Journal of Finance and Accounting Research (JFAR)
Volume 5 Issue 2, Fall 2023
ISSN$_{(P)}$: 2617-2232 ISSN$_{(E)}$: 2663-838X
Homepage: https://ojs.umt.edu.pk/index.php/jfar

Article QR

Title:	**Role of Financial Remittances in Promoting Financial Development: Evidence from Nigeria**
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DOI:	https://doi.org/10.32350/jfar.52.01
History:	Received: August 19, 2023, Revised: October 2, 2023, Accepted: October 13, 2023, Published: December 14, 2023
Citation:	Elumah, L. O., & Muritala, T. A. (2023). Role of financial remittances in promoting financial development: Evidence from Nigeria. *Journal of Finance and Accounting Research*, *5*(2), 01–19. https://doi.org/10.32350/jfar.52.01
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Conflict of Interest:	Author(s) declared no conflict of interest

A publication of
Department of Banking and Finance, Dr. Hasan Murad School of Management (HSM)
University of Management and Technology, Lahore, Pakistan

Role of Financial Remittances in Promoting Financial Development: Evidence from Nigeria

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Abstract

This research aims to investigate whether financial remittances contributed to financial development in Nigeria during the years 1981-2021. The study utilized a combination of descriptive and inferential statistical techniques to analyze the data. It employed Augmented-Dickey–Fuller unit root test, the ARDL bounds test, and subsequent post-estimation examinations. To evaluate the effect of financial remittances on financial development, the current research embraced both bank-related and capital market-oriented indices as indicators of financial development. Descriptive statistics revealed that Nigeria's economic structure leans towards a bank-centred model. Further, in comparison to Foreign Direct Investment (FDI), financial remittances take precedence. The empirical findings confirmed that financial remittances exert a significant influence on financial development over both short- and long-term.

***Keywords*:** ARDL, financial development, financial sector, remittances

Introduction

The intertwined relationship between financial remittances and financial sector development remains a contested matter within the academic sphere, particularly in the context of developing countries, such as Nigeria. The country stands as a significant recipient of remittances from migrant populations. The global economy transitioned to the third stage of financial globalization during 2000s, leading to greater interconnectivity between emerging economies and the global financial system. This surge in interconnectedness resulted in a heightened influx of capital into these economies. This phase of financial globalization has not only facilitated an increased access to capital but has also bolstered the efficiency of financial systems through the enhancement of financial infrastructure, as posited by Bhattacharya (2018). This advancement has the potential to ameliorate credit availability, while mitigating the challenges posed by information

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asymmetry. Individuals migrating from developing nations capitalize on the opportunities presented by globalization to transfer funds across borders, which serves both as an act of generosity and a form of aid. In long-term, the volume of remittance flows has surged in tandem with the escalating scale of international migration.

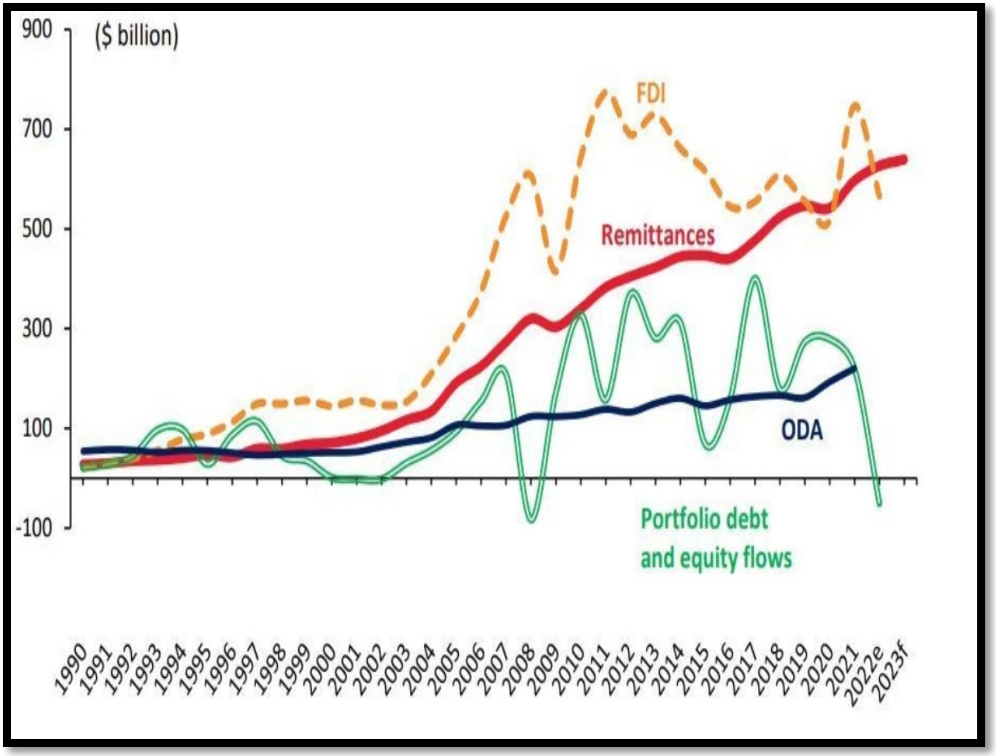
In the past, economists generally held the view that remittances in developing economies played a secondary role as compared to Foreign Direct Investment (FDI) and equity investments in terms of financial impact. However, this perception has evolved, with remittances emerging as the foremost contributor to development financing due to their substantial magnitude, consistent nature, and remarkable resilience. Mehta et al. (2020) contend that financial remittances have ascended to become the second largest inflow of foreign funds. Furthermore, their positive influence on the financial advancement of developing nations is credited with reducing poverty and fostering sustainable and long-term economic growth.

