Migrant Remittances and Economic Growth: the role of financial development & institutional quality

Imad EL HAMMA[*][†][‡]

Job Market Paper

Abstract

This paper investigate the conditionel effect of remittances on economic growth in 14 Middle East and North Africa (MENA) countries. Using unbalanced panel data over the period 1984-2015, we study the hypothesis that the effect of remittances on economic growth varies depending on the level of financial development and institutional environment in recipient countries. We use Two-Stage Least Squares (2SLS/IV) instrumental variables method in which we address the endogeneity of remittances. Our results reveal a complementary relationship among financial development and remittances to ensure economic growth. The estimations show that remittances promote growth in countries with a developed financial system and a strong institutional environment.

Keywords: Remittances, economic growth, financial development, institutions quality.
JEL codes: G23, O17, O22

---

[*]Université Côte d'Azur, GREDEG, CNRS ; Université Paris-Est-Marne-la-Vallée, ERUDITE
[‡]imad.elhamma@u-pem.fr ; imad.el-hamma@unice.fr

1 Introdcution

The increase in the volume of international migration over recent decades has led to an unprecedented increase in financial flows to labor-exporting countries. Indeed, international migrant remittances have begun to be a significant source of external financing for developing countries. Only considering remittances passing through formal channels, the World Bank estimates that remittances reached US$ 440 billion in 2013 (World Bank, 2014). In fact, remittances sent to developing countries have increased spectacularly over the last three decades to represent the large majority of remittance flows today. According to the World Bank (2014), formally recorded remittances sent to developing countries reached US$ 325.5 billion in 2010. After a modest decline in 2009 because of the global financial crisis, the flow of remittances to developing countries was expected to grow at a lower but sustainable rate of 7-8 percent annually during 2013-2018 to reach US$ 550 billion by 2016. However, remittances benefit some regions more than others. With US$ 73 billion of remittances, the MENA region is one of the top remittance recipients in the world after East Asia and the Pacific, Latin America and the Caribbean.

However, the recorded data on remittances is imperfect and underestimates the true amount. On the one hand, many developing countries do not report remittance data in their balance of payments (e.g. Afghanistan, Cuba). On the other hand, since fees for sending money (for example, those of banking systems or established money transfer operators) are relatively high, remittances are often sent via informal channels such as friends, relatives and the Hawala system. El-Qorchi, Munzele and Wilson (2003) argue that the informal flows are estimated to be very high, in the range of 10% to 50% of recorded remittances. Remittance fees are known to be high; the World Bank estimates the cost to be about 10% of the amount sent. At the same time, there is a huge variation in the fees depending on the amount transfered, exchange rate and the contry of destination. Migrants might access official services, but the high costs of operations may discourage others migrants with low revenue from sending small amounts. Moreover, financial services may be accessible to migrants, but this will not be the situation for the receivers. High costs are mostly due to socioeconomic factors, the financial market and government policy in the sending and the receiving countries.

In literature surveys, the macroeconomic effects of remittances have been the subject of renewed attention in recent years. While some studies have provided evidence that remittances may increase investments (Woodruff and Zenteno, 2007 ; Giuliano and Ruiz-Arranz, 2009), make human capital accumulation easy (Edwards and Ureta, 2003 ; Rapoport and Docquier, 2005 ; Calero, Bedi and Sparrow, 2009 ; Combes and Ebeke, 2011), enhance total factor productivity (Abdih et al., 2012) and alleviate poverty (Akobeng, 2016 ; Majeed, 2015 ; Adams Jr and Cuecuecha, 2013), other studies have pointed out that remittances may significantly reduce work effort (Chami et al., 2005), create moral hazards (Gubert, 2002), accelerate inflation (Khan and Islam, 2013), and lead to Dutch disease effects i.e. an appreciation in the real exchange rate accompanied by resource allocation from the traded sector towards the non-traded sector (Amuedo-Dorantes, Pozo and Vargas-Silva, 2010 ; Bourdet and Falck, 2006 ; Acosta, Lartey and Mandelman, 2009). However, the majority of these studies have only focused on the direct effects of remittances and they

do not incorporate the indirect or the conditional effects. In this literature, the authors regressed per capita growth on both the workers remittances and a set of control variables. Some of these control variables also include the channels through which remittances affect growth. Such specifications are likely to give unreliable estimates because the channels may also capture the growth effects of remittances. Thus, migrants' remittances may reduce the volatility of income, promote the financial sector and increase the quality of institutions. They can also promote both human and physical capital investment. The aim of this paper is to examine both the direct and the conditional effects of remittances on economic growth in MENA countries. Our contribution to the literature consists at looking specifically at the interaction between remittances and financial development, on the one hand, and between remittances and the level of institutional quality, on the other hand . To do this, a number of interaction variables have been included in the empirical investigations to gauge the best conditions in which remittances can involve economic growth.

