



REMITTANCES AND ECONOMIC GROWTH: AN EMPIRICAL ANALYSIS FROM NIGERIA

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Abstract

This paper examines the nexus amid remittances and economic growth in Nigeria. The paper employed ARDL techniques to evaluate the time-series data covering 1986-2021 sourced from World Development Indicator (WDI, 2021). The findings show that 1% increase in remittances would result in a 0.32% increase in GDP over the long term, according to our model's results, which provide support for the "view upheld by contemporary development financial analysts that international remittance inflows are one of the major macroeconomic factors that significantly promote long-run economic growth in globalized countries. One possible policy conclusion from this study is that Nigeria can boost its economic growth performance by encouraging remittances and exchange rate stability as well as investing in more conventional growth sources like foreign direct investment (FDI), since the study found that FDI is one of the key factors that can spur growth in Nigeria.

Keywords: *economic growth, ARDL, WDI, remittance, macroeconomics, FDI.*

Introduction

Considering a remittance inflow, labor migration from one nation to another has been a significant source of foreign funding and has been growing significantly every day. The economy of most developing nations around the world has been shown to be significantly impacted by international remittances, which are regarded as a crucial component in lowering poverty, redistributing money, and promoting economic progress (Ojha, 2019). Remittances are sent to the home country through both official and unauthorized methods (Dolapo, 2015).

Economic growth is impacted by the financial sector, which is impacted by remittances made solely through formal channels (Escribà-Folch et al., 2022).

The global economy is predicted to reduce the remittance influx of developing and rising nations because of the COVID-19 pandemic's exceptional severity and the conflict between Russia and Ukraine. Particularly in poor and developed nations, remittances can have a significant impact on household income because without them, people experience poverty, malnourishment, and illiteracy. Numerous studies demonstrate that remittance inflows might deprive families in developing countries of stability and resilience (World Bank, 2022).

In poor and emerging countries, primarily in South Asia and Africa, remittances account for a significant amount of household income. Nigeria's economy is the focus of this study in particular because of the country's high labor migration rate. These workers improve national savings, support the development budget, and directly or indirectly ensure stable foreign exchange rates and balance of payments. Remittance inflow may be a terrific way to alleviate the curse of poverty, but it has drawbacks as well. For example, countries lose trained personnel due to brain drain, which hinders economic progress (Topxhiu et al., 2017). Because they have an impact on foreign exchange rates, remittances can impede economic progress.

This study focuses on the Nigerian economy, which is influenced by labor migration and remittance inflow, due to the lack of reliable and accessible statistics. The remittance to GDP ratio is used in this study as a variable to show how much remittances contribute to the expansion of the Nigerian economy. The information was gathered between 1986 and 2022. Furthermore, this study is unique in that it uses sophisticated econometric techniques to examine the rising economy. The World Development Index was used to gather data (WDI). Researchers are now studying large African countries because of recent evidence of the beneficial effects of remittances on the economic development of these countries (Nsiah et al., 2011). First, an overview of the purpose of this paper that is, the effect of remittances on the economic development of developing African countries has been established. Second, a thorough review of pertinent literature was created. Following a review of the literature, the methodology section made decisions regarding the study's variables, model identification, hypothesis development, and procedures. Particularly in poor and growing nations, remittances can have a significant impact on household income since without them, people face poverty, starvation, and illiteracy. Numerous studies demonstrate that remittance inflows might deprive families in developing countries of stability and resilience (World Bank, 2022). Remittances provide for a significant amount of household income in emerging nations, most of which are

in Africa. Remittance inflow may be a terrific way to alleviate the curse of poverty, but it has drawbacks as well. For example, countries lose trained personnel due to brain drain, which hinders economic progress (Topxhiu et al., 2017). Because they have an impact on foreign exchange rates, remittances can impede economic progress. The results are pertinent to the study's goal, which is to encourage remittances that significantly influence the economic development of African countries.