The global flow of remittances is on the rise, buoyed by the expansion of the financial sector, and has the potential to contribute significantly to economic growth. The value of remittances directed towards developing nations was estimated to be US$145 billion in 2006. This figure increased threefold to US$441 billion by 2016. By 2021, it further escalated to US$589 billion (World Bank, 2021). In the context of Sub-Saharan Africa, remittance inflows experienced a 6.2% growth, amounting to US$45 billion in 2021. Notably, financial remittances are an increasingly influential source of foreign exchange in several emerging countries. In certain instances, remittances have begun to surpass the inflow from FDI and even compete with export revenues.

As emphasized by Acosta et al. (2009), financial remittances constitute a substantial and expanding source of capital for developing nations. These remittances account for almost 2% of the Gross Domestic Product (GDP) and constitute two-thirds of all FDI. Furthermore, they play a pivotal role in facilitating the development of rural infrastructure. Al Mamun et al. (2016) emphasized that the act of sending money back to their home countries by migrants workers contributes to the acceleration of economic growth and overall development.

Figure 1

Remittances, FDI, Portfolio Flows, and Official Development Assistance of Low and Middle-Income Countries

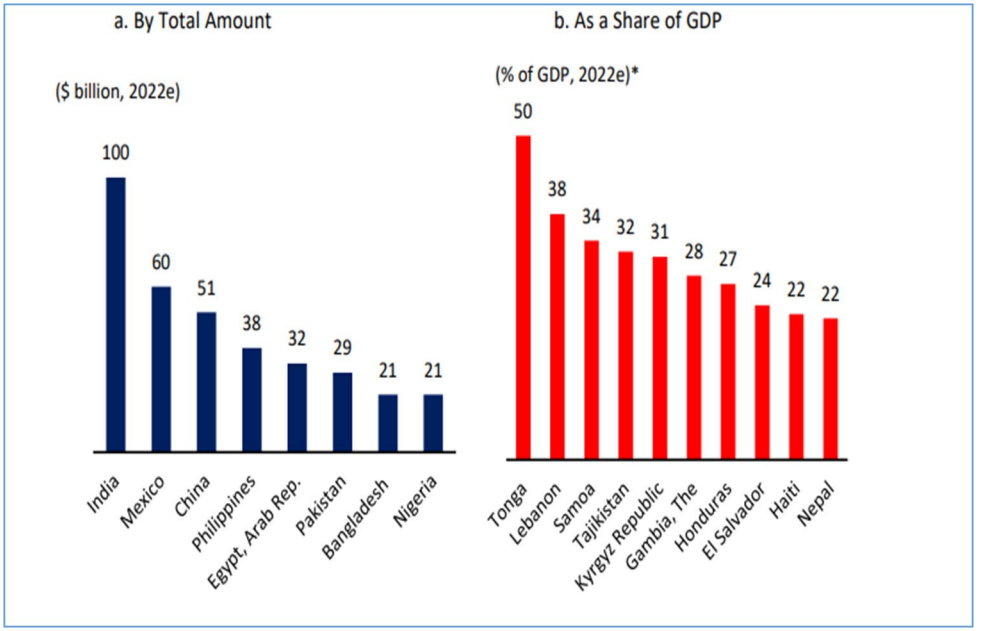


Note. Source: World Bank (2023)