Our several regressions show that a solid financial system and stable political environment complement the positive effect of remittances on economic growth. The remainder of this paper is organized as follows. The next section gives a literature survey of the relationships between remittances and economic growth. Section 3 describes the data, model specification and econometric technique. Section 4 discusses our empirical results, and finally, section 4 provides concluding remarks.

2   Literature survey

For the receiving countries, there are serval channels through which remittances may affect economic growth. Remittances can increase the national disposable income, household savings, domestic investment and the accumulation of physical and human capital. They can reduce the volatility of production and consumption. However, an excessive volume of migrant's remittances may affect currency appreciation, which negatively affects the competitiveness of exports or creates a moral hazard problem by inducing disincentives to work.

However, neither theoretical nor empirical studies have provided a conclusive answer regarding the effect of remittances on economic growth. Faini (2002) provides evidence that remittances have a positive effect on economic growth. However, Chami, Fullenkamp and Jahjah (2003) find a negative correlation between remittances and growth. The authors have argued that remittances are likely to substitute work for leisure, generally known as moral hazard. Lucas (2005) and the IMF World Economic Outlook (2005) criticize Chami's study for not taking into account remittances' endogeneity problem. In the Philippines, using Impulse Response Functions and annual data for 1985-2002, Burgess and Haksar (2005) report a negative indication between remittance and growth measured by the growth rate of the Gross Domestic Product (GDP) per capita. However, Ang (2009) concludes that the overall impact of remittances on growth is positive for the same country. Ziesemer (2012) provides a study suggesting that the effect of remittances on economic growth is more visible in low-income countries (income lower than 1200 \$US per capita). Moreover, the author shows that the growth rate is two percentage points higher

in the presence of remittances. For Latin American countries, Mundaca (2009) uses the domestic bank credit as a regressor to examine the effect of remittances on growth. She also finds a positive effect of remittances on economic growth. According to the author, a 10% increase in remittances (as a percentage of the GDP) contributes to increasing the GDP per capita by 3.49%. When she removes domestic bank credit from the equation, the GDP per capita increases only by 3.18%.

Most recently, in Sub-Saharan African (SSA) countries, Singh et al. (2011) report that the impact of international remittances on economic growth is negative. However, countries with good governance have more opportunity to unlock the potential for remittances to improve economic growth. In a related study, using annual panel data for 64 African, Asian, and Latin American-Caribbean countries from 1987-2007, Fayissa and Nsiah (2012) find that there is a positive relationship between remittances and economic growth throughout the whole group. In contrast, Ahamada and Coulibaly (2013) report that there is no causality between remittances and growth in 20 SSA countries. Adams and Klobodu (2016) using the General Method of Moments estimation technique, examine the effect of remittances and regime durability on economic growth find that remittances do not have a robust impact on economic growth in SSA.

Until the last decade, most empirical studies seemed to neglect other channels through which remittances can stimulate economic growth. As we stated above, remittances can increase the volume of disposable income and savings. Thus, they can stimulate the investment rate and hence economic growth. In Pakistan, Adams, Jr (2003) shows that international remittances have a positive effect on the saving rate. For the author, the marginal propensity to save for international remittances is 0.71, while the marginal propensity to save on rental income is only 0.085. Moreover, the author demonstrates that the Pakistani households receiving remittances have a very high propensity to save, and the effect of remittances on growth could be amplified if remittances are channeled by the banking sector. In Kyrgyzstan, Aitymbetov (2006) finds also that remittances positively affect economic growth because about 10% of transfers are invested. Woodruff (2007) confirms the finding since he finds a positive relationship between investment and the creation of micro-enterprises. For the author, 5% of remittances received are invested in this type of company. In long term, they can be seen as a "growth locomotive" because they improve the labor supply. Finally, in five Mediterranean countries, Glytsos (2005) investigates the impact of exogenous shocks of remittances on consumption, investment, imports, and output. He builds a Keynesian model in which he includes the remittances as part of disposable income and finds a positive effect of income on consumption and imports. For the author, the effect of remittances on growth passes through the income disposable and investment channels.

