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Exploring the Moderating Effect of Institutional Quality on the Nexus between Remittances and Financial Development: A Comprehensive Analysis

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ABSTRACT

Purpose – The purpose of this paper is to analyse the moderating effect of institutional quality on the relation between remittances and financial development in low-income economies. The long-term and short-term effects of remittances on financial development have been investigated.

Design/methodology/approach – World Bank country classification is considered to categorize low-income countries. These nations are characterized as having Gross National Income (GNI) per capita falling under the threshold of $1,085. 17 countries are included in the dataset spanning the years 2002 to 2022. Panel Autoregressive Distributed Lag Pooled Mean Group (ARDL-PMG) approach is used in this study. Using the PMG approach allows for distinct analysis of long-term and short-term dynamics.

Findings – According to the findings obtained from the PMG estimator, institutional quality serves as a moderating factor in the nexus between remittances and long-term financial development. These findings indicate that in nations with robust institutional frameworks, remittances are channelled more effectively and promptly towards bolstering financial development, in contrast to regions with weaker institutional structures. Furthermore, it is noted that institutional quality demonstrates a positive correlation with long-term financial development. However, these conclusions do not hold in the short term.

Discussion – The results of this study align with the findings reported in the previous literature. By using the ARDL-PMG model and by considering low-income countries, an important contribution is made to the financial development literature.

1-INTRODUCTION

Remittances are progressively emerging as the predominant origins of external financial support for the least developed countries and in certain instances, serving as a primary catalyst for economic expansion (United Nations, 2021). The latest Migration and Development Brief from the World Bank shows that officially documented remittance flows to low- and middle-income countries (LMICs) are anticipated to increase by 1.4% to $656 billion in 2023. This growth is attributed to a slowdown in economic activity in countries where remittances originate, leading to reduced employment opportunities and wage growth for migrants (World Bank, 2023). In addition, remittances play a role in reducing poverty and, in certain cases, furnish households with capital to support their investments and savings. In several countries, global remittances have stimulated overall economic expansion, primarily by boosting national disposable income (Catrinescu et al., 2009: 81).

Over the last decade, the role of remittances made by migrant workers to their countries of origin in improving financial development has attracted considerable attention. For instance, according to Aggarwal et al. (2011), there is a relation between remittances and financial development in developing nations. This matter is found to be significant due to evidence indicating that the progress of financial development promotes economic growth and diminished poverty (Aggarwal et al., 2011: 255). Research into financial development suggests that remittances have a role in the growth of formal financial channels by aligning local banking practices with international standards. Burgess and Pande (2005) demonstrate that when households can save and access loans for long-term investments, the banking sector can notably impact poverty levels and overall economic growth (Fromentin, 2017: 193). A significant number of studies have found a positive relation between financial development and remittances (i.e. Cooray, 2012). Nevertheless, institutional quality is shown as an important determinant of financial development. In countries with weak institutional quality, the advancement of financial markets via remittances experiences a deceleration. Alternatively, strong institutional quality can mitigate uncertainty, enhance economic efficiency, and promote economic activity,

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leading to improved financial development and economic growth (Kim, 2021: 387). A robust institutional environment influences both the quantity and effectiveness of investment. Therefore, in the presence of favorable institutions, remittances have the potential to be directed more effectively, resulting in increased output (Catrinescu et al., 2009:90). Higher levels of remittances in nations with strong institutions can also lead to notable financial development. Against this backdrop, the relation between financial development and remittances is subject to numerous factors, including the institutional quality of the receiving country.