Nigeria is among the countries that receive the most remittances, making her a remittance-dependent nation. Nigeria, the largest remittance receiving nation in the Sub-Saharan region, saw an increase of 11.2% in the recorded inflows, which can be attributed in part to regulations designed to direct inflows through the banking system (International Monetary Fund [IMF], 2021). Remittance inflows are expected to increase to about $26 billion by 2025, driven by the sustained use of official channels in Nigeria and increasing food costs and general inflation. Migrants are likely to send more money back to their home countries, where the cost of basic goods has increased dramatically in recent years. Similarly, according to World Remit (2022), Nigeria secured a spot in their top ten (10) list with a remittance inflow of roughly $14.2 billion in 2021.

Figure 2

Top Recipients of Financial Remittances among Low-and Middle-Income Countries



Note. Source: World Bank (2023)

The total sum of personal remittances received globally underwent a substantial increase, surging from US$67.9 billion in 1990 to US$418 billion in 2010, and further reaching US$553 billion by 2015, as documented by the World Bank in 2016. Notably, personal remittances have evolved into a significant wellspring of investment capital in developing countries. This shift is evident in the escalation of the remittances-to-GDP ratio, which climbed from 0.4% in 1990 to 0.8% in 2015 (World Bank, 2016). Remarkably, the majority of these remittance transactions were directed towards developing nations, underscoring their role as a pivotal financial inflow for these economies. The increase in remittances, which was encouraged by the reopening of enterprises in host countries that had been forced to close due to the COVID-19 outbreak, shows that migrants are able to support their family back home during difficult economic circumstances. While, inflation in some countries has reduced the value of migrants' earnings, the strength of host countries' currencies has raised the value of money they are able to send home.

Sobiech (2019) argued that remittances originating from developed nations and directed towards developing countries play a pivotal role in providing domestic financial institutions with the necessary funds to facilitate financial development. It has been asserted further that financial remittances serve as an alternative avenue for investment funding, sometimes surpassing the traditional banking system, moreover, in developing countries with less developed financial systems, financial remittances wield significant influence on economic growth (Das & McFarlane, 2021).

Orozco (2009) underscored remittances as a strategic approach towards fostering domestic capital accumulation, since they incentivize saving behavior through innovative investment prospects. Despite ranking 9th globally in terms of the volume of migrants' remittances and receiving a substantial amount of $20.94 billion in 2022, Nigeria persists as a financially underdeveloped nation. This characterization is attributed to its predominantly bank-oriented financial system, a feature borne out of the significant level of economic monetization and financial depth (Ilo et al., 2018). Hence, this study seeks to examine the impact of financial remittances on financial development in Nigeria.

Literature Review

Empirical investigations regarding the impact of financial remittances have yielded diverse outcomes. For instance, Hamma (2017) explored the influence of financial remittances on economic growth within the Middle East and North Africa (MENA) region spanning the years 1984-2012. Through a Generalized Method of Moments (GMM) analysis, it was found that financial remittances, when supported with financial development, bolster growth. Notably, the positive effect of remittances on economic growth is more pronounced in economies characterized by a well-developed financial system and a stable institutional framework. In a different vein, a panel study of 57 economies also employed GMM and causality test to delve into the association between financial remittances and FDI (Bhattacharya et al., 2018). The results revealed a sustained and mutual association between financial remittances and FDI in the long-term. Additionally, the research uncovered a causal link between worker remittances and FDI that operated in both directions in the sample countries.

Fromentin (2018) explored the association between financial remittances and economic growth in 32 Latin American and Caribbean nations. Employing a range of dynamic panel data approaches, the study unveiled a robust and reciprocal correlation between financial remittances and financial development. Issahaku (2019) employed the GMM technique to assess the influence of worker remittances on FDI across selected developing nations for the period 2008-2012. The study indicated that financial remittances from foreign workers in these countries serve as an encouraging factor for FDI. In a related investigation, Kakhkharov and Rohde (2019) also explored the relationship between remittances and diverse credit and deposit types by employing dynamic system GMM estimators in the former Soviet Union and Central and Eastern Europe for the period 1996-2013. The outcomes highlighted a strong, significant, and advantageous association between financial remittances and economic growth.

