF test is greater than the absolute MacKinnon factors. However, relevant factors have been considered non-stationary if the exact value of the unit root test is not equal to that of the MacKinnon values in real numbers. The alternative hypothesis for the response variable has the root unit.

Table 1: Augmented Dickie Fuller Unit Root Test

ADF Unit Root Test			
Variables	***Levels***	***1st Difference***	**Order**
REM	-1.4438	-6.1804 *	I1
GDP	-0.5512	-3.5172 **	I1
EXR	-1.9799	-4.1101 *	I1
INFR	-2.8592	-5.5147 *	I1
INTR	-7.0680 *	-9.5410 *	I0
NMI	-2.6269	-8.6280 *	I1
UNEM	-2.0898	-4.2487 *	I1
CC	-1.3061	-5.8897 *	I1
PS	-0.8476	-6.3937 *	I1
RQ	-1.5193	-6.3285 *	I1

Critical Values	*ADF z(t)*	
1%	5%	10%
-3.63	-2.94	-2.61

Source: Author Computation, 2020

The ARDL estimation analysis depends on the data elements of the time series as presented in table 1 above. It is to guarantee that the integration order of the stationary is independent of the I (2) sequence to avoid misleading data that are unstable and contradictory. Our factors of interest predetermined sequence incorporate both levels I (0) and 1st difference I (1) for the ADF test. Abstruseness in the integration order of the sequence supports the use of such an ARDL bound test above all other alternative cointegrating vector methods. Hence this study adopts the Autoregressive distributed lag (ARDL) estimation method. The result of the unit root signifies a stationary at levels for interest rate while all other variables became stationary after first differencing at a 5% significance level. Hence, remittances, GDP per capita,

exchange rate, inflation rate, net migration, unemployment, and all institutional quality variables adopted are the I1 series.

Table 2: Lag Length Criteria

Lag	Log L	LR	FPE	AIC	SC	HQ
0	-1295.739	NA	1.20e+20	74.61364	75.05802	74.76704
1	-1024.614	371.8278*	8.48e+15	64.83510	69.72333*	66.52252
2	-885.1209	111.5947	4.59e+15*	62.57834*	71.91043	65.79977*

Source: Author Computation, 2020

Bound Test for Long run Cointegration

This study performs the ARDL bound testing but with prior analysis of the lag length selection using the lag length criteria of the unrestricted VAR model. The consistency of the sequential modified final prediction error, Akaike information criterion, and the Hannan-Quinn information criterion suggests this study adopts a lag of 2 for its estimation. The subsequent results examine whether there is long-term convergence between the different factors that were examined. This finding is provided in the table below, showing the long-term result of the ARDL bound statistical test, and estimating the Bound test co-integration method for our model. The outcomes demonstrate that there is long-term convergence between the obtained remittances and the selected macro-economic variables. The bound test value of the statistic f is greater than the critical bound I1 at a 5 percent point of significance. This implies the existence of a long-term correlation between the independent under examination.

Table 3: ARDL Bound Test

Null Hypothesis: No Long-Run Relationships Exist		
Test Statistics	**Value**	**k**
F-statistics (M1)	3.340	9
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	1.8	2.8
5%	2.04	2.08
2.5%	2.24	3.35
1%	2.5	3.68

Where k is the number of regressors

Source: Author Computation, 2020

Table 4: Long Run Result for the impact of selected macroeconomic variables on remittances received in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
REM (-1)	-0.8954	0.2333	-3.8384	0.0033
GDP	-0.0052	0.0019	-2.6535	0.0292
EXR	0.0050	0.0013	3.7267	0.0041
INFR	-0.1193	0.0595	-2.0049	0.0728
INTR	-0.1841	0.0703	-2.6201	0.0256
NMI	0.0000	0.0000	2.2404	0.0490
UNEM	0.1979	0.1336	1.4814	0.1693
CC	8.2440	2.5690	3.2090	0.0093
PS	-8.6683	2.3128	-3.7480	0.0038
RQ	-0.3607	2.8919	-0.1247	0.9032
C	11.2107	4.9404	2.2692	0.0466