In nations where institutions lack strength, banks hesitate to extend credit to risky individuals and businesses due to significant information imbalances (Barajas et al., 2018). Consequently, they tend to retain remittance funds in savings as they seek out lucrative lending opportunities. This implies that in regions with poor institutional quality, the advancement of financial markets via remittances is hindered. Likewise, strong institutional quality fosters the development of financial systems, resulting in reduced remittance transfer costs (Aggarwal et al., 2011). As a result, remittances increase financial development by encouraging the people to save more. Generally, institutions establish the framework of social norms and regulations within a country (Calderon et al., 2008). Consequently, in environments with robust institutions, economies operate more smoothly and prosperously. High institutional quality in a country result in higher level of remittances towards these countries, thereby developed financial markets of the countries (Kim, 2021: 387). Although the impacts of institutional quality and remittances on financial development are studied by the pertinent scholarly works, a limited number of papers examine the moderating effect of institutional quality on the relation between remittances and financial development. By synthesizing and critically evaluating the existing body of research, this gap is identified and filled by this paper. The literature search revealed that only Kim (2021) investigates this moderating effect. Distinguishing itself from Kim (2021), the present research has investigated the correlation between financial development and remittances across both short-term and long-term. Over time, the effects of remittances on the economy may vary in both magnitude and direction compared to their short-term impact. Initially, remittances might have been utilized for immediate consumption needs. However, in the long run, they may transition towards financial investments or savings, which can be effectively channelled through formal financial institutions. Remittances offer a means to alleviate the immediate financial constraints faced by recipients, offering a pathway for individuals with limited savings to enter the formal financial system. Over time, the receipt of remittances can enable previously unbanked individuals to access various financial products and services, thereby contributing to the development of the financial sector (Fromentin, 2017:193). Although Kim (2021) considers developing countries in their analyses, low-income countries are considered in the current paper by considering the remarkable remittance flows to these countries. Kim (2021) also takes into consideration the period between 1996 and 2016. The current paper analyses the data for the period 2002-2022 to understand the current state.

World governance indicators are taken into consideration as indicators of the quality of institutions. The average of these indicators is used to capture the overall effect of institutional quality at the national level. This study also uses the Panel ARDL PMG approach to analyse the long-run and short-run effects of remittances on financial development in the presence of higher institutional quality. As it is expected, a positive impact of remittances on financial development is reported in the low-income economies in the long run. However, this relation is not relevant in the short run.

2-LITERATURE REVIEW

One part of the literature covers the impact of institutional quality on financial development. Another part investigates the role of remittances on financial development. However, there is very limited literature that explores the impact of institutional quality on the connection between remittances and financial development. Kim (2021), delves into how the flow of remittances from migrants and the superiority of institutions affect the progress of financial systems in developing nations by considering 46 developing countries for the period of 1996-2016. Kim (2021) demonstrates that both remittances and institutional quality contribute to the advancement of financial development. Furthermore, it highlights the crucial role of institutional quality in amplifying the influence of remittances on financial development, especially in situations where institutional quality achieves a certain elevated level. Their paper is the sole one encountered during the thorough literature review that closely aligns with this study.

Coulibaly (2015), Chowdhury (2011), Burgess and Pande (2005), Giuliano and Ruiz-Arranz (2009), Williams (2016), Bettin and Zazzaro (2012), Chowdhury (2011) are among the research works that find a favorable connection between financial development and remittances. Giuliano and Ruiz-Arranz (2009) outline that in a strong financial market, remittances can serve as a supplementary factor in fostering financial development. Conversely, in economies with less developed financial systems, remittances might impede domestic credit by offering an alternative means of funding investment, a phenomenon known as the substitution effect. Aggarwal et al. (2011) find a positive relation between financial development and remittances in developing nations.

According to Fromentin (2017), remittances inflows result in increase in financial development. Since remittances have an important role in increasing financial inclusion, this relation is expected. Remittances enable individuals without banking access to utilize diverse financial services, thereby contributing to the short-term development of the financial industry (Karikari et al., 2016). Adonsou et al. (2020) prove a long-term relation between remittances and financial development in Sub-Saharan Africa. Azizi (2020) concludes that by lowering the costs of remittances, financial development might be obtained.

