Are Institutions Improving the Contribution of Remittances to Economic Growth? A Panel Data Analysis

Hajer Habib[a]

Abstract: *This paper is to test the hypothesis that better governance can improve the response of remittances on economic growth. Using panel data for 12 Middle East and North Africa (MENA) countries over the period of 2002 to 2020, the various estimates were carried out by the system generalised method of moments (GMM) method to examine the problem of endogeneity, and unobserved heterogeneity. The results indicate that migrant remittances have a direct negative link to economic growth due to it being mainly used for consumption. This increases the likelihood of dependency, which leads to the reduction of labour supply. The joint relationship between the governance composite index, and remittances, may moderate this negative effect on economic growth. However, considering the individual dimensions of governance, this shows that only the interaction between remittances and the control of corruption gives a positive and significant impact. The interaction between remittances and the five other governance quality indicators appears to be negative and insignificant. This shows that political instability, ineffective government, and poor regulatory quality encourages money transfer through informal channels that thwart economic growth in MENA countries.*

Keywords: International migration; Quality of governance; Economic growth; GMM estimator; MENA countries
JEL Classification: C33, F24, O47

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[a]   Laboratory for International Economic Integration (LIEI), Faculty of Economics and Management of Tunis-University El-Manar-Tunisia. Email: hajerhabib.k@gmail.com, ORCID ID: https://orcid.org/0000-0002-7375-6920

1.   Introduction

Remittances are seen as an important growth factor in several recipient countries. For economists, these remittances are considered a boon for development. Over the past few decades, remittances received from migrants working abroad have increased significantly, from $2.98 billion in 1975, to nearly $714 billion in 2019, then, following the global coronavirus health crisis (World Bank, 2020), a decrease by an estimation of 7% in 2020 (from $714 billion in 2019 to $665 billion in 2020). According to a World Bank note on migration and development that excludes China (World Bank, 2019), the analysis states that they are the main source of foreign exchange revenue in low and middle-income countries. In other words, migrant remittances exceed foreign direct investment (FDI) as the main source of external financing in several countries dependent on these funds. They tend to be stable and increase during periods of economic downturn, and natural disasters (Edelbloude et al., 2017; Yang, 2006). However, the real value of remittances is much higher in developing countries, as it includes informal flows (Freund & Spatafora, 2005).

Considering the significant growth in remittances over the past few years, the Middle East and North Africa (MENA) countries are also affected by international migration. The World Bank considers that migrant remittances to these countries have followed a year-on-year upward trend. For some economies, such as Lebanon, Jordan, and Egypt, they are major sources of foreign exchange. According to World Bank data, in 2019, the flow of remittances to the MENA region increased by an estimation of 9.1%, reaching $59 billion. These foreign financial flows come from more than 40 million migrants that originate from this region. The main recipient countries of remittances, as a percentage of gross domestic product (GDP), are Yemen and Lebanon for 12%, followed by Egypt and Jordan for 10%, Morocco for 6%, and Tunisia for 5%. However, as in all countries around the world, MENA countries are seeing a significant decline in remittances for up to $47 billion, or a 19.6% share in 2020. This is due to the COVID-19 health crisis. This decline is mainly due to the slowdown in growth in the euro area, and the fall in oil prices in the countries of the Gulf Cooperation Council (GCC) (World Bank, 2020). With the return to growth in the host countries and the increase in oil prices, the growth rate of remittances to the MENA region increased by an estimation of 9.7% in 2021, compared to

2020 that reached $62 billion.

The large volume of remittances has been the subject of extensive literature that examined its impact on economic growth in developing countries. Thus, many mutually influencing factors condition the relationship between remittances and economic growth. Various studies (Adams & Klobodu, 2016; Catrinescu et al., 2009; Acosta et al., 2007) confirm that this relationship is positive. These works have shown that remittances can generate a significant and positive effect through education, development of the financial system, and good institutional quality. Other studies that discuss its negative effect find that these funds have contributed to growth of recipient countries (Barajas et al., 2009; Ahoure, 2008; Chami et al., 2003).

It should be noted that among the important determinants of economic performance is the quality of governance. This indicator improves the efficiency of the investment environment in developing economies (El-Hamma, 2017; Chowdhury, 2016; Catrinescu et al., 2009). The majority of studies examine only the direct effects of government policies on remittances, and a country's economic growth, without taking into account the role of governance indicators, such as corruption control and political stability.

In this study, the role of institutions, and the response of migratory remittances to stimulate economic growth in MENA countries are considered. A systematic generalised method of moments (GMM) methodology is used to estimate the dynamic effects between the variables in the model. It is in this perspective that this work suggests answers to the following question: Does better governance influence the effect of remittances on economic growth?