Literature Review

For many developing countries, especially those in South Asia and Africa, remittances of the money sent home by those who work overseas have been a major source of revenue. Understanding how remittances affect economic growth and poverty alleviation in these areas has drawn increasing attention. Econometric models are used in this field of study. The findings of these studies have been conflicting; while some have found no significant association or even a negative influence, others have identified a beneficial impact of remittances on poverty reduction and economic growth. The intricate connection between remittances, economic progress, and poverty alleviation is one factor contributing to the contradictory findings. On the one hand, by raising demand for products and services, remittances can give people a steady source of income and support economic growth. However, the "Dutch disease" effect, which occurs when a foreign currency inflow causes the value of the home currency to rise and the export industry's competitiveness to decline, can result from remittances (Ratha et al., 2020; Adekunle et al., 2023; Bekun et al., 2023; Adekunle, 2023). Reduced economic growth and poverty alleviation may result from this. This study's goal is to find out how remittances affect the economic development of African countries. Given that the objective of this article is economic growth, even if there are several studies examining the effects of remittances, this paper will only evaluate pertinent and appropriate research to obtain a greater understanding of the chosen subject matter.

The most studied feature of remittances in recent decades has been their impact on economic growth. This is because remittances can have a variety of impacts on economic growth in addition to their political significance. A positive view of the effect of remittances on growth is supported by certain studies. First, Pradhan et al. (2008) use panel data from 1980 to 2004 to examine how remittances affect economic growth in 39 developing nations. Remittances have a favorable impact on economic growth, according to their research, however the effect is not very significant. Cooray (2012) investigated the relationship between remittances and

economic growth in South Asia using panel data covering the years 1970–2008. His findings showed a strong and positive correlation between remittances and economic growth. Uddin et al. (2020) examined how remittances affected the economic development of five chosen South Asian nations between 1975 and 2017. They discovered a positive correlation between remittances and economic growth, with remittances acting as a catalyst for economic expansion. They concluded that remittances significantly boost economic growth, perhaps because of the spending multiplier effect brought on by South Asia's enormous population. Jawaid et al. (2016) used long-term time series data from 1975 to 2009 to investigate the effect of remittances on economic growth in five South Asian countries. They discovered that remittances had a significant negative impact on economic growth in Pakistan, but a positive and significant impact on economic growth in Bangladesh, India, Sri Lanka, and Nepal over the long run. Azam (2015) investigated how remittances affected economic growth in Bangladesh, India, Pakistan, and Sri Lanka and discovered that they had a beneficial effect on each of the four nations' economies. The impact of remittances on economic growth in Bangladesh was examined by Datta et al. (2014) using an autoregressive distributed lag. They discovered that, while there might be a long-term relationship between the two, there isn't a predictive causal relationship in the short or long term. Using a panel data set of six high-remittance-receiving countries from 1999 to 2013, Meyer et al. (2016) investigated the impact of remittances on economic growth. They discovered that remittances have a positive impact on economic growth, especially when they represent a larger percentage of GDP. This underscores the significance of remittances being used effectively to ensure sustained economic growth. Remittances can only support long-term economic growth in nations with excellent political and economic policies, sound governance, and favorable socioeconomic conditions, according to Catrinescu et al. (2009), who looked at the effect of remittances on the economic growth of 162 countries over a 34-year period. Comes et al. (2018) used panel data from seven countries for the 2010–2016 period to examine the relationship between remittances, foreign direct investment (FDI), and economic growth in Central and Eastern Europe. The impact of remittances and other control variables on the economic growth of African, Asian, and Latin American-Caribbean countries from 1985 to 2007 was examined by Nsiah et al. (2011) using panel data analysis. They found that remittances, economic openness, and the capital-labor ratio had a positive and significant effect on economic growth across all regions, with the Asian region experiencing the greatest impact due to differences in transaction costs and remittance utilization. According to this analysis, FDI and remittances both boosted