Akçay (2020) finds that the remittances and financial development complement each other. The impact of migrant remittances on the growth of the financial industry in the leading recipient nations of South Asia is examined in a paper using a panel cointegration approach by Basnet et al. (2021). According to the test results, remittances have a major and favorable influence on financial progress. Esteves and Khoudour-Castéras (2011), Issahaku, Abor, and Harvey (2017), and Brown and Carmignani (2015), report the non-linear relationship between remittances and financial development. Brown et al. (2013) discover that remittances have no positive effect and may even have a negative one.

Shortland and Girma (2008) discover that the level of democracy and political stability significantly influences the extent of financial development in both developed and developing nations. Law and Azman-Saini (2012) investigate how governance quality impacts financial development in both developed and developing nations. The results reveal a strong positive association between institutions and governance and the development of the banking sector. However, when considering stock market development, the relationship with institutional quality is appeared to be nonlinear. Le et al. (2016) state that improved governance and institutional quality result in financial sector development in Asia and Pacific. In addition, they find that economic expansion and trade openness increase financial depth. Khan et al. (2019) also provide evidence of the positive role of institutional quality on financial development in the United States. Importantly, institutional quality acts as a moderator in the relationship between natural resource rent and finance. Khan et al. (2022) reexamine the nexus between institutional quality and financial development across developing nations. It stands out as the first comprehensive study to categorize countries into developing and emerging categories using multiple dynamic methodologies. Specifically, factors such as political stability, control of corruption, and regulatory quality exhibit positive effects on financial development across the global panel of countries under scrutiny. Interestingly, the study reveals a negative association between the rule of law and financial development, suggesting widespread weaknesses in this aspect across many nations. However, the control of corruption index demonstrates a positive impact on financial development, indicating a reduction in corruption levels in many countries, particularly in the emerging category.

3-DATA AND METHODOLOGY

3.1. DATA

World Bank's country classification by income level is used to determine low-income countries. These countries have GNI per capita below 1085$. After dropping the missing values in the data, it is ended up with 17 countries in the sample. These countries are; Afghanistan, Burundi, Burkina Faso, Democratic Republic of the Congo, Gambia, Guinea-Bissau, Liberia, Madagascar, Mali, Mozambique, Malawi, Niger, Rwanda, Sudan, Sierra Leone, Togo, Uganda. Among low-income economies 7 countries have not been involved in the analyses because of the missing values related to either financial development or remittances data[1]. The dataset

[1] These countries are Central Africa, Eritrea, Ethiopia, South Sudan, Syrian Arab Republic, Chad, Yemen Republic.

covers these 17 countries for the period 2002-2022. Dependent and independent variables used in this paper are shown in Table 1.

Table 1- Variables

Variable Classification	
Dependent Variable	Financial Development (FD)
Independent Variables	Remittances (REM)
	Institutional Quality (IQ)
	GDP Growth (GDP)
	Population Growth (POP)
	Inflation (INF)
	Foreign Direct Investment (FDI)

Financial development (FD) is the dependent variable in the analysis. Domestic credit to private sector by banks (% of GDP) is used as a proxy for FD following Aduba et al. (2023). Domestic credit extended to the private sector by banks denotes the financial assistance granted to non-governmental entities by financial institutions other than central banks, encompassing activities like lending, acquiring non-equity securities, and facilitating trade credits and other receivables that entail an obligation for reimbursement. In certain nations, this coverage may also extend to credit facilities provided to public enterprises (World Bank, 2024a)

Independent variables considered in this research are remittances (REM), institutional quality (IQ), GDP growth (GDP), population growth (POP), inflation (INF) and foreign direct investment (FDI). These variables are commonly considered in the scholarly works to assess financial development (Aduba et al., 2023; Majeed, 2021; Kim, 2021). An interaction term, REM*IQ, is also created as a main independent variable and it is utilized in the regression analysis to examine how institutional quality moderates the relationship between financial development and remittances.