These empirical studies investigate the direct effect of remittances on the determinants of economic growth. However, other researchers have investigated the conditional effect by incorporating an interaction terms between international remittances and other variables that could complement the direct effect in stimulating growth. Fajnzylber et al. (2008) explores for Latin American countries the remittances' effect on real per capita growth. The authors include as a regressor a term of interaction between remittances and

human capital, political institutions and the financial system depth. They find a negative indication of the remittances' coefficient and a positive indication of the interaction term when human capital and institutions are included. However, the remittances coefficient has a positive indication and the interaction term has a negative indication when financial system depth is included. Fajnzylber et al. (2008) conclude that human capital accumulation and improvement in institutional quality enhance the positive effect of remittances on economic growth. But financial depth substitutes for international remittances in stimulating growth. On the basis of these findings, remittances are considered to be ineffective in enhancing economic development in countries where institutions are weak or where there is low human capital accumulation. Giuliano and Ruiz-Arranz (2009) conducted a study similar to Mundaca's. They used financial development in interaction with remittances as regressor and found that remittances may ease credit constraints on the poor, increase the allocation of capital, and substitute for the absence of financial development. In addition, Bettin and Zazzaro (2012) include an interaction variable (remittances multiplied by bank efficiency index) and find a complementary relation between remittances and financial development. As Giuliano and Ruiz-Arranz (2009), Catrinescu et al. (2009) use political and institutional variables as terms of interaction with remittance. The authors, using the Anderson-Hsio estimator, found a positive relation between transfers and growth. However, Barajas, Chami and Fullenkamp (2009) use microeconomics variables as instruments to thwarting potential endogeneity between remittances and growth. They find non-significant direct effects of growth of remittances in an estimate for a panel of 84 developing countries.

The literature review reveals that the impact of remittances on economic growth highly depends on the estimation method, the sample period, the country characteristics (strong financial development, good institutions quality, strong bank efficiency ?), observed and unobserved countries specific effect and the endogeneity of regressors. However, as far as we know, no studies have directly investigated the conditional effect in MENA region. They have focused only on the direct effect. In this paper, we try to fill the gap. Specifically, we investigate at the interaction between remittances, financial development and the level of institutional quality. To do this, a number of interaction variables have been included in the empirical investigations to gauge the best conditions in which remittances can improve economic growth in MENA countries.

3 Model specification and econometric technique

3.1 Estimation method

We investigate empirically the links between remittances, financial development, institutional quality and economic growth by using an extended version of the growth model of Barro (1991 ; 1996). The following reduced-form regression is used:

$$GrowthGDP_{it} = \alpha_0 + \beta_0 GDP_{it-1} + \beta_1 Rem_{it} + \theta X_{it} + \eta_t + \nu_i + \epsilon_{it} \qquad (1)$$

Here, GrowthGDP$_{it}$ indicates the growth of real GDP per capita in country i at time t. GDP$_{it-1}$ is the initial (logarithm) GDP per capita, REM$_{it}$ is the key explanatory variable referring to the ratio of the remittances to GDP. Remittances are the current transfers

sent by resident or nonresident workers to the country of origin. η_t is the time specific effect, ν_i an unobserved country specific effect and ϵ_{it} is the error term. X_{it} is the matrix of control variables (initial GDP per capita, investment, human capital, government spending, openness) described in the appendix.

As a starting point, we do not include any variables for financial development or institutional quality. However, in a second set of regressions, we test the hypothesis that the responsiveness of economic growth to remittances depends on the level of financial development and the level of institutional quality. In other words, we explore how the financial depth or the institutional quality level of the recipient country affects the impact of remittances on economic growth. The novelty of our paper lies in its estimation of the combined effect of remittances and our conditional variables (financial development or the institutional quality). To this end, we introduce in Equation (1) an interaction term between remittances and the financial development level or the institutional quality. The modified versions of Equation (1) that include the interactive terms can be written as:

$$GrowthGDP_{it} = \alpha_i + \beta_0 GrowthGDP_{it-1} + \beta_1 Rem_{it} + \beta_2 (Rem_{it} \times Findvp_{it}) + \beta_3 Findvp_{it} + \theta X_{it} + \eta_t + \nu_i + \epsilon_{it}$$
$$(2)$$
$$GrowthGDP_{it} = \alpha_i + \beta_0 GrowthGDP_{it-1} + \beta_1 Rem_{it} + \beta_2 (Rem_{it} \times InstQ_{it}) + \beta_3 InstQ_{it} + \theta X_{it} + \eta_t + \nu_i + \epsilon_{it}$$
$$(3)$$

In equation (2) and (3), the interaction indicates that the effects of remittances on economic growth is different for different value of financial development or institutions quality. The unique effect of remittances on economic growth is not limited to β_1 but also depends the value of β_2 and financial development / institutions quality. In other words, β_1 and β_2 provide information on the marginal impact[1] of remittances on growth conditional upon the financial development level or the institutional quality. Moreover, in Equation (2), if β_1 is positive and β_2 is negative, remittances are more effective in promoting growth in countries with a shallower finance system. In other words, a negative interaction means that remittances have de facto acted as a substitute for financial services to enhance economic growth. However, when remittances are significantly negative, a positive interaction suggests that remittances and the financial system are complements (a better functioning financial system would lead remittances towards growth-enhancement). In a similar way, in Equation (3), a positive interaction ($\beta_2 > 0$) would indicate that the institutional quality enhances the positive effect of remittances on growth when ($\beta_1 > 0$). Otherwise, when the interaction is negative ($\beta_2 < 0$), the institutional quality diminishes ($\beta_1 > 0$) or aggravates ($\beta_1 < 0$) the negative impact of remittances on growth.

