

Remittances and Nigeria's Economic Development

Malachy Ashywel Ugbaka

*Department of Economics,
University of Calabar, Nigeria*

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Abstract

The study examined the effects of foreign remittances on Nigeria's economic growth between 1990 and 2022 by analyzing the long-run and short-run effects of disaggregated remittances, namely workers' and migrants' remittances, using the Vector Error Correction Modeling (VECM) technique to determine whether they would perform differently in relation to Nigeria's economic growth. The performance of the two remittance components differed. The workers' remittance component has a negative statistically significant impact over the long run, but the ECM term was negative and statistically significant, establishing a short-run relationship between the variables. In contrast, the migrants' remittance component shows a long-run positive, statistically significant relationship with economic growth. While there was no correlation between worker remittances and GDP per capita, the results indicated a unidirectional causal relationship between GDP per capita and migrant remittances. In order to ensure a favorable association with Nigeria's economic growth, the study submits that workers' remittances be strategically harnessed by making sure that the money is spent on locally made items rather than imported ones. The study concludes that remittances are a key factor in Nigeria's economic growth.

Keywords: *Remittances, Economic Development, VECM, ECM*

Corresponding Author: Malachy Ashywel Ugbaka

Background to the Study

Economic growth and its drivers have been hotly contested topics. According to certain theories, remittances are one of the many elements that influence growth. A component of capital flow to a nation, remittances are thought to influence economic growth either directly or indirectly. One of the main factors contributing to the growth of enormous remittance flows is increased globalization (Maimbo & Ratha, 2005). The custom of migration is mostly caused by labor surpluses in the majority of developing nations, where many competent and trained individuals are unable to find fulfilling jobs and attempt to seek better opportunities elsewhere (Fagerheim, 2015). Since many migrants feel obligated to support their families financially back home, it is anticipated that increased remittance inflows will be correlated with increased outflows of migrants (Fagerheim, 2015; Ugbaka et al. 2019).

According to Carling (2008), remittances and household sizes in the country of origin actually have a positive link, while households in the country of destination have a negative correlation. Whether or whether the recipient country's economic growth is significantly impacted by the way the remittance is used has not been decided by studies. There is a chance that the recipient country's economic growth will be minimally impacted if the remittances are used for consumption rather than capital expenditures. Lucas and Stark (1985) assert that only when remittance payments are used to purchase fixed capital or livestock will economic growth be significantly accelerated. The philosophy of migration and the duration of migration, whether internal or external, temporary or permanent, are closely related to remittance inflow. Remittances increase growth in nations with less established financial systems, according to studies in the literature, particularly Bichaka et al. (2008). Remittances will offer a different means of funding investments and assist the nations in overcoming liquidity difficulties, according to multiple arguments. In the literature, there has been a lot of discussion on remittances as a source of growth, particularly for poor nations. According to Giuliano and Ruiz-Arranz (2006), remittances constitute a significant portion of foreign capital flows for poor nations. Additionally, they thought that remittances had a greater influence than export earnings, foreign aid, and foreign direct investment (FDI).

Many people also see remittances as a form of compensation for family members who lost skilled workers as a result of migration. Remittances' effects on family members and economic growth, both directly and indirectly, must be thoroughly examined. According to the literature, the Indian economy receives the most remittances worldwide, with Nigeria coming in second. Remittances vary from one country to another and make up a larger portion of the GDP of the receiving country. By enhancing capital accumulation, the remittances may have a favorable impact on a country's economic growth. Through its influence on the growth of the financial sector, it can also enhance a country's economic growth. It is crucial to note that remittances may affect economic growth in either a positive or negative way. Remittances could be broken down into:

- i. Remittances from workers
- ii. The money sent home by migrants

Workers' remittances, or the money sent home to families by employees residing overseas
Remittances from those who wish to relocate from overseas to make investments domestically

are known as migrant/transfers. One way to break down the macroeconomic effects of remittances would be to look at how they affect imports and exports, the exchange rate, and the stock of migrants. Meanwhile, the microeconomic impact would look at two household perspectives, including how the remittances are used and how they are sent, which depends on the migrant's ability to send, his income level, education, gender, and other factors (Lucas & Stark, 1985; Carling, 2008; Fagerheim, 2015; Ugbaka and Ojikpong, 2024).