The answer to the central question of this paper takes five parts. The following section describes a literature review on the links between remittances, quality of governance, and economic growth. The third section presents the model specification, the data sources, and the research methodology used. The fourth section presents the results of the different estimates made at each step, as well as the interpretations of these results. The last section concludes and presents policy recommendations.

2. Literature Review

Some studies (Gorlich et al., 2007; Funkhouser, 1992) postulate that remittances are detrimental to productivity and growth in low-income

countries because these remittances are spent specifically on consumption rather than productive investments. Based on a panel of 113 countries, Chami et al. (2003) show that migrants' remittances are divided into three parts: the largest proportion is spent on consumption, a small part is for investment or savings, and a third part is invested in housing and the purchase of land. This is not necessarily productive for the economy. Also, the authors conclude that there is a problem of moral hazard that minimizes the contribution of remittances to stimulate productive investment in developing economies, thus leading to poor economic performance. Azam and Gubert (2002) point out that remittances reduce the effort and time spent working among recipient households in home countries. Along the same lines, and through a panel of the main destinations of Tunisians in Europe for the period from 1994 to 2014, Habib and Boulila (2018) confirm that an increase in remittances significantly reduces labour supply, and consequently, increases the level of unemployment. In the same context, in countries where remittances are high, most empirical work indicates that remittances register an appreciation of the exchange rate. This appreciation reduces a country's competitiveness, slows economic growth, and leads to the effects of the "Dutch Disease" (Acosta et al., 2007).

Other studies (Adams & Klobodu, 2016; Rapoport & Docquier, 2005) show that remittances contribute to economic growth through their positive impact on consumption, savings, and investments in physical, and human capital. Adams and Page (2005) prove that migrants' remittances enhance economic growth through their direct effects on investments and savings, and their indirect effects on consumption. Using a Tunisian sectoral database, over the period from 1987 to 2012, Kouni (2016) contributes to the existing literature that concerns the relationship between remittances and economic growth. The author's conclusions show that remittances have largely affected economic growth in Tunisia. Even though the share of remittances for investment is lower than that for consumption, the amount of remittances has a positive effect on the added value of economic sectors in national GDP. Also, the positive effects of migrant remittances on poverty and inequality are clear in several studies (Majeed, 2015; Adams & Page, 2005). Using a panel of over 100 countries over the period 1975 to 2003, Giuliano and Ruiz-Arranz (2009) show that remittances help promote growth in countries with less developed financial systems. They argue that this proves that agents compensate for the lack of development in the financial sector by

using remittances to mitigate liquidity constraints, and to channel resources into productive uses that promote economic growth. On the contrary, Bettin and Zazzaro (2009) find a complementarity between remittances and the development of the banking system in economic growth. These remittances only promote growth in countries where the banking system is efficient. Using a dynamic Keynesian model, Barajas et al. (2009) explain that remittances increase the amount of funds circulating in the national financial system, which can lead to financial development and accelerate economic growth by stimulating investments through easing credit constraints.

Governance can also be seen as an engine of growth. The New Institutional Economics affirms that the quality of institutions is among the effective determinants that influence sustainable economic growth. North (1990) defines institutions as "the rules of the game" that determine a country's political, social, and economic structure. Ono and Shibata (2001) show that institutional development determines GDP growth. Based on cross-sectional data, Knack and Keefer (1995) indicate a positive relationship between the quality of governance and economic growth. Mauro (1995) finds that countries with a high corruption index tend to have a low level of economic performance. Acemoglu et al. (2001) show that the quality of governance increases productive investments as well as sustainable growth.

In relation to migration, some studies show that remittances are seen as a crucial strategy to strengthen economic growth, in conjunction with good institutional quality. From a dataset of 114 countries over the period from 1991 to 2003, Catrinescu et al. (2009) show, using an estimate of a dynamic model of panel data by Arellano and Bond (1991), that there is a positive impact of remittances on economic growth via improving the quality of governance to encourage investment. By introducing the interaction between remittances, human capital, financial system development, and political institutions, Fajnzylber et al. (2008) find that there is a positive relationship between remittances and economic growth through human capital accumulation, a strong financial system, and improved quality of governance. Estimations using the dynamic panel method show that remittances have a negative effect on GDP per capita (Ahoure, 2008). The authors emphasize the need for good governance for remittances to positively affect the GDP of recipient countries. Similarly, Adams and Klobodu (2016), examine the relationship between remittances, political

stability, and economic growth using the GMM estimation. The authors show that these remittances positively correlate with economic growth of the political regime is democratic, and the presence of a government is stable.

Based on a dynamic panel econometric analysis (GMM-Sys) suggested by Blundell and Bond (1998), the following section is focused on verifying the hypothesis that a better quality of governance can improve the link between remittances and economic growth in the case of MENA countries, which are confronted by sociopolitical instability and institutional problems due to the Arab revolutions.