economic growth in each of the seven nations. Remittance inflows and economic growth in Nigeria were examined by Akinpelu et al. (2013), who discovered a long-term equilibrium between GDP and remittance inflows, the currency rate, foreign direct investment, openness, and capital creation. Using data from 1972 to 2009, Assaf et al. (2014) examined the macroeconomic factors influencing worker remittances to Jordan using both auto-regressive distributed lag and Vector error correction model approaches. They found that external factors particularly income levels and exchange rates had a stronger impact on remittance flows to Jordan than internal factors like inflation and interest rates. Remittance inflows and economic growth in Nigeria were examined by Akinpelu et al. (2013), who discovered a long-term equilibrium between GDP and remittance inflows, the currency rate, foreign direct investment, openness, and capital creation. Using data from 1972 to 2009, Assaf et al. (2014) examined the macroeconomic factors influencing worker remittances to Jordan using both auto-regressive distributed lag and Vector error correction model approaches. They found that external factors particularly income levels and exchange rates—had a stronger impact on remittance flows to Jordan than internal factors like inflation and interest rates. Conversely, Chami et al. (2005) showed that remittances had a negative influence on GDP growth in a study of 113 nations during a 29-year period from 1970 to 1998, showing that the role of remittances is more altruistic than profit-driven. Real per capita output growth and migrant remittances in 101 countries between 1970 and 2003 did not significantly correlate, according to the International Monetary Fund (2005). Using a panel dataset of 33 developing countries over the period 2003-2014, Ferdaous (2016) found that remittances had a significant negative impact on economic growth, likely because only a small proportion of remittances received in developing countries are utilized for productive purposes. Furthermore, Barajas et al. (2009) found no discernible effect of worker remittances on economic growth in underdeveloped nations using a panel dataset covering 84 countries from 1970 to 2004. Pradhan (2016) examined a balanced panel of data from 1994 to 2013 for five rising economies and found that remittances and economic growth had a favorable association in China, a negative influence in Brazil, India, and Russia, and an insignificant effect in South Africa. Sutradhar (2020), remittances have a negative correlation with economic growth in Bangladesh, Pakistan, and Sri Lanka but a positive correlation in India, presumably because remittances are used more profitably there than in other nations. Remittances initially had a negative impact on Bangladesh's per capita GDP development, but over the years 1976–2012, the effect turned positive, according to Hasan et al. (2017). According to Shaikh et al. (2016), throughout the

35-year period from 1980 to 2014, personal remittances had no impact on Pakistan's economic growth. Oshota (2014) looked at the effect of remittances on Nigeria's economic growth from 1981 to 2011, they found that they had a positive influence in the long run but a negative effect in the near term. When Tolcha et al. (2016) looked at the influence of remittances on Ethiopia's economic growth from 1981 to 2012, they discovered that they had a short-term positive effect and a long-term negative effect. Karagoz (2009) examined the relationship between workers' remittances and economic growth in Turkey in a study that covered the years 1970–2005. The findings showed a negative association between the two. According to certain research, there is no connection between remittances and economic expansion. Based on time-series data spanning 25 years, Siddique et al. (2012) used Granger causality tests to examine the relationship between remittances and economic growth in Bangladesh, India, and Sri Lanka., While there was no correlation between remittances and economic growth in India, they found that remittances had an impact on economic growth in Bangladesh and that there was a two-way causality between growth and remittances in Sri Lanka. According to studies, because remittances can promote both economic growth and human development, they may help lower poverty rates. Remittances have generally been demonstrated to have a beneficial impact on reducing poverty; nevertheless, other research has revealed a negligible correlation between the two. Remittances' effect on reducing poverty is therefore intricate and multifaceted. In their analysis of 39 countries across different income categories from 1990 to 2014, Azam et al. (2016) found that international remittances significantly improved poverty reduction in upper-middle-income nations. Remittances had a marginally positive and significant impact on economic growth, but an inverse relationship with poverty, according to Abduvaliev et al. (2020) study. They concluded that promoting remittances should not be the only development strategy due to potential disadvantages like lower government spending on welfare, a lack of institutional reform, moral hazard, and brain drain. With changes in the percentage of migrants working overseas and the number of official remittances sent home impacting poverty levels in these countries, Adams (2005) showed that international migration and remittances had a statistically significant impact on lowering poverty levels in the developing world. Remittances have a direct impact on reducing poverty and improving financial development in sub-Saharan Africa (Gupta et al., 2009). Migrant transfers help households with their immediate budgetary constraints and give small savers access to the formal financial sector. Javid et al. (2012) examined the effects of remittances on poverty and economic growth in Pakistan between 1973 and 2010 using an autoregressive distributed lag approach. They discovered that remittances