Compared to other African nations, Nigeria receives the most remittances, which suggests that a greater proportion of Nigerians live abroad. According to Adeagbo and Ayansola (2014), this is a sign of the economy's underdeveloped status, widespread lack of opportunity, and underemployment. The flight of professional, skilled, and trained laborers in pursuit of better opportunities is referred to as "brain drain." Is there anything significant to gain from this so-called brain drain? Examining how remittance inflows affect the Nigerian economy allows one to make this claim. It is necessary to investigate the effects of remittance inflows on Nigeria's economic growth because, despite the country's massive remittances, poverty, unemployment, and inequality still exist. This suggests that Nigeria may not have effectively used the benefits of brain drain in terms of remittances (Adeagbo & Ayansola, 2014). Additionally, it's likely that the gains in remittances are a mirage brought on by adjustments to measurements and do not accurately represent the actual inflow of funds. A country-specific analysis is necessary since cross-country regression would not be able to identify the genuine effects of remittances on economic growth, even if the increases were precisely recorded (Clemens & McKenzie, 2014).

The impact differs from nation to nation and may be either favorable or harmful. Remittances' direct and indirect effects on economic growth must be thoroughly examined. However, a fair amount of research has been done on both the direct and indirect effects. However, since remittances also have component parts, it is necessary to break them down into their constituent elements in order to identify the one that most efficiently supports economic growth. This vacuum in the literature has not yet been adequately highlighted, particularly in light of how it impacts developing nations and Nigeria specifically. Investigating this gap for the Nigerian economy is the goal of the current study. This is the structure of the paper is as follows: The review of the literature is covered in Section 2, which comes after the introduction. In Section 3, a growth model that takes remittances into account as a source of economic growth is specified. Following the empirical findings in Section 4, the summary, conclusion, and recommendations are presented in Section 5.

Literature Review

The impacts of migrant remittances have been the subject of numerous researches. Some of these demonstrate how remittances help to improve total factor productivity (Abdih et al., 2012), reduce poverty (Akobeng, 2016; Majeed, 2015; Meka'a et al., 2022; Saidane, 2021), facilitate the accumulation of human capital (Calero et al., 2009; Combes & Ebeke, 2011; Rapoport & Docquier, 2005), or lessen state fragility (Avom et al., 2021). On the other hand, other research indicates that remittances have a negative impact on the economy. In fact, remittances are the cause of moral hazards (Gubert, 2002), a decrease in the work efforts of the households that receive them (El Hamma, 2017), and an acceleration of inflation (Khan &

Islam, 2013). Furthermore, by including an interaction term with additional variables that can enhance the direct effect that promotes growth, some research has examined the conditional effect of migrant remittances in addition to their direct effects. Therefore, phrases like institutional quality, financial development (Catrinescu et al., 2009; El Hamma, 2018), and financial development (Giuliano & RuizArranz, 2009) are included.

Similarly, research on the impact of migrant remittances on economic growth has yielded no conclusive conclusions, either conceptually or empirically. Remittances, for instance, have a favorable impact on economic growth, according to Faini (2002). However, remittances lead receivers to stop working hard or even cut back on their working hours, which is why Chami et al. (2005) discover a negative association. According to Lucas (2005), this kind of outcome is only possible if the endogenous nature of migrant remittances is ignored. Tsaurai (2018) uses panel data analysis to examine how remittances affect poverty in a few emerging nations. Theoretically, proponents of the gloomy perspective claim that the remittance dependency syndrome slows economic progress. Burgess and Haksar (2005) contend that there is uncertainty over the long-term economic impacts of remittances in the Philippines between 1985 and 2002, using vector autoregression and basic correlation techniques. Ang (2009), however, discovers that remittances have a generally favorable effect on growth for the same nation.

Ziesemer (2012) found that the presence of remittances can raise the growth rate by two percentage points, highlighting a higher benefit of migrant remittances in the particular instance of low-income nations. Similarly, Mundaca (2009) shows that migrant remittances have a favorable impact on Latin American nations' economic development. The author claims that this outcome is only achievable in the event that domestic bank credit functions as a regressor. Eggoh et al. (2019), using a sample of 49 developing nations examined between 2001 and 2013, also discover that remittances significantly boost economic growth in these nations. Furthermore, they demonstrate that the degree of financial growth and investment has a greater influence on this impact than does the level of consumption and remittances.

According to Singh et al. (2011), remittances have a negative impact on economic growth in sub-Saharan African countries. However, for those countries where good governance practices are observed, this impact can be positive. Fayissa and Nsiah (2012) have analysed annual panel data for 64 countries in Africa, Asia and Latin America and the Caribbean over the period 1987–2007 and found that, for countries with weak financial systems, remittances stimulate growth to the extent that they provide an alternative means of financing investment, while helping to overcome liquidity constraints. On the other hand, because remittances have no effect on investment in tangible capital, Ahamada and Coulibaly (2013) demonstrate that they do not promote growth in 20 sub-Saharan African nations. S. Adams and Klobodu (2016) do not prove that remittances support economic growth in sub-Saharan Africa using the generalized system moment estimate technique. But by applying the same methodology and examining how remittances affected economic growth in African nations between 1980 and 2006, Oumansour et al. (2019) are able to demonstrate that remittances significantly and favorably impacted growth in a sample of 34 African nations.