REM is the personal remittances, received (% of GDP) in a particular country. World Bank Databank's definition of remittances is as follows: "Personal remittances encompass both personal transfers and compensation received by individuals. Personal transfers entail all current transfers, whether in cash or in kind, exchanged between resident and non-resident households. This category covers any transfers between individuals residing in different regions. Compensation of employees refers to the earnings of temporary workers employed across borders or for non-resident companies, as well as those of non-residents employed within the domestic economy" (World Bank, 2024b).

In order to measure the institutional quality of each country World Bank's Governance Indicators are used which are Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Corruption Control. The average of these 6 variables are used as a proxy for IQ. The data of this variable ranges approximately from -2.5 to 2.5. 2.5 is the highest institutional quality value and -2.5 is the lowest value (Kaufmann et al., 2010). Kaufman et al. (2010:4) defines each of the variable as follows: "Voice and Accountability evaluates how citizens can participate in government selection, freedom of expression, association, and media freedom. Political Stability and Absence of Violence/Terrorism assesses the likelihood of government destabilization or unconstitutional overthrow, including politically-driven violence and terrorism. It also evaluates government's effectiveness in policy formulation and implementation. Government Effectiveness measures the quality of public services, civil service autonomy, policy formulation and implementation, and government credibility. Regulatory Quality evaluates the government's capability to develop and enforce policies and regulations conducive to private sector growth. Citizens' and state's respect for governing institutions in economic and social interactions. Rule

of Law gauges confidence in societal rules, including contract enforcement, property rights, law enforcement, and judiciary reliability, as well as crime and violence likelihood. Control of Corruption assesses the extent of public power abuse for personal gain, encompassing various corruption forms and state capture by elites and private interests".

GDP represents the yearly percentage increase in GDP at market rates using a constant local currency. Aggregate values are calculated using constant 2015 prices and are denominated in U.S. dollars

POP is the annual population growth rate that measures the percentage change in population from one year to the next. It is computed as the progress of the population midway through the year compared to the previous year (World Bank, 2024d).

INF is the inflation depicted by the annual growth rate of the GDP implicit deflator, reflecting the speed of price changes across the entire economy. This deflator is derived from the ratio of GDP in the current local currency to GDP in constant local currency (World Bank, 2024e).

FDI represents the net investment inflows aimed at acquiring a significant managerial stake (at least 10 percent of voting stock) in a business operating outside the investor's home economy. It encompasses equity capital, reinvestment of earnings, other long-term capital, and short-term capital as detailed in the balance of payments. This data illustrates the net inflow (new investments minus divestments) into the reporting economy from foreign sources, divided by the GDP (World Bank, 2024f).

Institutional quality variable is collected from the World Bank's Worldwide Governance Indicators database and all the other variables are collected from the World Bank's World Development Indicators.

3.2. METHODOLOGY

This study employs the panel autoregressive distributed lag (ARDL) method introduced by Pesaran et al. (1999). Panel ARDL is a dynamic model and has some advantages over other models. The practical benefit lies in its capacity to tailor short-term dynamics to the data available for each country, considering the unique time series observations for each case (Pesaran et al., 1999:630). Additionally, the panel ARDL approach is advantageous irrespective of whether the variables exhibit cointegration at levels, I(0), first differences, I(1), or a combination of both, except in cases where the variables are cointegrated at order 2 (Pesaran et al., 1999; Attiaoui et al., 2017; Gökçeli, 2023: 233). With the help of the PMG approach, long-term and short-term behavior can be determined separately.

The mean group (MG), the pooled mean group (PMG), and dynamic fixed effects (DFE) are the three approaches used in the panel ARDL method. These approaches can be used when time is greater than cross-section (T>N). In the sample, the number of years is greater than the number of countries and as a result, PMG is a suitable approach for the sample. Pooled Mean Group (PMG) estimator involves estimating a model with both autoregressive and distributed lag components (Pesaran et al., 1999:621). As a result of the Hausman test, PMG approach is used in this study. The null hypothesis of Hausman test states that that PMG estimator should be used, whereas the alternative hypothesis requires the use of the MG estimator. If the null hypothesis is accepted, the panel ARDL PMG estimator is used for prediction. Since the null can not be rejected, the PMG approach is used in this study.