A panel fixed effect (FE-OLS / OLS) estimation is used to estimate the effect of remittances on economic growth. However, we apply a Fixed effet Two-Stage Least Squares (FE 2SLS) developed by Bollen (1996) to deal with the potential endogeneity problem and measurement errors. For example, remittances and finance development are likely to be correlated with the error terms because of the reserve causality from growth to those variables. However, when we run FE 2SLS, we test if the instruments selected are correlated with the endogenous regressors using the weak instrument test developed by

---

[1]β_1 measures the direct effect while β_2 represents to the conditional effect

Cragg and Donald (1993) and test their endogeneity using the Sargan's overidentifying restrictions test. Following Bollen (1996, 2001), Bollen and Paxton (1998) and Pesaran et Taylor (1999), 2SLS method not only deals with the endogeneity problem and the possible causality between remittances and growth. It has other advantages it easily caters for non-linear and interactions effects, it permits the routine use of often ignored diagnostic testing procedures for problems such as heteroscedasticity and specification error, simulation evidence from econometrics suggests that 2SLS may perform better in small samples. For the endogenous variables, we rely on the internal instruments that are one lag variables. To check the validity of the of our estimation, collinearity, causality and endogeneity tests have been applied. In all regression, time-dummies variables were included to deal with any specific time effect. This should be help reduce the degree of heteroscedasticity in the error terms. We believe that would make the FE 2SLS more reliable because they are asymptotically efficient as estimates from Generalized Method of Moments developed by Arellano and Bond (1991) and Blundell and Bond (1998).

Differentiating equations (2) and (3) with respect to remittances, equations (4) and (5) capture the marginal effect of remittances on GDP per capita growth for different levels of financial development and institutional quality, respectively. Moreover, according to Equation (4) and (5), the threshold (minimum) level of financial development and institutional quality at which the effect of remittances on economic growth is equal to zero is $(-\beta_1/\beta_2)$.

$$\nu_{Findvp} = \frac{\partial GDP}{\partial REM} = \beta_1 + \beta_2 \times Findvp_{it} \qquad (4)$$

$$\nu_{InstQ} = \frac{\partial GDP}{\partial REM} = \beta_1 + \beta_2 \times InstQ_{it} \qquad (5)$$

3.2 Variable definitions and data

To capture the role of financial development and institutional level on the effect of remittances on growth, we use respectively three and four proxies. For the financial development proxy, all variables are related to the banking sector. First, to evaluate the financial intermediation, we use first domestic credit to the private sector by banks as a percentage of GDP. The second variable represents liquid liabilities (broad money) as part of GDP. This variable is defined as the sum of currency and deposits in the central bank liquid liabilities divided by GDP. It is used as a proxy of the size of financial intermediaries relative to the size of the economy. Finally, the bank efficiency ratio is also used. This proxy gives us an idea of banking productivity. The ratio is a quick and easy measure of a bank's ability to turn resources into revenue. The ratio is defined as the sum of expenses (without interest expenses) divided by the revenue. The following variables have been chosen to form the financial indicator of World Development Indicators (WDI). Similarly, institutional quality level is proxied by International Country Risk Guide index of political risk. In accordance with Bekaert et al. (2006), we use the Political Institutions Index, wich the sum of the subcomponents 12 components measuring various dimensions of the political and business environment facing firms operating in a country. we use also law and order, government stability and democratic Accountability indexes.

As mentioned above, remittances include personal transfers and compensation of employees. Personal transfers consist of all current transfers in cash or in kind made or received by resident households to or from nonresident households. Personal transfers thus include all current transfers between resident and nonresident individuals. Compensation of employees refers to the income of border, seasonal, and other short-term workers who are employed in an economy where they are not resident, and of residents employed by nonresident entities. The remittances variable is scaled by the home country's GDP. The choice of the variables and the proxies of the detriments of growth is guided by the literature (Barro, 1996; Giuliano and Ruiz-Arranz, 2009 ; Combe and Ebeke, 2011 ; Imai, K. et al., 2014). These variables consist of the initial GDP per capitain log (GDP_{t-1}) to test the convergence hypothesis (Barro, 1996). Investment represent the gross fixed capital formation as a percentage of real GDP is used as a proxy for investment in physical capital. Trade openness is defined by the ratio of the sum of exports and imports over GDP is used to evaluate the country's degree of openness. The inflation rate is a proxy to monetary discipline and macroeconomic stability. Government consumption is defined as the ratio of government consumption to GDP. We shall also include the gross enrollment ratio as porxy of capital humain. For the model specification, we use an unbalanced panel data set consisting of 14 MENA countries observed over the period 1985-2015. We estimate our model on annual observations, as well as 4-years averaged data. The initial year is chosen due to availability. The summary statistics, the variable definitions as well as data sources are provided in the appendix.