According to Aisen and Veiga (2013), in particular, the results of the interaction between remittances and political stability indicate a positive effect: if a nation's political stability is adequate, remittances have a more favorable impact on growth. According to Deisting et al. (2015), political stability generally has a major and favorable impact on the impact of remittances in a nation. Furthermore, remittances have been demonstrated by Leon-ledesma and Piracha (2004) to have favorable direct and indirect effects on employment and productivity, two key factors that influence growth. Furthermore, trade openness may be a useful means of remittance transfer that influences economic growth, according to Oumansour et al. (2019). Given the foregoing, it would seem reasonable to speculate that remittances influence economic growth through trade openness, investment, and political stability.

Theoretical Framework

Economic literature places a lot of emphasis on economic growth, and there are many debates on its causes. Solow (1956), Lewis (1954), Myrdal (1968), Harris and Todaro (1970), Romer (1986), and others have all put out the widely accepted growth theory and model. According to this group of economists, technical advancement, change, foreign aid, foreign direct investment, human capital investment, and research and development all contribute to economic growth, which starts with surplus labor and physical capital investment. Remittances are seen as a significant contributor to global money flows and a key driver of economic expansion. A traditional neoclassical growth model has included the significance of remittances as a source of growth. The following categories could be used to group the hypotheses on the remittances of economic migrants:

The traditional approach held that industrialization and capital transfers to developing countries were necessary to advance their economies. The neoclassical paradigm supported wage level increases and marginal labor productivity in the societies that sent migrants. According to the Neo-Marxist view, migration and remittances will result in and strengthen the capitalist approach to inequality. The reasons behind remittances are intimately tied to the cyclical remittance theory. Additionally, whether a country is the donor or the recipient, intentions directly affect the timing, amount, and distribution of these transactions across nations and economic conditions.

Model Specification

Time series data covering the years 1990–2022 were used in this investigation. The study estimated the impact of remittances in a disaggregated manner on economic growth in the Nigerian economy using the linear Cobb-Douglas production function. The paper's main focus is on how remittances and economic growth are related. We define the production function in the following way in order to accomplish this:

$$GDPK_{it} = \alpha_0 + \alpha_1 BREM_{it} + \alpha_2 REMW_{it} + \alpha_3 KAP_{it} + \alpha_4 FA_{it} + \alpha_5 TRADE_{it} + \varepsilon_{it} \quad 1$$

Where natural log real GDP per capita is equal to GDPK. LMREM is the natural log of migrant remittances (as measured by individual remittances). Natural log LREMW Remittances from employees' Natural log (LKAP) The term "gross fixed capital formation"

refers to domestic physical capital investment. LFA = natural log foreign aid as an external source of funding (measured by total bilateral aid) LTRADE is the natural log of trade openness as determined by the ratio of imports to GDP plus exports. ε_{it} = incorrect term.

A bivariate Kth order vector error correction model (VECM) states the following expanded form of the causality test, which incorporates the error correction term, in the presence of co-integration among the variables of interest (Ferda, 2007; Nwosa & Akinbobola, 2012):

$$\begin{pmatrix} \Delta Y_t \\ \Delta X_t \end{pmatrix} = \begin{pmatrix} \phi_{10} \\ \phi_{20} \end{pmatrix} + \sum \begin{bmatrix} \alpha_{11} & \alpha_{12} \\ \alpha_{21} & \alpha_{22} \end{bmatrix} \begin{pmatrix} \Delta Y_{t-1} \\ \Delta X_{t-1} \end{pmatrix} + \begin{bmatrix} \lambda_1 \\ \lambda_2 \end{bmatrix} [ECT_{h,t-1}] + \begin{bmatrix} \mu_{1t} \\ \mu_{2t} \end{bmatrix} \quad 2$$

Where X_t stands for (LMREM, LREMW, LKAP, LFA, and LTRADE) and Y_t for LGDPK. The word for error correction is ECT.

The stationarity of the variables will be examined.

The following sources provided the data used:

- (i) The Central Bank of Nigeria's Statistical Bulletin.
- (ii) The indicator of global development.