Following equation is used for the ARDL-PMG analysis:

$$y_{it} = \beta_i + \sum_{j=1}^{\mathrm{pi}} \delta_{ij}\, y_{i,t-j} + \sum_{j=0}^{qi} \gamma_{ij} x_{i,t-j} + \varepsilon_{it} \quad (1)$$

$$\Delta y_{it} = \beta_i + \Phi_i(y_{i,t-1} - \theta'_i x_{it}) + \sum_{j=1}^{p-1} \delta^*_{ij} \Delta y_{i,t-1} + \sum_{j=0}^{q-1} \gamma^*_{ij} \Delta x_{i,t-j} + \varepsilon_{it} \quad (2)$$

The long-term coefficients in equation (1) are estimated by computing the ARDL model. In the panel ARDL model, p and q characterize the lag lengths, i denotes the group order, and t indicates the time. yit denotes the dependent variable (FD), while xit represents the independent variables. In the second stage of the panel ARDL approach, the error correction model defined in equation (2) is estimated to observe the equilibrium and short-term coefficients between the dependent and independent variables. In the error correction model,

$\emptyset i$ denotes the error correction coefficient, indicating the long-term relationship between yit and xit. If it is negative and statistically significant, it can be inferred that there is a cointegration relationship between yit and xit (Al Mamun et al., 2013: 569-570). $\delta ij*$ and $\gamma ij*$ represent the short-term coefficients of the dependent and independent variables, respectively (Sarıhan and Bayır, 2023:196).

4. EMPIRICAL RESULTS

4.1. Preliminary Results

Table 2 presents the descriptive statistics for the variables used in the analyses The average FD is %11.69 of GDP for the low-income economies. This result is close to the result of Bist (2018) who finds an average value of %13 for the selected 16 low-income economies for the period 1995 to 2004. The average FD value is found to be approximately %35 by Hunjra et al. (2022) for both low- and middle-income countries. Secondly, personnel remittances received in these low-income economies are %3.75 of GDP. Table 2 shows that the sample countries have very low levels of institutional quality with an average of -0.85. GDP growth and population growth of the sample countries are % 4.33 and %2.92, respectively. The average inflation ratio is %9.61 and net foreign direct investment is %5.08 of GDP.

Table 2-Descriptive Statistics

Variable	N	mean	sd	p25	p50	p75
FD	357	11.69	7.78	6.45	10.14	15.58
REM	349	3.75	4.06	1.24	2.57	4.79
IQ	357	-0.85	0.46	-1.16	-0.76	-0.51
GDP	355	4.33	4.81	2.72	4.77	6.48
POP	357	2.92	0.64	2.57	2.87	3.17
INF	357	9.61	18.68	2.45	5.90	10.77
FDI	356	5.08	10.37	1.13	2.74	4.83

Note: The table includes the average, median value (P50), standard deviation (SD), as well as the 25th (P25) and 75th (P75) percentiles. N denotes the total number of observations.

Table 3 shows the correlation among the variables considered in the analyses. A positive significant relation between IQ and FD is reported in this table. Another significant relation is between INF and FD. When inflation increases, financial development seems to decrease. Increased population reduces the remittance ratio and increased FDI increases the remittance ratio. While a positive relation between IQ and GDP is found, a negative relation between INF and IQ is reported. Finally, GDP is positively affected by POP and negatively affected by INF.

Table 3- Pearson Correlation Coefficients

	FD	REM	IQ	GDP	POP	INF	FDI
FD	1						
REM	0.0966	1					
IQ	0.2250*	0.0764	1				
GDP	-0.0009	-0.1138	0.1677*	1			
POP	-0.0878	-0.2234*	-0.127	0.2805*	1		
INF	-0.1930*	-0.1141	-0.1906*	-0.1601*	-0.0356	1	
FDI	0.0074	0.3298*	0.063	0.0035	0.0016	-0.0269	1

Note: *denotes significance at %1 level.