3.   Conceptual Framework and Research Methodology

3.1   Model specification

To capture the interactions between remittances, the quality of governance, and their effects on GDP per capita, for some MENA countries, the study uses a dynamic panel that considers the endogeneity biases between the variables. The lagged GDP per capita as an explanatory variable is incorporated in the model to control the reactions of the long-run control variables (Dithmer & Abdulai, 2017). The model is based on previous works, such as Kaufmann et al. (2010), Barro (1996), and Knack and Keefer (1995). The model specification can be written as follows:

$$Y_{it} = \alpha_0 + \alpha_1 Y_{i,t-1} + \alpha_2 R_{it} + \alpha_3 G_{it} + \alpha_4 (R_{it} \times G_{it}) + \alpha_5 X_{it} + \emptyset_i + \varphi_t + \varepsilon_{it} \tag{1}$$

Where Y_{it}, is GDP per capita (in constant 2015 dollars), $Y_{i,t-1}$ represents the initial GDP per capita to test the convergence hypothesis, according to Barro (1996). R_{it} is the interest explanatory variable, corresponding to workers' remittances, and employee compensation, as a percentage of GDP. The GDP ratio, by far, is the indicator most used by economic analysts to monitor economic conditions. X_{it} is a matrix of control variables which are the determinants of economic growth, such as *GFCF*, *INF*, *POPg* and *DF* (see Table 1), $\emptyset_i$ is the country-specific effects, φ_t is the time-specific effect, α_j with j = 0, 1, 2, 3, 4, 5 are the parameters to be estimated, while ε_{it} is the error term. Lastly, *i* and *t* are the indices of countries and periods.

Table 1. Description of Variables and their Relationships

Variables	Definition	Expected sign
Yi	GDP per capita in constant 2015 dollars.	
Yi,t-1	Initial GDP per capita in constant 2015 dollars.	+
R	Personal remittances, received (% of GDP).	+/-
GFCF	Gross Fixed Capital Formation (% of GDP), is a proxy for investment in physical capital.	+
INF	Inflation, GDP deflator (annual %).	-
POPg	Population growth (annual %).	-
DF	Financial development is ensured by domestic credits to private sector (% of GDP).	+
G	Matrix of six governance quality indicators: political stability (PS), government effectiveness (GE), regulatory quality (RQ), voice and accountability (VR), rule of law (RL) and corruption control (CC).	+

Source: Author's own.

With regard to institutional factors, G is a matrix which is composed by the six quality of governance indicators mentioned in the literature (Emara & Jhonsa, 2014; Kaufmann et al., 2010) - Political Stability (PS), Government Effectiveness (GE), Regulatory Quality (RQ), Voice and Accountability (VA), Rule of Law (RL), and Corruption Control (CC). These institutional indicators in the political domain are set by the World Bank's "Governance matters" programme, following the methodology of Kaufmann et al. (2010).

3.2 Data source

The data from this study covers a sample of 12 MENA countries (Algeria, Egypt, Iran, Israel, Jordan, Lebanon, Morocco, Malta, Oman, Sudan, Tunisia, and Turkey). The choice of these countries is justified by two reasons, they are the first countries of emigration in the region and are also the countries where the remittances represent a significant share of GDP, and data is available for the 2002 to 2020 period. Based on the previous studies and the availability of data, the variables of the model are selected, and the data were taken from the World Bank databases. Data from the World Development Indicators (WDI) (2022) are available over several years. Concerning the governance indicators published by the Worldwide Governance Indicators (WGI), they are available for most MENA countries for the years 1996,

1998, 2000, and from 2002 to 2020. To ensure the continuity of the series, the study spans the period 2002 to 2020. The main determinants of economic growth considered capture economic, demographic, and the financial and institutional variables of countries.

In addition, GDP per capita was also used as a dependent variable because it is more appropriate than the overall GDP in measuring a country's development (Majeed, 2019; Bettin & Zazzaro, 2009; Ahoure, 2008). To account for economic factors, gross fixed capital formation (GFCF) was used to control physical capital investment, one of the indicators suggested by the literature (Meyer & Shera, 2017; Catrinescu et al., 2009). Also, inflation rate, approximated by the GDP deflator (base year 2010) was included in accordance with the literature (El-Hamma, 2017). This variable reflects the macroeconomic stability and monetary discipline of a country. High inflation, and creation of poor macroeconomic policies, create an economically unstable environment (Loayza et al., 2012).

On the other hand, financial factors refer to migrants' remittances, which is defined as the sum of three items of the Yearbook of Balance of Payments Statistics: workers' remittances, employee compensation, and migrant transfers. As the costs of formal remittances are relatively high, individuals use informal channels to send money to their families in their countries of origin. Thus, it should be noted that the data underestimated the total remittances, as the official data does not include either informal or in-kind remittances. The literature gives paramount importance to this variable as a determinant of economic growth. In this study, financial development is approximated by domestic credits to the private sector (% GDP). This indicator assesses financial intermediation, that is, the private sector's dependence on banks to finance consumption and investment (Catrinescu et al., 2009; Giuliano & Ruiz-Arranz, 2009). Finally, the annual percentage population growth rate is included to capture population pressure on economic growth.