Empirical Results and Interpretation

Table 1: The Unit root Test

Variables	ADF LEVEL	Critical value 5%	ADF FIRST DIFFERENCE	Critical value 5%	Order of iteration
GDPK	-0.165992 (0.9340)	-2.945842	-4.850555 (0.0004)	-2.948404	I(1)
KAP	-0.812314 (0.8024)	-2.954021	-3.311084 (0.0224)	-2.954021	I(1)
MREM	-1.161178 (0.6795)	-2.951125	-4.559004 (0.0009)	-2.948404	I(1)
FA	-1.376926 (0.5826)	-2.945842	-4.780982 (0.0005)	-2.948404	I(1)
TRADE	-1.810198 (0.3698)	-2.945842	-7.446549 (0.0000)	-2.948404	I(1)
REMW	-0.648600 (0.8469)	-2.945842	-6.370770 (0.0000)	-2.948404	I(1)

Source: Authors' Computation, 2025

According to table 1's unit root test, every one of the chosen variables became stationary at first difference. They are therefore of order one integration. The co-integration test requires this as a prerequisite. Thus, the Johansen-Joselius co-integration test will be used in this study to assess the relationship between the chosen explanatory factors and gross domestic product per capita as well as to ascertain whether or not there is a long-term link among the variables. Tables 2 and 3 below, which provide the trace test and maximum eigenvalue results, reveal the results of the Johansen co-integration test:

Table 2: Trace Test Co-integration Result

Unrestricted Co-integration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.837859	204.2769	125.6154	0.0000
At most 1 *	0.801523	140.6017	95.75366	0.0000
At most 2 *	0.635598	84.00390	69.81889	0.0024
At most 3 *	0.422571	48.67147	47.85613	0.0418
At most 4	0.375374	29.45050	29.79707	0.0548
At most 5	0.275114	12.97944	15.49471	0.1156
At most 6	0.047915	1.718519	3.841466	0.1899

*Trace test indicates 4 co-integrating eqn. (s) at the 0.05 level, * denotes rejection of the hypothesis at the 0.05 level. **MacKinnon-Haug-Michelis (1999) p-values*

Source: Authors' Computation, 2025

The results of the unconstrained co-integration rank trace test for the variables used in this investigation are shown in Table 2 above. Four cointegrating equations were found using the trace test, suggesting that the variables used in the study may have a long-term relationship. The unrestricted co-integration rank test for the largest eigenvalue is shown in table 4 below. The null hypothesis, which states that there is no co-integration among the variables used in the study, is likewise rejected as a result of the greatest eigenvalue. Three co-integrating equations were found using eigenvalue statistics, suggesting that the variables of interest may have a long-term relationship.

Table 3: Maximum Eigenvalue co-integration result

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.837859	63.67514	46.23142	0.0003
At most 1 *	0.801523	56.59784	40.07757	0.0003
At most 2 *	0.635598	35.33244	33.87687	0.0333
At most 3	0.422571	19.22097	27.58434	0.3976
At most 4	0.375374	16.47106	21.13162	0.1985
At most 5	0.275114	11.26092	14.26460	0.1416
At most 6	0.047915	1.718519	3.841466	0.1899

Max-eigenvalue test indicates 3 co-integrating eqn.(s) at the 0.05 level

** denotes rejection of the hypothesis at the 0.05 level. **MacKinnon-Haug-Michelis (1999) p-values*

Source: Authors' Computation, 2025

Examining the influence and causality between the dependent and independent variables in the model is crucial given the evidence of a long-term relationship between the variables used in it. To do this, the vector error correction mechanism (VECM) will be used. The long- and short-term analyses of the model are shown in tables 5m and 6 below, which offer the VECM analysis.

Table 4: VECM Long run Estimate

	LOG(REMW(-1))	LOG(FA(-1))	LOG(TRADE(-1))	LOG(KAP(-1))	C
LOG(GDPK(-1))	0.027884	-0.055466	-0.008204	-0.102249	0.0438
	(0.05465)	(0.04007)	(0.16467)	(0.12018)	(0.01647)

Source: Authors' Computation, 2025

According to the VECM estimate, there is a statistically significant, long-term positive correlation between the first-lag value of per capita GDP and The first lagged value of workers' remittances (LOG(REMW (-1))), the first lagged value of gross fixed capital formation as a measure of domestic investment (KAP (-1)), the first lagged value of foreign aids (LOG(FA(-1))), and the first lagged value of trade openness (LOG(Trade (-1))) were found to be negatively and statistically significantly correlated with LOG(GDPK (-1)).