Source: Author Computation, 2020

Table 5: Short Run Result for the impact of selected macroeconomic variables on remittances received in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (REM (-1))	0.2590	0.0993	2.6083	0.0261
D(EXR)	-0.0034	0.0019	-1.8218	0.0985
D (EXR (-1))	0.0064	0.0026	2.4669	0.0333
D(INFR)	-0.0551	0.0139	-3.9730	0.0026
D (INFR (-1))	0.0363	0.0095	3.8039	0.0035
D(INTR)	-0.0478	0.0175	-2.7278	0.0213
D (INTR (-1))	0.0251	0.0097	2.6032	0.0263
D(NMI)	0.0000	0.0000	2.1091	0.0611
D(UNEM)	0.6253	0.1248	5.0116	0.0005
D(CC)	-1.1865	1.4005	-0.8472	0.4167
D (CC (-1))	-2.5478	0.7941	-3.2085	0.0094
D(PS)	-2.7340	0.8524	-3.2075	0.0094
D (PS (-1))	3.8735	0.7369	5.2565	0.0004
D(RQ)	7.5195	0.9708	7.7454	0.0000
CointEq(-1)*	-0.8954	0.1045	-8.5714	0.0000
R-squared	0.8750	Mean dependent var		0.1669
Adjusted R-squared	0.7875	S.D. dependent var		1.3542
S.E. of regression	0.6243	Akaike info criterion		2.1932
Sum squared resid	7.7952	Schwarz criterion		2.8598
Log likelihood	-23.3807	Hannan-Quinn criter.		2.4233
Durbin-Watson stat	2.4682			

Source: Author Computation, 2020.

Discussion of Results and Comparison with the Previous Study

The investigation of the long run interactions amongst institutional quality and macroeconomic determinants of diaspora remittances in Nigeria was achieved using the ARDL bound cointegration test. From the bound test, the f – statistics is greater than the I1 critical bound at 5%. This affirms that there are long-term institutional quality and macroeconomic determinants of diaspora remittances in Nigeria. The outcome of this examination is obtainable in table 4 and 5 that showed both the short and long-run relationship of institutional quality and macroeconomic determinants of diaspora remittances in Nigeria. From the long-run result, remittances received at first lag showed a negative significant relationship with the current level of remittances which signifies and buttresses the point that a larger percent of remittance received is consumed and does not contribute to the current level of remittances. For the macroeconomic determinants, while GDP per capita of the home-based country, inflation rate, and interest rate exerts a negative relationship, exchange rate, net migration exerts a positive significant relationship with remittances received. However, unemployment exerts a non-significant relationship with remittances.

Precisely, the findings show that a 1 % rise in GDP per capita leads to a reduction in remittance received by 0.005% in Nigeria. This result implies that a propelling economic growth in Nigeria will likely reduce the incentives for citizens living in Nigeria to seek financial aid from family and friends residing abroad. This means that the higher the growth of the home country the lesser the remittances generated as shown for the developed nations and the case of emerging nations specifically African countries. Also similar is the result of the inflation rate and the rate of interest. These results show that a 1% in the inflation rate will reduce remittance by 0.119% and similarly a 1% rise in interest rate exert a 0.184% reduction in remittances received. This result implies that when inflation increases the value of remittances received will likely deteriorate.

In contrast to the result, the exchange rate shows a positive significant relationship with remittances inflows in Nigeria. This implies that a 1% increase will increase remittances by 0.005% because if there is a higher exchange rate discrepancy among the domestic country and the host country of the sender, remittances received by the home country is expected to increase. The result of net migration is also synonymous with that of the exchange rate because a higher exchange rate differential is one of the propellants of outward migration present in Nigeria. A 1% increase in a net migration increase remittances by 0.0000103 % because people abroad want to compensate back the family and friends in the home country. The result of unemployment shows insignificant. In conclusion, this result implies that in the long run, macroeconomic determinants are significant factors determining remittances received.

While the above explanations centered on the long-run impact of institutional quality on macroeconomic determinants of diaspora remittances, the short-run results clearly showed the presence of short-run implications. In essence, the coefficients of the cointegrating equation are negative and significant at the 5% level. Hence, the speediness of adjustment

from an earlier long run disturbance is 0.90%. This shows that the speed of adjustment is very rapid. Precisely, for the nature of relationships, the exchange rate at its first lag, inflation at current and first lags, the interest rate at current and first lag, and unemployment at the current period are significant determinants of remittances at a 5% level of significance.