To measure institutional development, the six governance indicators, as mentioned above (PS, GE, RQ, VA, RL, and CC) were included in the estimations. These indicators focus on three important dimensions of governance, such as the economic dimensions that include the respect of citizens, the state for the institutions governing economic and social interactions between them (RQ and CC), the political dimensions consist of the government selection process (VA and PS), and the legal dimensions

that include the government's capacity to design and implement effective programmes (GE and RL) (Asongu & Nwachukwu, 2016). Sani et al. (2019) show that variables relating to economic aspects (CC and RQ) are the best measures of governance quality.

Indeed, the correlation matrix indicates the bivariate statistics between the explanatory variables of the model (Ogundari & Awokuse, 2018). However, as presented in Table 2, the correlations between the six governance indicators are found to be moderately high, with correlation coefficients greater than 0.50. According to Kar and Saha (2012), this strong correlation subjects the model to a problem of multicollinearity. Therefore, a composite governance index is constructed as the main component, using the six measures of governance (Tunyi et al., 2020; Catrinescu et al., 2009). The aggregate Governance Quality Index (GQI), a composite measure, is calculated by the Principal Component Analysis (PCA) method. This indicator provides an overview of the performance of governance. In the second part of Table 2, the statistics of the PCA are presented. The results show that the first component (Comp1) of the GQI records 82.9% of the variance between the six components, while the other five components record between 0.6% and 10% of the variance. Also, the first component (Comp1) gives the highest eigenvalue of 4.9759. As a result, these statistics give rise to a measure of the GQI from the first principal component (Comp1).

Table 2: Correlation Matrix of Governance Quality Indicators and Construction of GQI by PCA

Variables	PS	VA	GE	RQ	RL	CC	
PS	1.0000						
VA	0.4414	1.0000					
GE	0.6139	0.8134	1.0000				
RQ	0.6300	0.8040	0.9119	1.0000			
RL	0.7323	0.8032	0.9231	0.9307	1.0000		
CC	0.6891	0.7523	0.9359	0.8847	0.9392	1.0000	
Components	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Unexpl
PS	0.3317	0.8390	0.3859	0.0183	0.1730	0.0828	0.000
VA	0.3811	-0.5047	0.7472	0.1670	-0.0225	0.1151	0.000
GE	0.4302	-0.1545	-0.3140	0.2554	0.7369	-0.2902	0.000
RQ	0.4267	-0.1209	-0.1685	-0.8098	0.0678	0.3385	0.000

Variables	PS	VA	GE	RQ	RL	CC	
RL	0.4393	0.0435	-0.0777	-0.1018	-0.5267	-0.7150	0.000
CC	0.4296	0.0304	-0.3997	0.4904	-0.3801	0.5194	0.000
Eigenvalue	4.9759	0.5935	0.2189	0.1136	0.0605	0.0375	
Difference	4.3824	0.3746	0.1054	0.0530	0.0230	–	
Variance %	0.8293	0.0989	0.0365	0.0189	0.0101	0.0063	
Cumulative %	0.8293	0.9282	0.9647	0.9837	0.9937	1.0000	

Source: Author's calculation based on WGI database.

The results of the descriptive statistics in Table 3 show that the average GDP per capita is about $9,701.02 million, while the maximum recorded is about $38,995.23 million. This finding indicates that the MENA region has experienced high instability in production with a standard deviation of $9,585.47 million. Thus, the average remittances as a percentage of GDP is about 5% for the whole sample, however, there are some countries, such as Lebanon, Jordan, and Egypt, where they represent more than 10% of GDP. These additional income streams also show significant volatility with a standard deviation of 6.17%. The share of GFCF in GDP on average is 24.9%. Descriptive statistics for institutional development indicators are negative in most MENA countries over the same study period. For government efficiency, regulatory quality, and rule of law, the average value is -0.1. For political stability, the value is -0.70. It is -0.58 for voice and accountability, and -1.99 for the corruption control indicator.

Table 3: Descriptive Statistics

Variables	Average	Std. deviation	Min	Max	Obs
Y	9701.020	9585.470	1852.800	38995.230	228
R	4.808	6.258	0.042	26.424	228
GFCF	24.900	6.172	12.446	43.074	228
INF	8.582	13.120	-25.128	115.277	228
POPg	2.073	1.376	-0.442	7.350	228
DF	54.662	28.715	3.736	122.110	215
PS	-0.704	0.952	-2.665	1.598	228
VA	-0.587	0.827	-1.851	1.372	228
GE	-0.104	0.702	-1.638	1.386	228
RQ	-0.139	0.848	-1.709	1.429	228
RL	-0.101	0.749	-1.649	1.614	228
CC	-0.200	0.668	-1.546	1.196	228

Source: Author's own.