Increases in migrant remittances may accelerate Nigeria's economic growth, as indicated by the positive correlation between migrant remittances and gross domestic product per capita. In contrast to the findings of Adeyi (2015) and Adarkwa (2015), but consistent with Ahmad (2015), worker remittances showed a negative relationship with the gross domestic product per capita, suggesting that any increases in worker remittances could be detrimental to the expansion of the Nigerian economy. This is in line with theoretical claims that worker remittances might not be able to support economic growth in the home economy since they are mostly used to purchase imported goods.

Table 5: VECM Short run Estimates

Variables	Coefficient	Std. Error	T-Statistics	Probability
LOG(GDPK(-1))	0.6419	0.2148	2.9891*	0.0073
LOG(LMREM(-1))	-0.0263	0.0119	-2.2051*	0.0393
LOG(KAP(-1))	0.0733	0.0426	1.7224**	0.1004
LOG(KAP(-1))	-0.0541	0.0518	-1.0445	0.3087
LOG(FA(-1))	0.0142	0.0172	0.8271	0.4179
D(LFDI)	0.0170	0.0101	1.6751**	0.1095
LOG(TRADE(-1))	0.0654	0.0353	1.8508**	0.0790
C	0.0189	0.0124	1.5353***	0.1404
ECM(-1)	-0.594382	0.2068	-2.0836	0.0502

Source: Authors Computation, 2025

Since the ECM term (ECM (-1)) is statistically significant and negative, a short-term causal relationship between the variables used in this investigation may be inferred. Trade openness and gross domestic output per capita were found to be causally related in both directions. There was no causal relationship between workers' remittances and gross domestic product per capita, but there was a unidirectional relationship between GDP per capita and foreign aid, GDP per capita and domestic investment (as measured by KAP), and GDP per capita and migrant remittances.

Additionally, a statistically insignificant negative correlation between GDP per capita and workers' remittances, domestic investments (KAP), and foreign aid (FA) was seen in the short-run estimations. In the short term, there is a positive but statistically negligible correlation between GDP per capita and migrant remittances, however there is a statistically significant negative correlation between GDP per capita and trade openness (Trade). The findings demonstrated that while traditional and conventional factors of economic growth are significant, remittances—particularly those sent by migrants—play an equally significant role in fostering economic growth. To determine whether the residuals are serially associated, the residual serial correlation test was also performed. There is no serial correlation between the residuals for the lags listed in the study, according to the test, which is displayed in table 6.

Table 6: Residual Serial Correlation LM Test

Lags	LM-Stats	Prob.
1	51.09998	0.0490
2	34.48083	0.5409
3	41.35379	0.2483

Source: Authors Computation, 2025

Summary

The study examined the connection between remittances and Nigeria's economic expansion. It acknowledges that remittances are a part of the influx of foreign capital into a nation. This component's contribution to economic growth requires careful examination. The study used secondary data from the World Bank's World Development Indicator (WDI, 2017) and the Central Bank of Nigeria's statistical bulletin (2017) to conduct the analysis. The vector error correction mechanism (VECM), Johansen co-integration techniques, and the Augmented Dickey-Fuller (ADF) test for unit roots were used to estimate the variables of interest. The Johansen co-integration test was necessary because the ADF unit-root test showed that all of the variables were stationary at first difference. The trace statistics and the maximum Eigenvalue statistics, respectively, showed evidence of long-term relationships between the variables in the model with 4 and 3 co-integrating equations. The error correction term is statistically significant and displays the proper sign, which is negative. With an R2 of 0.65, the explanatory factors were responsible for 65% of the results. Overall, remittances from migrants have a statistically significant positive long-term impact on GDP per capita, however there is a statistically significant negative long-term association between worker remittances and GDP per capita. Short-term study, however, showed a unidirectional causal relationship between

GDP per capita and migrant remittances, but no causal relationship between workers' remittances and GDP per capita.

Conclusion

This analysis finds that whereas worker remittances have a statistically significant negative impact on the long-term growth of the Nigerian economy, migrant remittances have a positive and significant impact on economic growth. There was no evidence of a causative relationship between GDP per capita and worker remittances in Nigeria during the study period, however it was found that there is a short-term, unidirectional causal relationship between GDP per capita and migrant remittances. Nigeria's economy may grow as a result of remittances.

Recommendation

Remittances have been shown to accelerate economic growth in countries with less developed banking systems. Remittances should be promoted in order to solve liquidity issues and provide an alternate source of funding for investments. To ensure a positive link with Nigeria's economic progress, it is necessary to strategically harness the contribution of workers' remittances by making sure that the money is spent on locally made items rather than imported ones. To encourage more remittances to enter the Nigerian economy, policies that would increase the effectiveness and dependability of transfers as well as lower their cost should be put into place.

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