have a strong and significant impact on poverty reduction and a positive and significant relationship with economic growth. Remittance inflows can therefore have a positive impact on the receiving nation's social and economic circumstances. On the other hand, the International Monetary Fund revealed in 2005 that, although having little effect on economic growth, using remittances to finance necessities might greatly lower poverty. Petreski et al. (2013) examined how remittances affected self-employment, poverty, and inequality in three Balkan countries: Macedonia, Kosovo, and Bosnia-Herzegovina. According to their research, remittances helped reduce poverty in Macedonia and Kosovo but not in Bosnia. According to Serino and Kim's (2011) quantile regression research, the impacts of overseas remittances on poverty in 66 developing nations between 1981 and 2005 are not consistent across poverty quantiles.

Method

The Gross Domestic Product (GDP), which is a measure of economic growth, was utilized as the dependent variable to examine how remittances affect economic growth in Africa. Remittances, foreign direct investment, inflation, health spending, enrollment in secondary school, human development, migration, trade openness, and government size were among the independent factors. The primary independent variable was remittance, while the remaining variables served as control variables (Table 1). The Gross Domestic Product (GDP), which is a measure of economic growth, was utilized as the dependent variable in order to examine how remittances affect economic growth in Africa. Remittances, foreign direct investment, inflation, health spending, enrollment in secondary school, human development, migration, trade openness, and government size were among the independent factors. The primary independent variable was remittance, while the remaining variables served as control variables (Table 1). Corresponding econometric models were developed to examine the relationship between remittances and economic growth, data were collected from the World Bank Open Data which covered 1986-2021.

The study used the Autoregressive Distributed Lag (ARDL) bounds testing technique, as described in Pesaran et al. (2001), to confirm the integration order and determine the long-term relationship between the variables. Compared to previous cointegration techniques, this strategy offers several advantages. It might be applied, for instance, to small sample sizes and mixed integration orders. Additionally, endogeneity problems can be fixed by utilizing the

appropriate lag in the model architecture. An infinite error correction model was used to estimate the ARDL bounds testing method.

$$Gdp = f(Rem, Fdi, Urp, Excr) \quad 1$$

$$Gdp = \phi_1 + \phi_2 Rem + \phi_3 Fdi + \phi_4 Urp + \phi_5 Excr + \mu \quad 2$$

$$\begin{aligned} \Delta Gdp = & \phi_0 + \sum_{m=1}^J \cdot \phi_{1m} \Delta Gdp_{t-n} + \sum_{m=1}^J \cdot \phi_{1m} \Delta Rem_{t-n} + \sum_{m=0}^J \cdot \phi_{2m} \Delta Fdi_{t-n} \\ & + \sum_{m=0}^J \cdot \phi_{4m} \Delta Urp_{t-n} + \sum_{m=0}^J \cdot \phi_{5m} \Delta Excr_{t-n} + \partial_1 Gdp_{t-1} + \partial_2 Rem_{t-1} \\ & + \partial_3 Fdi_{t-1} + \partial_4 Urp_{t-1} + \partial_5 Excr_{t-1} + \mu \end{aligned} \quad 3$$

$$\begin{aligned} \Delta Gdp = & \phi_0 + \sum_{m=1}^J \cdot \phi_{1m} \Delta Gdp_{t-n} + \sum_{m=1}^J \cdot \phi_{1m} \Delta Rem_{t-n} + \sum_{m=0}^J \cdot \phi_{2m} \Delta Fdi_{t-n} \\ & + \sum_{m=0}^J \cdot \phi_{4m} \Delta Urp_{t-n} + \sum_{m=0}^J \cdot \phi_{5m} \Delta Excr_{t-n} + \partial_1 Gdp_{t-1} + \partial_2 Rem_{t-1} \\ & + \partial_3 Fdi_{t-1} + \partial_4 Urp_{t-1} + \partial_5 Excr_{t-1} + \epsilon_t \end{aligned} \quad 4$$