3.3   *Research methodology*

The GMM method is employed to estimate the equation (1). Unlike standard econometric techniques, such as the ordinary least squares method (OLS), the GMM dynamic panel methodology allows to control unobserved heterogeneity (individual specific effects $\emptyset_i$ and time-specific effect φ_t) and to compensate the endogeneity bias of the variables, namely remittances. This endogeneity lies in the case where the countries with a low level of economic growth are those which receive more migratory transfers. These transfers help lift respective families out of poverty in the country of origin (Ogunniyi et al., 2020; Ahoure, 2008). Additionally, the estimations control for the potential endogeneity bias between remittances and the quality of institutions. To add on to the classic reasons, the endogeneity of remittances would be linked to the fact that poor quality institutions constitute serve as an incentive for people to migrate. The countries characterised by unstable institutions are also those that mainly receive migratory remittances, leading to the presence of a two-way causality.

The generalized first difference moment estimator (GMM-Diff) from Arellano and Bond (1991) is used for estimating equation (1). The GMM-Diff strategy requires differentiating equation (1) in level. The first difference of the variables eliminates the country-specific effects and thus, the bias of the omitted variables. Consequently, the first difference of the exogenous variables is instrumented by their past values. The presence of these instruments are necessary to address the problem of the correlation of residues with the lagged dependent variable. The simultaneity bias, and the bias introduced by the presence of the lagged dependent variable, are reduced.

Despite its effectiveness on simple panel data estimators, the Arellano and Bond (1991) estimator suffers from instrument weaknesses. The lagged values of the exogenous variables have proved to be weak instruments of the first difference equation, as the series is very stable (Bound et al., 1995). This weakness of the instruments affects the performance of the GMM-Diff estimator and can lead to inefficient and biased parameter estimates. In addition, the differentiation of the level equation only considers intra-country variations.

For these reasons, a dynamic panel model using the GMM-Sys estimator, developed by Arellano and Bover (1995), in two steps, is adopted: where the lagged values of the dependent variables, remittances, governance, and the interaction term act as instruments. This method combines the first

difference equation (Arellano & Bond, 1991) with that of level. Blundell and Bond (1998) prove that the GMM-Sys estimator gives a more significant result than those given by the GMM-Diff estimator. In addition, the GMM-sys estimator allows the testing of the autocorrelation on the error term AR (1) (H0: absence of first-order autocorrelation), and AR (2) (H0: absence of second-order autocorrelation) to analyse the efficiency of the instruments and to detect specification errors in the model, and also to test the hypothesis of over-identification of a model by applying the Sargan-Hansen test (H0: the instrumental variables are valid). The Hansen test is built on the assumption that if the instruments are valid, the exogenous variables are not correlated with the residues.

At the beginning, the direct effect of remittances on GDP per capita (α_2 measure the direct effect) is tested. In the second set of regressions, the interaction effect between the variables (α_4 measure the indirect effect) is identified. In other words, the hypothesis that the relationship between remittances and economic growth depends on the level of the governance quality is investigated. The purpose is to estimate the combined effect of remittances and institutional quality on the economic growth of the MENA region. Thus, equation (1) includes an interaction term between remittances and governance quality indicators, where the sign and the meaning of the coefficient α_4 are used to distinguish between the complementarity and the substitutability of the interactive variables.

4.   Empirical Results and Economic Interpretations

The results of the estimations (Table 4) show that the overall model is statistically significant (chi2 is high and significant at 1% in all regressions). The GMM-Sys method gives more significant results than the GMM-Diff method of Arellano and Bond (1991) (chi2 is high in all the estimates). The GMM-Sys method makes it possible to eliminate the weaknesses of the instruments approximated by lagged variables.