4   Evaluation of the results

Tables 1 and 5 (model 9-11) report FE-OLS and 2SLS regression based on Equation 2 and using both annual and 4-year averaged data to avoid any potential simultaneity bias. However, we only interpret results of the 2SLS estimation, because OLS results are likely to be biased: the relationship between remittances-growth and remittances-financed development is certainly endogenous. Fixed effects and period effects are added to the whole regression, which makes sense as far as the level of remittances may change over time. Thus, the analysis will primarily focus on the variables of interest (remittances, financial development, and institution quality), even if we analyse the results obtained from the variables of control. Tables 1, 3 and 5 show that the regressions satisfy mutually the Kleibergan-Paap test for week instruments, and overidentification test of all instruments.

Results reported in table 1 (Model 1) show that the coefficient of the GDP lag is negative and strongly significant, investment and Openness trade are positively correlated with economic growth. Human capital, population growth rate and government spending negatively affect the rate of economic growth (Jongwanich, 2007; Acosta et al., 2009). This finding seems to validate the idea that higher involvement of the government in the economy will have significant consequences on the growth performance (Fer and Henrekson, 2001). Finally, high inflation is associated with lower growth. These results are confirmed by estimation based on 4-year averaged data (Table 5).

Moving to our key variables, we can see that all our measures of financial development are positive and statistically different from zero. However, the estimated coefficients of

remittances are not statistically different from zero (remittances do not have a strong impact on economic growth). These findings are in contrast with previous literature reviews that have found a positive effect of remittances on economic growth (Klobodu al., 2016 ; Imai et al. 2014, Nyamongo et al. 2012). These results suggest that remittances inflows to MENA countries could be sent in the presence of asymmetric information. The latest creates an imbalance of power between migrants and recipients, who may adopt an opportunistic behaviour and show deterioration in their living conditions. Recipients opt to live off from migrant,s transfers rather than by working. In this case, the receivers may consider remittances as an alternative of labour income and increase their leisure activities. This leads to moral hazard problems that are harmful to economic growth. These results lead also to questioning the nature of the relationship between remittances and growth. In other words, the effect of remittances on economic growth may depend on other variables. Therefore, we explore this issue by investigating whether the financial development and the institutional level of the receiving countries influence the effect of remittances on the performance of economic growth.

First, we estimate Equation (2) in which a number of interaction variables have been added. We explore whether there is a substitutability or complementarity relationship between remittances and financial development in promoting economic growth in MENA countries. Models 2 to 4 (table 1) and Models 9 to 11 (table 5) present the outcomes of the regression models for both annual and four-year averaged data. In each model, we use one proxy of financial development. The estimated coefficients of remittances and the interaction term are significantly negative and positive, respectively. As we explain above, the remittances and the financial development have a complementary effect in boosting the growth of GDP. This finding suggests that remittances have a positive effect on economic growth only if the domestic banking system is sufficiently sound. Similar findings were also obtained by Bettin and Zazzaro (2012) and Nyamongo et al. (2012). However, these results are not in line with Barajas, Chami and Fullenkamp (2009), and Giuliano and Ruiz-Arranz (2009) studies that supported the substitution view. Unlike our study, Giuliano and Ruiz-Arranz only used measures of the size of the financial sector, ignoring its efficiency.

Table 1: Growth, remittances and financial development and growth (Annual data)