According to the ECM, the error correction term accurately captures the short-term dynamics of the adjustment process that leads to the long-term equilibrium. The rate at which the long-term equilibrium is being attained is indicated by the ECM coefficient, represented by ξ . It should be negative and smaller than one; a bigger magnitude indicates a faster corrective process. To track changes in causal linkages over time, we also employed the time-varying exogeneity causality test. This strategy works better than other approaches for two reasons. It does this by first removing the requirement to run a unit root test to verify the variable's stationarity. Second, there is no need for cointegration between the variables.

Findings and Discussion

ADF and DF Unit Root Testing

The first step in analyzing empirical results is to look at the order of each time series that is part of the model. Table 1 below displays the findings of the Philips-Perron (PP) and Augmented Dickey-Fuller (ADF) tests, which were predicated on the addition of an interception and a linear time trend.

Table 1. Unit Root Testing @ I(0) and I(1)

		ADF (H_0)				DF (H_0)			
Z_t		DF_α				ERS_α			
		τ_μ	1%	5%	Prob.	τ_τ	1%	5%	Prob.
Intercept without Time Trend	<i>GDP</i>	2.15	1.56	2.95	0.63	0.92	4.23	1.73	0.26
	<i>Rem</i>	0.83	4.25	3.17	0.49	0.69	3.39	2.57	0.48
	<i>FDI</i>	3.38	2.68	3.46	0.01	3.56	1.83	2.36	0.03
	<i>UrP</i>	2.48	1.61	3.48	0.51	0.35	3.38	2.59	0.54
	<i>Exr</i>	3.13	3.22	1.92	0.29	1.74	4.61	1.90	0.52
	ΔGDP	3.93	2.38	4.46	0.00	4.39	2.36	4.46	0.05
	ΔRem	3.29	2.58	3.87	0.00	4.56	4.85	4.87	0.02
	ΔFDI	2.35	1.86	1.90	0.00	4.29	4.54	2.59	0.00
	ΔUrP	2.56	3.72	4.27	0.00	2.39	2.58	1.75	0.00
	ΔExr	2.63	2.39	4.71	0.40	1.03	1.82	1.42	0.00
Intercept with Time Trend	<i>Gdp</i>	3.91	2.63	1.59	0.00	1.84	1.46	3.58	0.00
	<i>Rem</i>	3.59	2.48	2.82	0.58	3.72	3.49	3.29	0.00
	<i>FDI</i>	4.63	2.92	3.24	0.00	2.71	3.39	3.42	0.00
	<i>UrP</i>	3.28	4.53	4.68	0.00	2.22	4.43	3.83	0.00
	<i>Exr</i>	4.91	3.54	4.71	0.00	3.39	2.75	3.99	0.00
	ΔGdp	2.48	2.77	2.28	0.00	2.38	2.68	2.39	0.00
	ΔRem	3.28	5.44	2.29	0.00	3.03	1.92	5.23	0.00
	ΔFDI	2.74	3.72	1.61	0.00	2.58	4.94	2.82	0.00
	ΔUrP	3.73	5.82	2.74	0.00	5.92	3.89	2.39	0.00
	<i>Exr</i>	2.84	3.90	2.31	0.00	4.32	2.52	2.72	0.00

Source: Author's Compilation, 2024

Bound Testing

Since the majority of the variables are cointegrated, as shown in table 2, we normalize the GDP coefficient in the cointegrating relationship to one. This allows us to depict the long-run cointegrating equation connection as follows.