Table 4: Effect of Remittances and Quality of Governance on Economic Growth

Independent Variables	Dependent variable: GDPpc (in constant 2015 dollars)				
	GMM-DIFF (1)	GMM-SYS (2)	GMM-SYS (3) (GQI)	GMM-SYS (4) (PS)	GMM-SYS (5) (VA)
Constant	1.3045 (5.66)***	0.1264 (1.17)	0.3244 (2.44)**	0.1042 (0.82)	0.0309 (1.26)
lnY_{t-1}	0.8594 (31.21)***	1.0174 (83.22)***	0.9750 (63.79)***	1.0021 (74.96)***	0.9961 (68.2)***
lnR	-0.0157 (-2.97)***	-0.0063 (-1.67)*	0.0176 (1.51)*	-0.0149 (-2.42)**	-0.0126 (-2.43)**
lnGFCF	0.0252 (1.65)*	0.0355 (2.43)**	0.0702 (3.78)***	0.0732 (3.92)***	0.0350 (2.70)***
lnINF	-0.0031 (-1.19)	-0.0017 (-0.64)	-0.0002 (-0.75)	-0.0001 (-0.06)	-0.0002 (-0.10)
lnPOPg	-0.0156 (-2.21)**	-0.0407 (-7.19)***	-0.0231 (-3.67)***	-0.0300 (-4.67)***	-0.0314 (-4.89)***
lnDF	-0.0342 (-2.39)**	-0.0289 (-2.51)***	-0.0269 (-2.47)**	-0.0240 (-2.05)**	-0.0255 (-2.30)**
GQI (Composite)			0.0509 (5.41)***		
lnR×GQI			0.0273 (1.84)*		
PS			0.0185(2.59)***		
lnR×PS			-0.0091 (-2.36)**		
VA					0.0227(2.80)***
lnR×VA					-0.0072(-1.59)*
GE					
lnR×GE					
RQ					
lnR×RQ					
RL					
lnR×RL					
CC					
lnR×CC					
AR (1)	0.000	0.000	0.000	0.000	0.000
AR (2)	0.339	0.447	0.519	0.553	0.447
Sargan-Hansen	0.189	0.229	0.331	0.133	0.226
Wald chi2(.)	1935.37	22420.06	24127.59	22572.32	23028.08
Instruments	123	140	141	141	141
No. of Observations	165	186	186	186	186
No. of Countries	12	12	12	12	12

Notes: All variables are transformed into natural logarithm except the governance indicators. (), t of student; *, **, ***: significance threshold of 10%, 5% and 1% respectively. GMM-DIFF: Arellano-Bond estimate (1991). GMM-SYS: Arellano-Bover (1995) and Blundell-Bond (1998) estimate. The variables are instrumented by their lags (GDPpc, Remittances/GDP, Quality of governance and the interactive variable). The Sargan-Hansen test is used to test the over-identification and effectiveness of instruments. The AR (2) test is to test the correlations of the error terms.

Table 4: (Continued)

Independent Variables	Dependent variable: GDPpc (in constant 2015 dollars)			
	GMM-SYS (6) (GE)	GMM-SYS (7) (RQ)	GMM-SYS (8) (RL)	GMM-SYS (9) (CC)
Constant	0.3148 (2.76)***	0.3675 (2.59)***	0.2196 (1.67)*	0.1044 (0.86)
lnY_{t-1}	0.9745 (63.90)***	0.9751 (62.59)***	0.9882 (66.58)***	0.9913 (69.75)***
lnR	-0.0110 (-1.78)*	-0.0094 (-1.51)*	-0.0067 (-1.27)	0.0147 (2.60)***
lnGFCF	0.0763 (3.46)***	0.0683 (3.70)***	0.0804 (4.53)***	0.0780 (4.51)***
lnINF	-0.0028 (-1.03)	-0.0012 (-0.45)	-0.0000 (-0.38)	-0.0007 (-0.47)
lnPOPg	-0.0245 (-3.92)***	-0.0289 (-4.82)***	-0.0279 (-4.53)***	-0.0256 (-4.07)***
lnDF	-0.0321 (-2.47)**	-0.0344 (-2.90)***	-0.0319 (-2.71)***	-0.0239 (-2.04)**
GQI (Composite)				
lnR×GQI				
PS				
lnR×PS				
VA				
lnR×VA				
GE	.0651 (5.61)***			
lnR×GE	.0078 (1.47)			
RQ		.0542 (5.31)***		
lnR×RQ		.0024 (0.55)		
RL			.0511 (4.28)***	
lnR×RL			.0078 (1.34)	
CC				.0506 (4.41)***
lnR×CC				.0143 (2.37)***
AR (1)	0.000	0.000	0.000	0.000
AR (2)	0.497	0.447	0.344	0.538
Sargan-Hansen	0.398	0.290	0.236	0.433
Wald chi2(.)	23505.08	23806.20	23716.90	23154.60
Instruments	141	141	141	141
No. of Observations	186	186	186	186
No. of Countries	12	12	12	12

Notes: All variables are transformed into natural logarithm except the governance indicators. (), t of student; *, **, ***: significance threshold of 10%, 5% and 1% respectively. GMM-DIFF: Arellano-Bond estimate (1991). GMM-SYS: Arellano-Bover (1995) and Blundell-Bond (1998) estimate. The variables are instrumented by their lags (GDPpc, Remittances/GDP, Quality of governance and the interactive variable). The Sargan-Hansen test is used to test the over-identification and effectiveness of instruments. The AR (2) test is to test the correlations of the error terms.