Independent variables	Model 1 OLS	Model 1 2SLS	Model 2 OLS	Model 2 2SLS	Model 3 OLS	Model 3 2SLS	Model 4 OLS	Model 4 2SLS
				Dependent variables : GDP per capita growth (Annual data)				
GDP per capita (initial)	-0.0997	-1.281***	-0.106	-1.661***	-0.143	-1.582***	-0.113	-1.875***
	(0.108)	(1.467)	(0.0986)	(0.578)	(0.0902)	(1.583)	(0.0933)	(0.523)
Investment	-0.515	3.151***	1.638*	5.591***	1.615*	4.904***	1.569*	5.905***
	(1.083)	(1.184)	(0.881)	(1.571)	(0.875)	(1.637)	(0.878)	(1.590)
Inflation	-0.00250	-0.00733*	-0.0113	-0.0312**	-0.0120	-0.0300***	-0.0109	-0.0295***
	(0.0118)	(0.00722)	(0.00938)	(0.0181)	(0.00935)	(0.0168)	(0.00936)	(0.0171)
Openness	0.137	-0.751*	0.504	0.916**	0.317	0.935	0.363	1.414*
	(0.755)	(1.666)	(0.594)	(1.453)	(0.588)	(1.449)	(0.582)	(1.526)
Population Growth	-1.996***	-2.932***	-1.378**	-3.232***	-1.987***	-2.566***	-1.443**	-3.406***
	(0.655)	(0.766)	(0.570)	(0.643)	(0.600)	(0.650)	(0.578)	(0.656)
Government spending	-1.135	-3.915**	-1.757*	-3.623**	-2.081**	-2.523	-1.777**	-3.479**
	(1.151)	(1.924)	(0.928)	(1.741)	(0.905)	(1.751)	(0.905)	(1.765)
Human capital	-0.338	-7.638***	0.162	-5.805***	1.231	-5.590***	0.105	-5.444***
	(1.616)	(2.835)	(1.349)	(2.023)	(1.343)	(1.879)	(1.317)	(2.109)
Remittances	0.479	1.005	-0.226	-0.310**	-0.541**	-0.4580**	-0.330	-0,1421*
	(0.274)	(0.486)	(0.172)	(0.017)	(0.227)	(0.099)	(0.222)	(0.084)
Fin. Development 1			0.0113*	-0.0560*				
			(0.0142)	(0.0330)				
Remit × Fin. Develop. 1			0.0033	0.07309**				
			(0.069)	(0.0085)				
Fin. Development 1					-0.373*	0.4945*		
					(0.199)	(0.0289)		
Remi × Fin. Develop.2					0.0564	0.1438*		
					(0.0234)	(0.0122)		
Fin. Development 3							-0.0487	0.0140**
							(0.0357)	(0.0068)
Remit× Fin. Develop 3							0.373*	0,0757**
							(0.199)	(1.0164)
Constant	-0.163**		0.0331*		0.0289		0.0393*	
	(0.0733)		(0.0847)		(0.0851)		(0.0847)	
Observations	359	355	311	309	331	324	311	303
R-squared	0.331	0.292	0.292	0.295	0.234	0.276	0.234	0.290
Kleibergen Paap test stat.		2.269		2.873		1.270		1.321
P-value Overidentit.		0.311		0.728		0.292		0.172
Number of id	14	14	14	14	14	14	14	14

Standard errors in parentheses. p<0.05, * p<0.01,** p<0.001.
Fin. Development 1: Domestic credit to private sector by banks (% of GDP).
Fin. Development 2: Liquide Liabilities (Broad money) %GDP sector to GDP).)
Fin. Development 3: Claims on private sector (annual growth as % of broad money.)

## Table 2: Financial developpment's threshold (Annual data)

	Mean			Model 2		Model 3		Model 4	
				β_1 -0.31	β_2 0.07309	β_1 -0.458	β_2 0.1438	β_1 -0.1421	β_2 0.0757
	FinDvp1	FinDvp2	FinDvp3	Threshold		Threshold		Threshold	
Algeria	3.601424	2.735302	1.382847						
Egypt	4.477593	3.554391	1.709718	4.2413		3.1850		1.8771	
Iran	3.887697	3.364963	2.721709	Countries satisfying the threshold (by model)					
Iraq	1.019601	1.317312	1.173017						
Israel	4.487161	4.152959	2.537411	Egypt		Egypt		Iran	
Jordan	4.545133	4.240894	1.564242			Iran		Israel	
Lebanon	4.913593	4.240236	1.956086	Israel		Israel		Lebanon	
Malta	4.958192	4.691771	2.4798	Jordan		Jordan		Malta	
Morocco	4.253182	3.630694	1.6798	Lebanon		Lebanon		Tunisia	
Syria	3.837318	2.241324	0.8459081	Malta		Malta		Turkey	
Tunisia	4.24037	4.026381	2.286178	Morocco		Morocco			
West Bank G.	3.209784	3.127658	1.240927			Tunisia			
Yemen	2.813941	1.700788	1.23657	Turkey		Turkey			
Turkey	4.66627	3.443014	3.372612						

Solving the equation 4, the threshold from which remittances could have a positive effect on economic growth is $(-\beta_1/\beta_2)$. Based on 2SLS estimations of model 1, and taking into account the ratio of domestic credit provided by Banks to GDP, as the measure of financial development, the threshold from which remittances could have a positive effect on economic growth is -(-0,31/0.07309= 4.2413). The sample mean is log (68,435) = 4,2196 indicates that the main

part of the sample could contract benefits from remittance flows. Table 2 provides the list of countries satisfying the threshold for the estimated models (model 2 to 4). We can see that 8 out of 14 countries satisfy the requested threshold of model 2 and 3. However, only 6 countries satisfy the requested threshold for model 4. Thus, countries that do not satisfy the threshold have a negative impact on remittances. For example, in the case of Egypt when we use the domestic credit provided by the financial sector to GDP as the measure of financial development, the total effect is $\frac{\partial GDP}{\partial REM} = -0,4352 + 0,1873 \times 4,4775 = 0,0172$. This indicates that 1% increase in the share of remittances in GDP leads to a 0,0172% increase in GDP per capita growth ratio. However, in Algeria, a 1% increase in remittances leads to a 0.046% decrease of GDP. Figure 1 presents the impact of remittances on GDP per capita growth calculated for each country at the mean level of the three financial development indicators. This figure shows that whatever the financial development indicator we account for, only 6 countries of the sample seem to benefit from remittances.