Breusch-Pagan LM test, Pesaran scaled LM test, Bias-corrected scaled LM test and Pesaran CD test are used to test the cross-sectional dependence in the error term. The test results are represented in Table 4. According to the cross-sectional test results, the null hypothesis indicating no horizontal cross-section dependence has been rejected. In this context, it has been decided that there is cross-sectional dependence in all series to be used in the analysis.

Table 4- Cross-Sectional Dependence Test Results

	Breusch-Pagan LM	Pesaran scaled LM	Bias-corrected scaled LM	Pesaran CD
FD	1156.76 (0.000)	61.89 (0.000)	61.47 (0.000)	24.70 (0.000)
REM	819.92 (0.000)	41.47 (0.000)	41.04 (0.000)	15.33 (0.000)
IQ	689.50 (0.000)	33.56 (0.000)	33.14 (0.000)	-0.083(0.9339)
GDP	184.39 (0.0036)	2.93 (0.0033)	2.51 (0.0121)	5.82 (0.000)
POP	642.33 (0.000)	30.70 (0.000)	30.28 (0.000)	4.63 (0.000)
INF	188.31 (0.0020)	3.17 (0.0015)	2.75 (0.0060)	5.33 (0.000)
FDI	325.63 (0.000)	11.50 (0.000)	11.07 (0.000)	4.60 (0.000)

Note: P values are shown in the parentheses.

Table 5 reports the unit root test results of the variables. Due to the issue of cross-sectional dependence in the data, Pesaran's (2007) developed CADF unit root test, which considers the problem of cross-sectional dependence, is employed to investigate the stationarity of the data. According to the test results, FD, GDP, POP, INF and FDI are stationary at I(0) level. REM and IQ are stationary at the first differences. The stationarity status of each variable has also been examined for models with both a constant and a trend. Except FD, REM and GOV all of the variables are stationary at I(0) in the models with a constant and trend. In addition, FD, REM and GOV are stationary at the first differences in these models. As a result, all of the unit root tests indicate that none of the variables exhibit cointegration in the second difference.

Table 5-CADF Panel Unit Root Test Results

Variables	**I(0) Level**		**I(1) First Difference**	
	Constant	**Constant&Trend**	**Constant**	**Constant&Trend**
FD	-1.690 **	3.015	-	-3.128 ***
REM	0.125	3.015	-4.198***	-2.923***
IQ	-1.180	0.515	-3.925 ***	-2.892***
GDP	-5.624***	-3.585***	-	-
POP	-5.047***	-1.608**	-	-
INF	-3.631 ***	-4.386***	-	
FDI	-3.274***	-3.033***	-	-

Notes: ***, **, and * represent a significance of 1%, 5%, and 10%, correspondingly.

Table 6 shows the homogeneity test results of the model used in this study. Swamy S and Perasan&Yamagata test statistics are reported in the table. The null hypothesis of these tests states that slope coefficients are homogenous. Since the P values are 0.000 in all the tests, the null hypothesis is rejected. Therefore, the coefficients are heterogeneous. Pesaran et al. (1997, 1999) have proposed two new techniques for estimating dynamic panels where the slope coefficients are different for cross-sections (i.e., heterogeneous): the mean-group estimator (MG) and the pooled mean group estimator (PMG).

Table 6- Swamy S and Perasan& Yamagata Tests Results

	Test	**Test statistics**	**P-Value**
Swamy S	S Test	20047.17	0.000
Perasan& Yamagata	Δ	7.813	0.000
	Δadj	10.449	0.000

4.2. Results of PMG Estimation

To determine the model to be used in the analysis, Hausman test is made between PMG and MG approaches. Table 7 shows the Hausman test result which can not reject the null with a p-value of 0.67. Since the null hypothesis is the long-term coefficients are homogeneous, the PMG approach is used in the analysis.