Next, the autocorrelation of the residuals from the regressions using the AR (1) and AR (2) is tested. While the AR (1) test result shows the presence of an autocorrelation problem, the second order autocorrelation test AR (2) indicates the acceptance of the hypothesis H1, which describes a situation of absence of second order autocorrelation for all the estimates. These regression results are robust. The over-identification of the model is then analysed by the Hansen test, which shows that all the instruments (the lagged variables) are valid (p-value sufficiently high) and obtain consistent regressions.

As expected, for MENA countries, a positive and highly significant correlation is observed for the initial GDP growth variable, at a confidence level of 1%. The elasticity of the lagged dependent variable varies by approximately 85% to 100%, regardless of the specification considered. The same result is obtained by Chami et al. (2003) for a panel of developing countries, and Ahoure (2008) for Sub-Saharan Africa countries.

As the macroeconomic theory shows, traditional determinants of growth significantly stimulate economic growth in developing countries. The results indicate a positive and significant correlation (significance of 1%) between investments, approximated by GFCF, and GDP per capita; the elasticity of the GFCF ratio is about 8% in all GMM-Sys estimates. Investment in physical capital is thus one of the main factors that contribute to economic growth in MENA countries. On the other hand, the estimates indicate that demographic growth has a negative effect on economic growth; the coefficients are highly significant in most specifications. If population increases by 1%, the growth of GDP per capita decreases to around 3%. At the same time, the inflation variable has a negative and insignificant influence on economic growth in the MENA countries.

Contrary to theoretical and empirical research that advocates a positive impact of financial development, represented by credit to the private sector on economic growth (King & Levine, 1992), it appears that MENA countries display high instability of the financial system that, consequently, reduces its beneficial effect on growth (the lowest value of credits is 3.7 while the highest is 122 (see Table 3). The estimates of the effect of credit supply on the economic performance of MENA countries show unexpected negative signs, but with a significance of 1% in most specifications. This result can be explained by the succession of financial crises, that are considered as an important cause of financial instability, and one of the major drawbacks of

financial development. Indeed, financial instability leads to an increase in economic instability, which harms economic growth. Similar findings to this claim were obtained by Bettin and Zazzaro (2009), and Giuliano and Ruiz-Arranz (2009). Thus, it is necessary to consolidate the financial system to strengthen the confidence of migrants in the banking system of their country of origin and increase the sending of money via banks.

As for remittances and economic growth, they highlight a direct negative relationship with a significance between 5% to 10% in all model specifications, except models (3) and (9) of Table 4. These results are not similar to the literature that shows a positive impact between remittances and growth (Adams & Klobodu, 2016; Rapoport & Docquier, 2005). The influence of remittances on growth is mixed due to the priority difference of spending these funds. The correlation flows of foreign funds with economic growth is not necessarily positive when a country is oriented towards the consumption of imported goods. On the contrary, these remittances stimulate economic growth if they are directed towards productive investments. In this context, the estimates indicate that remittances are not among the determinants of growth in MENA countries. They are more used to financing the needs of poor households and to create a dependency that reduces participation in the labour market, as well as the motivation to engage in investment projects. The results are consistent with those obtained by Habib (2022), Barajas et al. (2009), Chami et al. (2003). The results also raise the question of whether the relationship between remittances and economic growth can be explained by other variables. Hence, the possibility that the quality of governance influences the effectiveness of remittances in supporting economic growth in the MENA region is considered.

Models (4) to (9) of Table 4 show that the direct impact of institutional indicators on GDP per capita has a positive sign with a high significance of 1% in all estimates, and with a high standard deviation between 2.6 and 5.6. These results imply that, in MENA countries, economic performance is positively correlated with the quality of institutions. Thus, the constitution of a higher level of governance helps to avoid political instability, inefficiency of governments, poor regulatory quality, the popular violation of the law, and corruption, leading to a high rate of economic growth and sustainable economic development. This finding is consistent with the findings of Alam et al. (2017) who show that when a country's public authorities can develop and implement effective policies, it positively influences their GDP growth rate.

The interaction of each individual component of the governance quality with the effects of remittances is included in the estimations to assess which of the components of governance best influence migrant remittances on economic growth. The results reveal that the interaction between remittances and indicators of the political dimension that measures the process of selecting governments, namely political stability, citizen voices, and responsibility, have negative and statistically significant growth impacts at a threshold of 5% and 10% respectively (see models (4) and (5) of Table 4). This can be argued that in a situation of political instability, remittances easily enter through informal channels. This coincides with the situation of political turmoil in the MENA region, that is generally characterised by increasing unemployment and, consequently, increasing emigration rates. In this context, emigrants send more money to their families in their origin countries for consumption purposes and as a coping strategy to political crises (Edelbloude et al., 2017). So, political stability is one of the major challenges of growth in MENA countries. Not only that, but corruption is also a major phenomenon, socially costly, and the effects of which are felt at the level of growth. The results show a positive and statistically significant contribution of remittances to economic growth through the control of corruption (model (9) of Table 4).