Furthermore, institutional quality represented by control of corruption, political stability, and the regulatory quality shows that only control of corruption and political variable has significant relation although with an unequal sign with remittances received in Nigeria while the result of regulatory quality is non-significant. Specifically, a 1% increase in control of corruption will reduce remittances by 8.24%. This implies that the fear of funds remitted to the home country been used against the purpose for which it was sent is a major hindering factor of getting remittances. Hence, if these barriers are eliminated and corruption levels are reduced remittances will increase. For political stability, an increase in political unrest in the home country is likely to reduce the level of remittances received. This is because of the fear of loss of investment that is sometimes associated with countries with high political instability. In conclusion, this result concludes that increasing levels of institutional quality is a relevant determinant of remittances received in Nigeria. The consequence of this investigation in tandem with the work of Tabit and Moussir (2016) that demonstrated that the host nation's GDP, inflation rate, monetary development, and institutional quality had huge impacts on the home country remittances.

Moreover, Marwan et al. (2013) utilize the Johansen co-integration method within the Solow-model framework to deal with the role of export, FDI, and remittances relative to financial development in Sudan. The investigation discovered long runs a positive connection between remittances and the growth of the Sudan economy. Our findings made is additionally reliable with the work of Hasan and Hashmi (2015) who investigated the factors affecting worker remittance of Bangladesh. The outcomes indicated that any adjustments in the quantity of the work power, customer value file (CPI), import, government spending, and d energy about host nations' money can affect the internal remittances pay of Bangladesh.

Besides, the outcome of our studies likewise is consistent with the work of Odunga (2016) who explored the impact of macroeconomic factors on varieties in diaspora remittances in Kenya. The outcome indicated that there is an immediate connection between trade rates, financing costs, and diaspora remittances while the circuitous connection between exchange rate and diaspora remittances. Regarding the GDP, the outcome is conversely as Odunga (2016) found no huge relationship for financial development.

Policy Recommendations and Conclusion

From the findings deduced from our research, it is concluded that macroeconomic variables such as exchange rate, inflation, GDP, unemployment rate, and interest rate are critical determinants of remittance inflows in Nigeria. Total net migration from the findings is also a critical factor influencing the volumes of remittances inflow in Nigeria. This study further

concluded that increasing levels of institutional quality is a germane factor of remittances acknowledged in Nigeria. Therefore, the control of corruption, political stability, and regulatory quality in Nigeria is likewise identified as relevant factors affecting the remittances inflows into the country. Hence, it is suggested that: the legislature should give the incentive to nationals living abroad to send out to the nation for business and help to relative deserted.

To pull in more remittances, policymakers should think progressively about actualizing steady and master development strategies. It is, consequently, prescribed to devise methodologies planned for accomplishing a higher and continued pace of financial development, improved budgetary market improvement, and stability of macroeconomic variables in Nigeria.

The government in all her capacity must improve on the governance and effectiveness in terms of institutional quality. The outcome reflects that the three measurements of institutional quality in control of corruption, political stability, and regulatory quality show that control of corruption and political stability have significant relation although with an unequal sign with remittances received in Nigeria. Even though, the result of regulatory quality is non-significant. The government must make the institutions free of corruption and work towards the achievement of political stability as it has larger implications on the remittance's inflows in Nigeria. The stability of macroeconomic outcomes both in the short run and the long run is critical towards the improvement of remittances inflows in Nigeria.