Table 2: ARDL Bound Testing

Test Statistic	Value	K
F-statistic	8.456686	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: *Author's Compilation, 2024*

4.2. ARDL Short-run Output

While the variable coefficients demonstrate the immediate effects of changes in the explanatory variables on the dependent variable, the ECM's negative and significant coefficient indicates which of the variables corrects the GDP imbalance. The findings verify that Nigeria's GDP has an automated system that quickly corrects out-of-equilibrium aberrations. With a speed of adjustment of roughly 0.72, GDP may adjust by 72% within the first year when it is above or below its equilibrium level, demonstrating how quickly it can return to equilibrium in the event of a GDP shock. To ascertain the nature of the short-term link between GDP and remittances as well as other external sources of capital variables, the coefficient of each individual variable is also analyzed. According to the model's individual variable coefficients (see table 3), the current gross domestic product was shown to be significantly impacted by the initial lagged value of the GDP. Rem(-1) was found to have a positive and significant coefficient, whereas Rem(-2) was found to have a negative one. The short-run equation revealed that the urban population's co-efficient was significant and positively correlated. However, the first lagged

value of FDI was observed to be negative and significant. While the urban population has a positive and short-term significant impact on GDP at a five percent significant level, the current value of FDI has a negligible impact on GDP. The results indicate that our variable of interest, remittances, has a distinct short-term impact on economic growth. The GDP rises in the near term as remittances rise, and there is evidence of a long-term positive correlation between remittances and economic growth. This suggests that remittances accumulate over time and support Nigeria's development. In contrast to its long-term effects, foreign direct investment has a major beneficial influence on output in the short term. In the short term, the effect on FDI is favorable and noteworthy. The study's short-term conclusions about how remittances affect economic growth are likewise consistent with the majority of Nigerian studies, including those by Akonji and Wakili (2013), Ukeje and Obiechina (2013), Akinpelu et al. (2013), and Iheke (2012).

Table 3: Short-run Estimation

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	0.337971	0.149170	2.265672	0.0497
D(REM)	0.213060	0.120052	1.774730	0.0406
D(REM(-1))	-0.174160	0.210056	-0.829109	0.0495
D(REM(-2))	-0.000000	0.000000	-0.853895	0.0153
D(REM(-3))	0.000000	0.000000	0.894837	0.3942
D(URP)	-15.06574	22.024652	-0.684040	0.5112
D(URP(-1))	-15.91381	70.527500	-0.225640	0.8265
D(URP(-2))	-43.07444	69.835641	-0.616797	0.5526
D(URP(-3))	58.733582	35.124896	1.672135	0.0128
D(FDI)	0.000000	0.000000	0.714789	0.4929
D(FDI(-1))	0.259201	0.317201	0.817151	0.0336
D(FDI(-2))	0.000000	0.000000	1.043154	0.3241
D(FDI(-3))	0.000000	0.000000	1.716979	0.1201
D(EXR)	0.030892	0.013895	2.223197	0.0533
D(EXR(-1))	-0.005131	0.012726	-0.403236	0.6962

D(EXR(-2))	0.018579	0.011812	1.572969	0.1502
D(EXR(-3))	-0.059624	0.009937	-6.000357	0.0002
CointEq(-1)	-0.715790	0.328432	-2.179416	0.0527

Source: *Author's Compilation, 2024*

ARDL Long run Estimation

A 1% increase in remittances would result in a 0.32% increase in GDP over the long term, according to our model's results, which provide support for the "view upheld by contemporary development financial analyst that international remittance inflows are one of the major macroeconomic factors that significantly promote long-run economic growth in globalized country" (Ahortor et al., 2009). Additionally, we discover that the GDP is positively and significantly impacted by the urban population (URP); that is, a 1% rise in URP will result in a roughly 0.15% increase in GDP. Our findings further show that FDI significantly boosts GDP, supporting the claim made by inflow proponents that FDI inflows are essential to developing nations' economic development (Fayissa et al., 1999). However, since foreign direct investment is generally seen as a transfer of (new) technology and (new) knowledge that allows the recipient country to benefit from the opportunity that was of others for its own development, the sign of this parameter is predicted to be positive (see Chami et al., 2005). We discovered a substantial and adverse correlation between economic growth and the exchange rate.