Table 7- Hausman Test

Hypotheses	Chi2(6)	P value
PMG vs MG	4.91	0.67

Table 8 shows the results of the regression which uses the PMG method. Both short-term and long-term results are reported in the table. According to the results obtained with the PMG estimator, the statistically significant and negative error correction coefficient (ECT) indicates the presence of a long-term relationship between the variables. It is expected that the ECT takes a negative value between -2 and 0. The error correction coefficient (-0.07) suggests that approximately 7% of any imbalance in the model will be corrected in the next period following an imbalance shock, approaching equilibrium in the long run.

Firstly, the main independent variable REM*IQ positively affects FD in the long term. Therefore, countries with higher institutional quality attracts more remittances and this result in higher financial development. To put it differently, institutional quality has a moderating effect on the relation between remittances and financial development. These findings imply that in nations with robust institutions, remittances foster financial development compared to those with weaker institutional frameworks.

When the REM coefficient is considered, it can be seen from Table 8 that it has not any significant effect on FD. However, IQ has a significantly positive impact on FD in the long term. A 1% change in the IQ variable results in a statistically significant positive effect of 11.5% on FD. Therefore, the governance quality of the sample countries positively impacts financial development. Remittances are effective on financial development only for higher governance quality countries.

On the other hand, among the control variables POP, INF, and FDI are effective in financial development. As population and inflation increase in the sample countries, the financial development ratio decreases in the long term. A 1% change in the INF variable leads to a statistically significant negative effect of 0.52% on FD. Inflation could influence the decisions of economic actors regarding nominal values, potentially dissuading financial intermediation and encouraging investment in tangible assets. It may also diminish remittance flows and hinder the development of the financial sector by elevating risks (Fromentin 2017: 197). In addition, the increased population growth in low-income economies decreases the financial development ratio. A 1% change in the POP variable results in a -6.11% effect on FD. "According to Ozili (2018), the increase in population can lead to heightened demand for resources. Nonetheless, this scenario can create opportunities for innovation that effectively counteract price hikes over time, potentially boosting revenue. Consequently, the impact of population growth may present a combination of outcomes" (Majeed et al., 2021: 106). Finally, FDI has a positive impact on FD in the long term. A 1% change in the FDI variable leads to a 0.78% effect on FD. "Moreover, the advancement of financial systems holds significance, as certain researchers posit that nations boasting a robust financial sector tend to draw greater FDI (Desbordes and Wei, 2017), thereby fostering increased economic growth (Alfaro et al., 2004)" (Henri et al., 2019: 216).

Table 8 also shows the short-run results of the PMG method and reports that none of the variables is effective on FD in the short run. According to Fromentin (2017), remittances have minimal or even negative effects on financial development in low-income countries in the short term. It is likely that remitted reserves are mostly used for consumption rather than financial investments, leading to a short duration of these funds within financial institutions. Additionally, the impact of remittances might not be immediate. Remittances can either be largely invested or used to support current consumption. Initially, remittances may be used for consumption, but over time, they could shift towards financial investments or savings, which would then engage financial institutions more effectively (Fromentin, 2017: 197). All the other independent variables do not have any effect on financial development in the short-run. Therefore, the impact of these variables on financial development also takes time.

Table 8- The Relation between Financial Development and Remittances

Dependent Variable (FD)	
Long-Run Results	
REM*IQ	1.57 (3.14)***
REM	0.13 (0.56)
IQ	11.59 (2.60)***
GDP	0.01 (0.14)
POP	-6.11 (-3.20)***
INF	-0.52 (-6.15)***
FDI	0.78 (4.25)***
Short-Run Results	
ECT	-0.07 (-2.18)**
REM*IQ	-1.52 (-1.35)
REM	-1.31 (-1.44)
IQ	1.84 (0.59)
GDP	-0.001 (-0.03)
POP	-1.88 (-1.05)
INF	0.01 (0.54)
FDI	-0.02 (-0.30)
Constant	3.27 (2.09)**

Notes: ***, **, and * represent a significance of 1%, 5%, and 10%, correspondingly.