Akçay (2019) adopted a distinct approach by employing the ARDL model to scrutinize the potential non-linear relationship between financial development and financial remittances in Bangladesh spanning the years 1980-2015. The results pointed to a non-linear U-shaped association among both variables, substantiating the complementarity hypothesis across the short- and long-term. Misati et al. (2019) conducted a study using quarterly data from Kenya spanning the years 2006-2016 by employing ARDL approach. Their investigation centred on examining the correlation between financial development and remittances. Their findings revealed a substantial and positive association between them.

Shifting the focus to Sub-Saharan African (SSA), Olayungbo et al. (2019) investigated the association between remittances, financial development, and economic growth across 20 nations for the period 2000-2015. They used multiple methods including panel unit root, pooled mean group, ARDL, and cointegration test. The study found remittances advantageous for both short- and long-term economic growth. The interactive period also indicated a change in the relationship between remittances and economic growth from one of economic growth to one of financial development. The results showed that GDP and financial development, as well as remittances and GDP, have a unidirectional causal relationship. However, it was noticed that in SSA nations, there is no appreciable link between remittances and financial development.

Deonanan et al. (2019) reviewed the relationship between remittances and financial development in Jamaica for the period 1976-2016. According to their research, remittances support long-term financial development, while in the short-term it depletes financial development. The study built an index including numerous financial development variables using Principal Component Analysis (PCA). Toda-Yamamoto test and Error Correction Model (ECM) based on ARDL were used to examine causality. It was determined that remittances have an influence, although it takes longer for it to become apparent in the near-term than in the long-term. These findings imply that financial remittances play a variety of roles in the course of economic development.

Mehta et al. (2020) investigated how remittances affected Bangladesh's financial development between the years 1975 and 2019. The study included a variety of methods, including asymmetric causality tests, nonlinear unit root tests, ARDL models, and non-linear ARDL (NARDL) models. The findings showed that remittances and financial development are positively correlated across both short- and long-terms, as well as empirical long-run cointegration.

Ahmad et al. (2019) explored the relationship between remittances and financial development in Sri Lanka for the period 1975-2017. The empirical results confirmed that there is a long-term beneficial association between financial development and remittances. The Granger causality test showed an inverse association between worker remittances and economic growth. Additionally, the impulse response study showed that higher remittances would have a positive, immediate, and lasting effect on financial development for up to ten years.

Utilizing the data spanning the years 1980-2016, Donou-Adonsou et al. (2020) examined the relationship between financial remittances and FDI in SSA. Employing the panel cointegration method, the study revealed that a mutual association exists between FDI and worker remittances in sample countries. In a separate study, Naceur et al. (2020) employed dynamic panel GMM regression to explore the relationship between remittances and financial inclusion across 187 countries during the period 2004-2015. Their analysis revealed that in the selected countries, there existed a U-shaped correlation between FDI and worker remittances.

Azizi (2020) focused on the effects of global remittances on FDI. The study applied the instrumental variable-fixed effect model on panel data collected from 124 developing countries between 1990 and 2015.According to the findings, remittances from workers stimulated FDI in the sample countries. Basnet et al. (2020) used the panel cointegration methodology to examine how worker remittances affect the expansion of the banking industry in South Asia's main recipient countries. Their investigation found proof of a persistent association between remittances and financial development. The results support the notion that remittances have a positive and significant impact on financial development. The findings further verify that there is a long-term, bidirectional, causal relationship between remittances and financial development.

Kwadwo et al. (2023) explored the link between remittance inflows and financial development in Ghana for the years 1980–2019. The study employed the ARDL, VECM, DOLS, CCR, and FMOLS techniques. Furthermore, IRF and forecast FEVD analyses were employed to comprehend better the response of financial development to the fluctuations in remittance inflows and other macroeconomic factors. The results demonstrated that the variables were cointegrated and remittances were found to be beneficial for financial development in both the short- and long-run. Similarly, Golde et al. (2023) examined the effects of financial progress and inward remittances on economic growth in Bangladesh. They postulated a symmetrical relationship, ignoring the potential asymmetrical relationship between the variables. NARDL model was used to analyse the yearly time series data from 1988 to 2020. The study confirmed the asymmetrical effects of financial progress and remittances on economic growth and revealed a long-term association between the variables.