As for the last estimations, all control variables have the expected sign and are on the whole significant, whatever the nature of the specification. From Table 3, we can note that the direct effect of the institutional variables is positive (with one exception, the case of the democratic accountability). This suggests that countries with good institutions register a high growth rate comparing to countries with poor institutions. This finding is in line with Farooq and al. (2013) for Pakistan, d,Agostino and al. (2016) for African countries, Huang (2015) for AsiaPacific countries and Alam (2017) for a panel of 86 countries.

Figure 1: Marginal Effect of Remittances on Economic Growth based on each country's Fin. Devp. index value
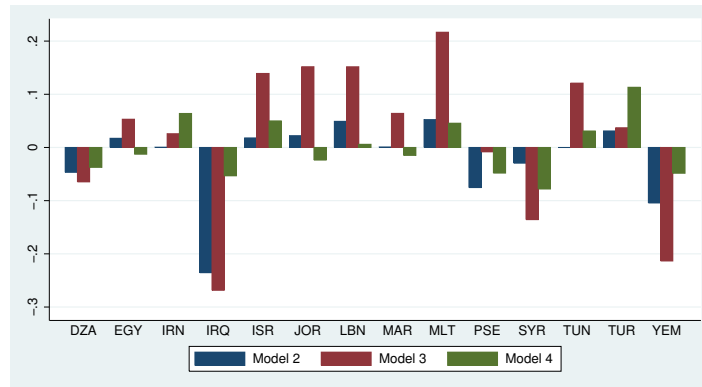
Results of Equation 3 are presented in Table 3 (annual data) and in Table 5 (4-year: Model 12 to 15). In this estimation, we test the interaction between remittances and the institutional environment. In other words, the specification allows us to test the hypothesis that the effect of remittances on growth is conditioned by the institutional quality. We present five specifications. In the first one, we use the composite Political Risk Index. This index, published by the PRS group, is the sum of 12 components measuring various dimensions of the political and business environment facing firms operating in a country. The Political Risk index is based on 100 points, 0 for very high risk to 100 for very low risk. However, in order to determine the main component of the Political Risk Index through which the effect of remittances on economic growth could be transmitted, we replace this index by three components: Government Stability, Law and Order, and Democratic Accountability.

Table 3: Growth, remittances and institutional quality (Annual data)

Independent variables	Model 5 OLS	Model 5 2SLS	Model 6 OLS	Model 6 2SLS	Model 7 OLS	Model 7 2SLS	Model 8 OLS	Model 8 2SLS
Dependent variables : GDP per capita growth (Annual data):								
GDP per capita (initial)	-0.161*	-1.983***	-0.105	-1.478***	-0.120	-1.304***	-0.132	-1.320***
	(0.0909)	(0.804)	(0.0879)	(0.669)	(0.0926)	(0.488)	(0.0886)	(0.490)
Investment Investment	1.639*	4.642***	1.648*	5.057***	1.363	4.738***	1.601*	5.780***
	(0.896)	(1.618)	(0.897)	(1.531)	(0.883)	(1.593)	(0.883)	(1.598)
Inflation	-0.0116	-0.0270*	-0.0113	-0.0290*	-0.00760	-0.0272*	-0.0133	-0.0288*
	(0.00942)	(0.0154)	(0.00945)	(0.0164)	(0.00957)	(0.0153)	(0.00973)	(0.0160)
Openness	0.276	0.854**	0.508	0.880	0.162	0.830*	0.246	1.037**
	(0.614)	(1.418)	(0.578)	(1.434)	(0.584)	(1.449)	(0.590)	(1.520)
Population Growth	-2.092***	-2.836***	-1.410**	-3.033***	-1.785***	-2.582***	-1.513***	-3.219***
	(0.621)	(0.611)	(0.574)	(0.602)	(0.603)	(0.656)	(0.561)	(0.575)
Government spending	-2.133**	-2.611	-1.746*	-3.365**	-1.707*	-2.943*	-2.028**	-3.353**
	(0.911)	(1.723)	(0.906)	(1.695)	(0.936)	(1.696)	(0.931)	(1.699)
Human capital	0.841	-5.893***	0.125	-5.661***	1.137	-5.313***	0.436	-5.606***
	(1.279)	(1.991)	(1.419)	(1.936)	(1.351)	(1.824)	(1.355)	(2.031)
Remittances	-0.588**	-0.6821**	-0.220	-0322*	-0.410**	-0.428**	-0.296	0.570
	(0.239)	(0.075)	(0.071)	(0.024)	(0.014)	(0.045)	(0.216)	(0.340)
Political Risk Index	-0.0175	0.0520**						
	(0.0246)	(0.0351)						
Remi × Political R. I.	0.218**	0,0124**						
	(0.090)	(0.0137)						
Low and Order			-0.0327	0.0725*				
			(0.192)	(0.280)				
Remi× Low & order			0.0974	0.0981**				
			(0.0999)	(0.144)				
Government Stability					0.180	0.245*		
					(0.117)	(0.130)		
Remi × Gover. Stab.					0.098*	0.0569*		
					(0.0548)	(0.0113)		
Democratic Accountability							0.163	-0.0399
							(0.170)	(0.244)
Remi × Dem. Accou.							0.00991	-0.105
							(0.0890)	(0.105)
Constant	1.907*		1.133		-2.149		1.423	
	(7.653)		(7.998)		(7.681)		(7.896)	
Observations	316	310	313	310	313	310	313	310
R-squared		0.246		0.659		0.252		0.242
Kleibergen Paap test stat.		1.365		1.863		1.654		1.761
P-value Overidentit.		0.311		0.728		0.292		0.342
Number of id	13	13	13	13	13	13	13	13