5. CONCLUSIONS

A considerable body of research investigates how remittances influence financial development or how institutional quality impacts financial development. Yet, there have been no studies investigating how the inflow of remittances to low-income countries with higher institutional quality impacts financial development. To put it differently, this study examines how institutional quality in these nations moderates the connection between financial development and remittances. Remittances are an important external source for those countries and as a result, it is important to examine the impact of remittances on these countries' financial development. On the other hand, it is known that institutional quality is an important driver of financial development. Therefore, it is interesting to investigate the role of institutional quality on the relation between remittances and financial development.

Furthermore, by utilizing Panel ARDL- PMG methodology within a dynamic framework, this study investigates both short-term and long-term effects of remittances on financial development. According to the

regression results, higher institutional quality countries attract remittances and this affects financial development positively in the long-term. It also seems that the increased institutional quality results in higher financial development which is in line with the existing works. It seems that remittances result in a rise in financial development in the long term. Remittances offer recipients the opportunity to open accounts, enhancing the banking system's liquidity and increasing access to credit for the clients. It's feasible that remittance arrivals enable banks to support credits further, potentially lowering overhead expenses (Fromentin, 2017:197). However, the coefficient of the interaction term is insignificant in the short term. The effect of remittances on financial development in the higher institutional quality countries is not seen in the short term. Thus, the impact of remittances on financial development might require an extended period to manifest fully. There is a delay before remittances to show a positive effect on financial development. Hence, in such nations, remittances are predominantly directed towards financial investments or savings rather than immediate consumption. Consequently, remittances remain within financial institutions for extended periods, potentially exerting a lasting impact on financial development. Nevertheless, the impact of remittances is greatly influenced by the quality of institutions. This indicates that strong institutional quality can aid in the effective and efficient channeling of remittances, thereby fostering financial development. Therefore, it seems that stronger governance quality of the countries results in more developed financial markets with the help of a higher ratio of remittances. Because of the robust governance framework, the investment environment is notably favorable, leading banks to be more inclined towards lending and holding reduced liquidity (Coulibaly, 2015). Consequently, an increase in remittances could potentially contribute to enhanced financial development under these circumstances (Fromentin, 2017:198).

Among the control variables, while population and inflation seem to negatively affect financial development, foreign direct investment positively affects financial development in the long term. Inflation may affect economic decisions by influencing nominal values, potentially discouraging financial intermediation, prompting investment in tangible assets and impeding financial sector development by increasing risks. Furthermore, population growth in low-income economies can reduce the financial development ratio. Population growth can also stimulate demand for resources, leading to opportunities for innovation that could counteract price increases over time and potentially boost revenue. Therefore, the impact of population growth may yield a combination of outcomes. Lastly, the strength of financial systems is crucial, as some scholars suggest that countries with robust financial sectors tend to attract more FDI, thereby promoting increased economic growth.

According to the results of this study, the plausible policy implication might be that low-income countries have to strengthen their institutional framework to attract migrants' remittances and to have higher financial development. Policymakers need to create and enforce policies that inspire migrant workers to send remittances through recognised financial channels. Steps should be taken to increase the level of remittances and thereby contribute to the growth of the financial development. Low-income countries with weak institutional frameworks must strengthen their institutions to ensure that migrants' remittances are transmitted more effectively (Fromentin, 2017). This improved transmission will help to promote financial development. In addition, if population growth and inflation negatively impact financial development, high inflation will increase CDS premiums, making the economy more vulnerable due to exchange rate and interest rate risks, thereby reducing FDI inflows. Therefore, a stable economic management, low CDS premiums, low inflation, and a predictable exchange rate policy are recommended. Furthermore, the same research question can be tested for other countries such as middle-income and high-income countries for further research.

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