The relationship between financial development and remittance inflows in Jamaica for the period 1980-2017 was examined by Das and McFarlane (2021). The study found a cointegrating association linking remittances to financial growth by using the ARDL bounds testing approach. Additionally, a non-linear relationship between remittances and financial sector development was found. Particularly, the relationship between remittances and financial development was U-shaped. It was also found that initially, remittance growth was negatively impacted as a result of financial sector development. Remittances did, however, have a favorable impact on financial development after a threshold. Collectively, the data highlighted

the order in which remittances initially replace financial development and later assist in its completion.

Methodology

This study adapts the study of Fromentin (2018) and Ahamed and Selliah (2020) by assessing financial development for the period 1981-2021 using both banking sector indices and capital market indices. The yearly data were gathered from World Development Indicators (WDIs). The extent to which the banking sector makes funds available to households and businesses and measures financial depth was proxied by Credit to the Private Sector (CPS). Whereas, the size of the capital market and its liquidity relative to the economy were estimated by stock market capitalization, which is a sign of the market's effectiveness. Gross Fixed Capital Formation (GFCF), Trade Openness (TO), and Foreign Direct Investment (FDI) were employed as control variables. The model presented below captures the effects of financial remittances on banking sector development, proxied by CPS as the ratio of GDP and capital market development. The latter is measured using market capitalization as the percentage of GDP.

$$FINDEV_t = f(FINR_t) \quad \text{i}$$

$$CPS_t = f(FINR, GCFC, FDI, TOT) \quad \text{ii}$$

$$CPS_t = (\alpha_0 + \beta_1 FINR_t + \beta_2 GCFC_t + \beta_3 FDI_t + \beta_4 TOT_t + U_t) \quad \text{iii}$$

$$MCAP_t = f(FINR, GCFC, FDI, TOT) \quad \text{iv}$$

$$MCAP_{it} = (\alpha_0 + \beta_1 FINR_t + \beta_2 GCFC_t + \beta_3 FDI_t + \beta_4 TOT_t + U_t) \quad \text{v}$$

where

FINDEV: Financial Market Development at time *t*

$FINR_t$: Financial Remittances as a percentage GDP at time *t*

CPS_t= Credit to the Private Sector as a percentage of GDP at time *t*

$MCAP_t$= Stock Market Capitalization as a percentage of GDP at time *t*

$GFCF_t$= Gross Fixed Capital Formation as a percentage of GDP at time *t*

FDI_t= Foreign Direct Investment as a percentage of GDP time *t*

TOT_t= Trade Openness as a percentage as a percentage of GDP time *t*

α = Intercept

$\alpha_1 - \alpha_6$ = Coefficient of the Independent Variables.

U = Disturbance Term at time *t*

Findings and Discussion

Table 1

Descriptive Statistics of Variables

	CPS	FDI	FINR	GCFC	TOT	MCAP
Mean	9.2057	1.4775	2.7433	35.6305	31.6743	8.4083
Median	8.1716	1.0879	2.0041	33.1073	33.7197	8.7999
Maximum	19.6035	5.7908	8.3338	89.3861	53.2779	30.5089
Minimum	4.9480	0.1838	0.0048	14.1687	9.1358	0.0000
Std. Dev.	3.4718	1.2353	2.4844	18.9694	12.4293	7.6786
Skewness	1.1733	1.7666	0.4064	1.08748	-0.2602	0.7753
Kurtosis	4.1252	6.1937	1.8660	3.9245	2.1284	3.2972
Obs	41	41	41	41	41	41

Note. Source: Authors Compilation (2023), *All figures are in ratio of Gross Domestic Product (GDP)

Table 1 presents descriptive statistics which depict that all the variables have positive mean values which are symmetrical, since the median values are close to the mean values. Similarly, CPS shows that Nigeria is more of a bank-based system, rather than a capital market-based system (8.4%). In terms of comparison between FDI and FINR, the table also shows that financial remittances rank higher (2.7%) as compared to FDI (1.4%). This implies that there is greater inflow through financial remittances by migrants into the economy, relative to the amount received through FDI during the sample period. Furthermore, the results reveal that GCFC and TOT are relatively volatile as compared to other variables in this study. All the variables are positively skewed except for TOT, which recorded a negative value (-0.2602). Only two variables are platykurtic (FINR-1.8660; TOT-2.1284), while others are leptokurtic given their kurtosis values, implying that financial remittances and trade openness produce fewer outliers.