Table 3: Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP(-1)	-0.053761	0.245503	-0.218985	0.8315
GDP(-2)	0.337971	0.149170	2.265672	0.0497
REM	3.25E-09	3.23E-09	1.006151	0.0406
REM(-1)	-1.67E-09	3.59E-09	-0.465293	0.6528
REM(-2)	6.52E-09	2.87E-09	2.268738	0.0495
REM(-3)	2.64E-09	3.09E-09	0.853895	0.4153
REM(-4)	-3.27E-09	3.66E-09	-0.894837	0.3942
URP	-15.06574	22.02465	-0.684040	0.5112
URP(-1)	15.39178	62.83090	0.244971	0.0120

URP(-2)	15.91381	70.52750	0.225640	0.8265
URP(-3)	43.07445	69.83564	0.616797	0.5526
URP(-4)	-58.73358	35.12490	-1.672135	0.1288
FDI	3.07E-10	4.29E-10	0.714789	0.4929
FDI(-1)	4.77E-10	4.42E-10	1.077638	0.3092
FDI(-2)	7.04E-10	4.27E-10	1.648527	0.0336
FDI(-3)	-4.32E-10	4.14E-10	-1.043154	0.3241
FDI(-4)	-9.10E-10	5.30E-10	-1.716979	0.1201
EXR	0.030892	0.013895	2.223197	0.0533
EXR(-1)	-0.004434	0.016602	-0.267071	0.7954
EXR(-2)	0.005131	0.012726	0.403236	0.6962
EXR(-3)	-0.018579	0.011812	-1.572969	0.1502
EXR(-4)	-0.059624	0.009937	-6.000357	0.0002
C	-7.624001	53.62409	-0.142175	0.8901
R-squared	0.934717	Mean dependent var	4.320114	
Adjusted R-squared	0.775135	S.D. dependent var	4.017196	

Source: *Author's Compilation, 2024*

Stability Test for the Model

Because the series' P-value was negligible, our findings demonstrate that the residual from the error correction model is normally distributed. Since the test statistics are likewise not significant, the null hypothesis that there is no serial correlation, as supported by the Serial Correlation LM Test, cannot be disproved. Additionally, the Breusch-Pagan-Godfrey heteroskedasticity and ARCH tests verify the lack of heteroskedasticity, demonstrating the model's good behavior.

Heteroskedasticity Test: ARCH

F-statistic	2.738186	Prob. F(1,29)	0.1088
Obs*R-squared	2.674500	Prob. Chi-Square(1)	0.1020

Source: *Author's Compilation, 2024*

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.731367	Prob. F(2,7)	0.2450
Obs*R-squared	10.59068	Prob. Chi-Square(2)	0.0050