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Appendix

Column1	Column2	Column3	Column4	Column5	Column6	Column7
YEAR	GDP	INFR	NMI	REM	REM2	EXR
1981	1741.715	20.81282	0	0.009843	16188874	323.5215
1982	1581.562	7.697747	-671640	0.012481	17818397	331.7945
1983	1373.537	23.21233	-671640	0.014217	13804340	392.7125
1984	1324.297	17.82053	-671640	0.015978	11741263	541.4648
1985	1367.119	7.435345	-671640	0.013655	10069659	486.7959
1986	1332.805	5.717151	-671640	0.00728	3989688	265.927
1987	1339.813	11.29032	-91407	0.0052	2739018	84.7129
1988	1400.734	54.51122	-91407	0.004883	2424527	86.04183
1989	1390.805	50.46669	-91407	0.023143	10183666	76.96334
1990	1515.013	7.3644	-91407	0.018522	10008540	71.61963
1991	1482.221	13.00697	-91407	0.133442	65544714	60.57468
1992	1512.248	44.58884	-95769	0.118105	56448404	50.16845
1993	1444.846	57.16525	-95769	2.857986	7.93E+08	54.87048
1994	1383.689	57.03171	-95769	1.625253	5.50E+08	101.4317
1995	1348.681	72.8355	-95769	0.567474	2.50E+08	161.4496
1996	1370.726	29.26829	-95769	0.580681	2.97E+08	209.2543
1997	1376.302	8.529874	-95027	1.075582	5.86E+08	238.0315
1998	1377.09	9.996378	-95027	0.821453	4.49E+08	275.294
1999	1350.984	6.618373	-95027	2.19134	1.30E+09	69.77832
2000	1383.666	6.933292	-95027	2.004105	1.39E+09	70.75906
2001	1429.197	18.87365	-95027	1.57586	1.17E+09	78.8467
2002	1607.238	12.87658	-170000	1.267441	1.21E+09	79.1034
2003	1682.1	14.03178	-170000	1.01306	1.06E+09	74.29869
2004	1791.262	14.99803	-170000	1.666399	2.27E+09	75.97681
2005	1857.926	17.86349	-170000	8.311897	1.46E+10	87.03164
2006	1919.724	8.239527	-170000	7.171478	1.69E+10	92.28545
2007	1993.097	5.382224	-300000	6.535832	1.80E+10	91.35623
2008	2072.273	11.57798	-300000	5.697714	1.92E+10	100.4769
2009	2179.989	11.53767	-300000	6.293032	1.84E+10	92.65123
2010	2292.445	13.7202	-300000	5.43392	1.97E+10	100
2011	2350.337	10.84003	-300000	5.02441	2.06E+10	100.529
2012	2384.954	12.21778	-300000	4.471927	2.05E+10	110.5187
2013	2476.864	8.475827	-300000	4.038542	2.08E+10	117.41
2014	2563.9	8.062486	-300000	3.659826	2.08E+10	124.489
2015	2563.149	9.009387	-300000	4.27789	2.12E+10	119.0393
2016	2456.306	15.67534	-300000	4.863317	1.97E+10	110.1676
2017	2412.367	16.52354	-300000	5.855216	2.20E+10	100.8174

INTR	UNEM	PS	RQ	CC
-65.8571	7.062	0	0	0
-4.58618	7.062	0	0	0
-8.02239	7.062	0	0	0
4.342493	7.062	0	0	0
2.343231	7.062	0	0	0
4.310292	7.062	0	0	0
-4.76964	7.062	0	0	0
-2.96268	7.062	0	0	0
-6.61241	7.062	0	0	0
17.46624	7.062	0	0	0
0.990847	7.062	0	0	0
-14.9872	6.86	0	0	0
-7.05247	7.367	0	0	0
-15.9202	7.665	0	0	0
-31.4526	7.562	0	0	0
-5.26078	7.63	-1.05546	-0.96823	-1.18901
12.12661	7.715	-1.05546	-0.96823	-1.18901
11.48467	7.749	-0.58637	-0.95247	-1.15775
6.047248	7.779	-0.58637	-0.95247	-1.15775
-1.14089	7.706	-1.45614	-0.74795	-1.21868
12.1387	7.964	-1.45614	-0.74795	-1.21868
3.023542	8.264	-1.62512	-1.21619	-1.43123
9.935713	8.291	-1.634	-1.24547	-1.36208
-2.60485	8.068	-1.75399	-1.35197	-1.34182
-1.59368	8.04	-1.66719	-0.76062	-1.15872
-5.62797	7.792	-2.03414	-0.90726	-1.12363
9.187171	7.575	-2.01133	-0.88902	-1.053
6.684909	7.724	-1.86063	-0.80224	-0.89188
18.18	8.58	-1.99507	-0.74609	-1.03173
1.067736	8.84	-2.21112	-0.72745	-1.04892
5.68558	9.436	-1.95645	-0.68118	-1.17297
6.224809	10.042	-2.04207	-0.71244	-1.16913
11.20162	10.895	-2.08848	-0.65963	-1.22126
11.35621	13.479	-2.13028	-0.81638	-1.2747
13.59615	16.626	-1.92544	-0.85052	-1.07939
6.686234	19.909	-1.87771	-0.91889	-1.02501
5.790567	19.277	-1.99883	-0.8855	-1.07675

Sources: World Bank and World Governance, 2017.