Table 2
ADF Panel Unit Root Test

Variables	*t*-Statistic	Prob.*	Order
CPS	-2.3934	0.1501	I(1)
D(CPS)	-5.4826	0.0001	
MCAP	-2.4705	0.1301	I(1)
D(MCAP)	-6.6968	0.0000	
FINR	-1.7989	0.3757	I(1)
D(FINR)	-6.5644	0.0000	
FDI	-3.8743	0.0049	I(0)
TOT	-2.3784	0.1541	I(1)
D(TOT)	-7.7599	0.0000	
GCFC	-3.7761	0.0064	I(0)

Note. *MacKinnon (1996) one-sided *p*-values.

It is evident from Table 2 that most of the variables are stationary at first difference (FINR, CPS MCAP and TOT), while some are stationary at level (GCFC and FDI), Thus, it gives a strong indication that these variables are integrated. Keeping in view the multileveled stationarity of variables and that none of them is I(2), the current study used the ARDL approach to cointegration to determine the short-run dynamic relationship, long-run relationship, and the equilibrium parameter which are subsequently presented below.

Table 3
Impact of Financial Remittances on Banking Sector Development

Variable	Coeff.	Std. Error	*t*-Stat.	Prob.
D(CPS(-1))	0.4830	0.1544	3.1267	0.0039*
D(FINR)	0.1047	0.2340	0.4477	0.6576
D(FINR(-1))	-0.4659	0.2284	-2.0400	0.0502**
D(FDI)	0.1038	0.2379	0.4361	0.6659
D(TOT)	-0.0206	0.0267	-0.7713	0.4465
D(GCFC)	-0.0675	0.0392	-1.7218	0.0954**
CointEq(-1)	-0.6420	0.1351	-4.7517	0.0000*

ARDL Bounds Test

Test Statistic	Value	*K*	Critical Value Bounds	
			I0 Bound	I1 Bound
F-statistic	11.46067	1	4.94	5.73

Long-Run Coefficients				
Variable	Coeff.	Std. Error	*t*-Stat.	Prob.
FINR	0.6125	0.3308	1.8519	0.0739**
FDI	0.1617	0.3742	0.4319	0.6688
TOT	-0.0321	0.0411	-0.7821	0.4402
GCFC	-0.1052	0.0548	-1.9200	0.0644**
C	11.9353	3.2908	3.6269	0.0011*

Note. *5% **10% Significant Level

Table 3 shows the short-term effects of financial remittances and the growth of the banking industry as a stand-in for financial development. The equilibrium parameter CointEq(-1) has the correct theoretical sign and is significant at 5%, according to the short-run analysis. This shows an approximate 64.2% change in the rate of adjustment from short-term disequilibrium to long-term equilibrium. Only the period lag of CPS, FINR, and D(GCFC) are significant at 5% and 10%, respectively. This is despite the fact that all the variables have positive coefficients. The outcome reveals that there is a substantial short-term link among the variables based on the ECM parameter. The results support the prior results of Mehta et al. (2021), which indicated that remittances have a favourable impact on financial development both in the long- and short-term.

Similarly, the results of bounds test depict the long-run impact of financial remittances and banking sector development. The value of F-statistics from the bounds test is 11.4606. Compared with bound value at I(0) 3.94 and I(1) 5.73, it is evident that the value of F-statistics lies above I(1). This indicates that financial remittances and banking sector development have a long-run association in Nigeria. A review of the long-run coefficients shows that all the variables have positive coefficients, while only FINR and GCFC are significant at 10%. This implies that in the long-run, a 1% increase in financial remittances results in about 61% increase in the level of banking development in Nigeria. This is similar to the results obtained by Bhattacharya et al. (2018), who found a long-term relationship between remittances and financial development. Similarly, In Kenya, Misati et al. (2019) asserted that a positive relationship exists between remittances and financial development in the long-run.