Source: Author's Compilation, 2024

Figure 1: Cusum

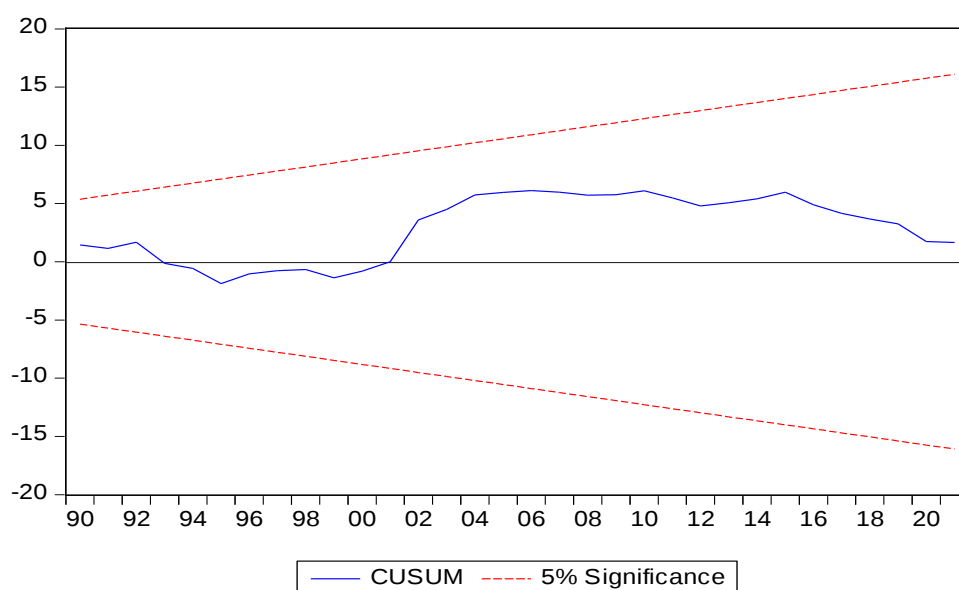
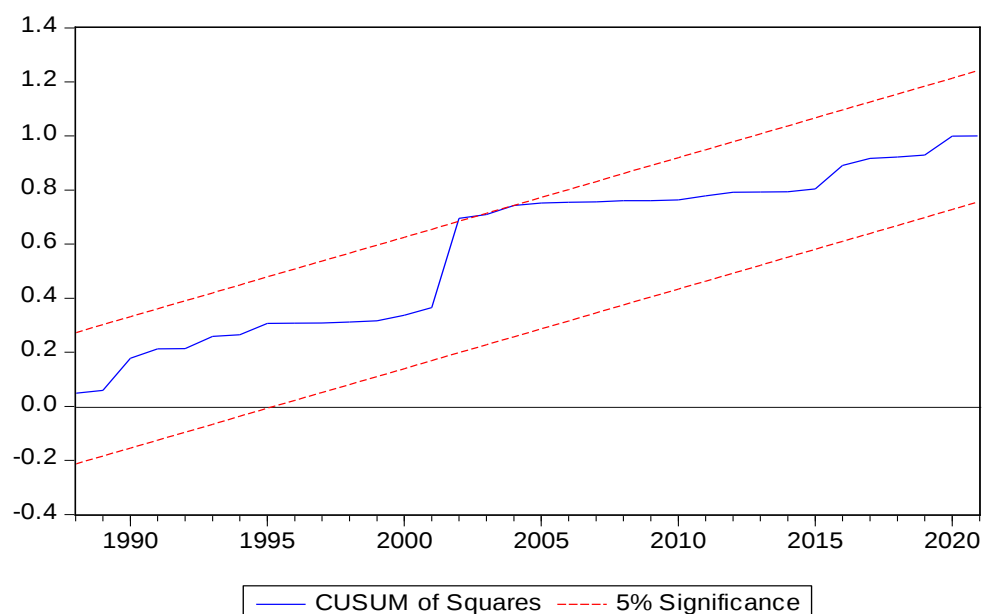


Fig. 2: Cusum of Squares



Conclusion

In this study, the ARDL approach was used to empirically analyze remittances and economic growth in Nigeria from 1986 to 2021. According to the long-term regression estimate, remittances have a beneficial effect on Nigeria's economic growth. According to our research, a one percent increase in remittances would eventually result in a 6.5% boost in GDP. Additionally, remittances and GDP have a strong short-term indirect link. This contrasts with the analysis of Adolfo et al. (2009), who found that remittances, when measured correctly and once the growth equations are well-specified and instrumented, usually result in a negative relationship between remittances and growth rather than a robust and significant positive impact on long-term growth. Furthermore, the findings demonstrated that traditional development drivers, such foreign direct investment, can boost economic growth and productivity over the long and short terms. Our findings also showed that URP can significantly impact Nigeria's economic growth in the short and long run. Our findings also confirmed the exchange rate's strong positive contribution to economic growth, indicating that the more open an economy is, the greater the short-term stimulation for economic growth. In our research, the influence of remittances on economic growth cannot be confirmed to be higher than that of other external funding sources, such as URP and foreign direct investment, as determined by the literature. These transfers may function more effectively as a growth strategy if policies were in place that provided better channels for remittances and foreign direct investment toward productive objectives. One possible policy conclusion from this study is that Nigeria can boost its economic growth performance by encouraging exchange rate stability as well as investing in more conventional growth sources like foreign direct investment (FDI), since the study found that FDI is one of the key factors that can spur growth. Additionally, by strategically utilizing remittances and making sure that their transfers are dependable and effective, economic growth can be maintained. However, as a precaution, remittances should not be viewed as a solution or a replacement for a long-term, domestically planned development project, such as building infrastructure investments and being open to international activities to address the nation's issues.

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