The conclusion drawn is that the control of corruption appears to be the main governance component that can further influence the relationship between migrant remittances and economic growth in the MENA region. The same observation is mentioned by Sani et al. (2019) who finds in their analysis that the governance indicator relating to the economic dimension, control of corruption, is a perfect measure of institutional development. This finding allows us to confirm the theoretical predictions about the indirect and positive effect of sound institutions of corruption on economic growth, as well as with the link with remittances. This can be explained by the fact that migrants living in a developed country where the corruption control is relatively high compared to a country of origin, can transfer good practices to their country of origin. Thus, the estimations based on models (6) to (8) of Table 4 show that the interaction coefficients of remittances with indicators that assess the legal dimension of governance, such as the effectiveness of governments and the regulatory quality, as well as the indicator that assesses the economic dimension of governance, in particular the rule of law, are not statistically significant. They have no effect on the effectiveness

of remittances to stimulate growth. This finding suggests that government inefficiency, poor regulatory quality, and popular non-compliance of the law are indicators that encourage transferring money through informal channels to MENA countries (Ambrosius & Cuecuecha, 2016).

At this stage, it is necessary to analyze the influence of GQI as a transmission channel between remittances and the growth in MENA countries. Based on the reference model (3) of Table 4, the individual governance indicators are replaced by GQI, and its interaction with remittances. The direct relationship describes that the GQI contributes positively (0.0509) and significantly (threshold of 1%) to economic growth in MENA countries. As for the indirect relationship, it shows that migrants' remittances positively affect GDP per capita growth with a significance level of 10%. Despite the significance, the influence of the interaction term contributes weakly to the growth of GDP per capita of about 3% (0.0273). This suggests that recipient country institutions can moderate the negative effect of remittances on growth. Thus, these remittances received by MENA countries within a framework of good governance are supposed to be substitutes, rather than complements to stimulate economic growth.

5.   Conclusions and Policy Implications

Studies on the impact of remittances on economic growth in developing countries reveal a contradictory relationship. Some researchers confirm that this relationship is negative, while others argue about its positive effect. However, the remittance-economic nexus depends on other variables, such as human capital, financial system development, and good institutional quality.

This study focuses on the relationship between remittances and economic growth through its interaction with WGI, namely, to test the hypothesis that the level of institutional quality in developing countries influences the responsiveness of remittances to economic growth. The estimations are conducted within a panel framework of 12 MENA countries spanning the period 2002 to 2020. The dynamic panel-data method of Arellano and Bover (1995), and Blundell and Bond (1998) are used to control the problem of endogeneity and unobserved heterogeneity.

The empirical results suggest that migration remittances have a negative and significant direct effect on economic growth. This indicates that the remittances directed towards the MENA region are used more to support the

consumption of recipient households and increase the dependency, which reduces labor supply, as argued by Chami et al. (2003) and Ahoure (2008). Since the quality of governance in the recipient country can moderate the negative impact of remittances on economic growth, a composite index of governance that quantifies the institutional environment is constructed for the study. The findings indicate that the quality of governance positively and significantly influences the responsiveness of remittances on the economic performance of MENA countries. The use of the six governance indicators, in terms of interaction with remittances, resulted in different impacts on economic growth. The indicators of the political dimension, namely political stability, voice, and accountability, have a negative and significant impact on remittances. Also, the interaction of corruption control with remittances is significant and positive. It is important to note that in a situation of political instability, remittances easily enter through informal channels, which aggravates the negative impact of remittances on economic growth. Moreover, it seems that the control of corruption is the main governance component that can further influence the relationship between migrant remittances and economic growth in the MENA region. Thus, the presence of low-level corruption favours the initiatives of beneficiary households to invest in productive activities. This implies that the presence of sound and solid institutions is seen as a prerequisite for the successful use and sustainable efficiency of remittances. The interaction between remittances and the other three components of governance, such as government effectiveness, regulatory quality, and rule of law, are not statistically significant. This result clearly shows that a constraining, inadequate, and failing institutional framework favours remittances through informal channels, which thwart the evolution of productive investment and, consequently, economic growth.

Therefore, some economic and political implications can be proposed. As sound institutions and remittances stimulate economic growth, it is essential that policymakers make good governance efforts to ensure a better orientation of remittances towards activities that can promote growth, and to reduce the barriers that hamper the flow of remittances to developing countries. Thus, to encourage migrants to transfer money through formal channels, it is necessary for policy makers to adopt an incentive policy to encourage migrants to remit more funds through formal channels, and to channel their resources effectively towards productive investments.

Encouraging investment activities and strengthening governance are critical to improving economic growth in MENA countries.

Despite the limitations of the data (that quantify only formal remittances), the study is an extension of previous related work. It covers the influence of institutional indicators, regardless of global or individual impacts, on the effectiveness of remittances in promoting economic growth in the case of MENA region.

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