Table 4

Financial Remittances and Capital Market Development

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
D(FINR)	0.6707	0.5265	1.2739	0.2121
D(FDI)	-0.4435	0.7106	-0.6241	0.5371
D(FDI(-1))	-1.9494	0.7459	-2.6131	0.0137*
D(TOT)	-0.0217	0.0853	-0.2544	0.8008
D(GCFC)	0.0085	0.0936	0.0907	0.9283
CointEq(-1)	-0.4234	0.1233	-3.4379	0.0017*

ARDL Bounds Test

Test Statistic	Value	*K*	Critical Value Bounds	
			I0 Bound	I1 Bound
F-statistic	4.8494	4	2.86	4.01

Long-Run Coefficients

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
FINR	1.5841	1.2543	1.2629	0.2160
FDI	4.8632	2.7412	1.7741	0.0859*
TOT	-0.0512	0.2058	-0.2490	0.8050
GCFC	0.0200	0.2220	0.0904	0.9286
C	-1.7332	13.6159	-0.1273	0.8995

Note. *5% **10% Significant Level

The result reveals the short-run impact of financial remittances on financial development through capital market development. They demonstrate that the equilibrium parameter CointEq(-1) is significant at 5% and also has the correct theoretical sign. Table 4 presents both the short-run and long-run effect of financial remittances on financial development using capital market development as a proxy for financial development. According to this table, the rate of change from a short-term disequilibrium to a long-term equilibrium is approximately 42.3%. All the variables have negative coefficients except for FINR and GCFC, which have positive coefficients. This implies that in the short-term, financial remittances improve the capital market, although the improvements are not significant. Based on the ECM parameter, the results suggest that there is a significant short-term relationship among the variables. This is similar to the results obtained by Akçay (2019) for Bangladesh, who found supporting complementarity between both variables in both long- and short-run.

Furthermore, the bounds test depict *F*-statistics value of 4.8494. Compared with the bound value at I(0) 2.86 and I(1) 4.01, it is evident that

the F-statistics value lies above I(1). Thus, there is no presence of a levelled relationship which implies that a long-run association exists between financial remittances and capital sector development in Nigeria. An analysis of long-run coefficients reveals that all factors have positive coefficients, with only FDI being significant at 10%. This shows that a 1% rise in financial remittances would result in a negligible increase in the level of capital market development in Nigeria, whereas an increase in FDI would result in a considerable improvement in the Nigerian capital market. This is comparable to the findings of Ahmad et al. (2019), who found evidence showing a favourable long-term association between financial development and worker remittances in Sri Lanka. In Jamaica, Deonanan et al. (2019) found that remittances enhance long-term financial development.

Table 5

Post-Estimation Test

Test	*F*-statistic	Prob. *F*(8,30)
Serial Correlation LM Test	1.9881	0.1552
Heteroskedasticity Test	1.5118	0.1948

Note. **Source:** Authors Computation (2023)

The findings of several residual-based diagnostic tests conducted in this study to assess the stability and robustness of the model estimate are shown in Table 5. It is evident that serial correlation and homoscedasticity are absent from the empirical model.

Conclusion

The current study found that both capital market-based and bank-based financial development indices have a positive influence on financial development. The study also determined the impact of financial remittances on Nigeria's financial development is both short- and long-term. Financial remittances ranked higher as compared to the FDI received. This fact implies that there was more capital inflow through financial remittances pumped by migrants into the economy relative to the amount received through FDI during the sample period.

Implications

Based on the findings, it is suggested that policymakers and regulatory bodies must implement monetary policies to promote remittance inflows into the economy in order to promote economic growth. Remittances play

a significant role in financial development. The findings would also be very helpful to the Nigerian government if it recognizes the potential development implications of remittance inflows and also takes the necessary steps to formalize these inflows into the economy. Implementing clear legislation and limiting unethical actions is one strategy to encourage the migrants and recipients of remittances to invest in their home countries (Maimbo & Ratha, 2005)

The findings also indicate that financial remittances should be used to minimize the cost of investment by redirecting remittances towards profitable investments through financial inclusion and literacy. Additionally, remittance recipients may be encouraged to keep money in the system, ensuring the security of investment funds in the financial system. Similarly, it is necessary to improve the access to financial goods and services, which would eventually encourage migrants to invest their valuable remittances in the financial industry, spurring development in that industry and ultimately resulting in economic growth. Finally, financial institutions are significant remittance precipitants. So, innovative financial services and products for remittance recipients can be produced at affordable prices to promote the continuous inflow of financial remittances.

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