* p<0.05, ** p<0.01, *** p<0.001
Standard errors in parentheses

Table 4: Institutional quality's threshold (Annual data)

	Mean			Model 5		Model 6		Model 7	
				β_1 -0.6821	β_2 0.01245	β_1 -0.322	β_2 0.0981	β_2 -0.428	β_1 0.0569
	Political R. I.	L & O	Gov. Sat	**Threshold**		**Threshold**		**Threshold**	
Algeria	54.2	2.5	8.2	**54.7871**		**3.2824**		**7.5220**	
Egypt	57.0	3.3	8.1						
Iran	53.8	3.6	7.1	Countries satisfying the threshold by model					
Iraq	34.7	1.6	6.5						
Israel	59.0	4.2	6.7			Syria		Algeria	
Jordan	63.0	3.6	8.5	Egypt		Egypt		Egypt	
Lebanon	47.6	3.2	6.6	Israel		Jordan		Jordan	
Malta	78.3	4.6	8.2	Jordan		Israel		Malta	
Morocco	63.5	4.4	8.8	Malta		Malta		Morocco	
Syria	46.1	5.4	8.5	Morocco		Morocco		Turkey	
Tunisia	65.7	4.1	8.8	Turkey		Turkey		Tunisa	
Yemen	51.9	2.4	8.6	Tunisa		Tunisa			
Turkey	59.2	3.7	7.7			Iran			

Figure 2: Marginal Marginal Effect of Remittances on Growth based on each country's Institutions quality index value
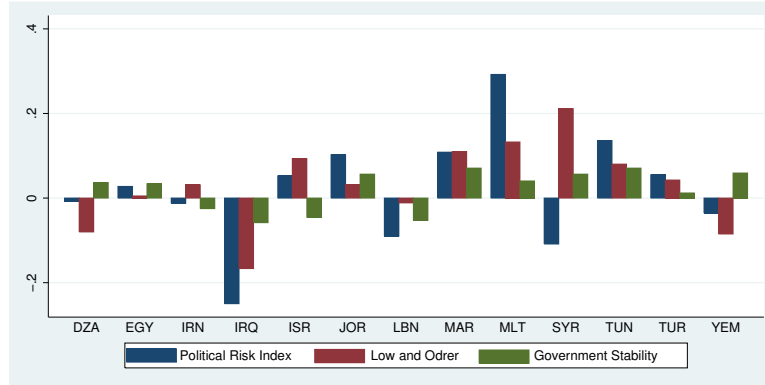
Considering our variables of interest, we note that all the interaction terms are positive and significant (exception for democratic accountability). The coefficients of remittances are negative, it means that higher level of institutional quality could eliminate the negative effect of remittances on economic growth. Remittances and institutional quality are complement in enhancing growth. Thus, presence of the strength and impartiality of the legal system, popular observance of the law, the government,s ability to carry out its declared programs, and its ability to stay in office send a positive sign to recipient households, which may correct the asymmetry of information and promote growth. This implies that in MENA countries the economic performance is positively correlated with the quality of institutions. Given these results, Table 4 compares this calculated threshold with the level of the institutional quality in each country of our sample. As we can see, out of 14 countries considered in the analysis, only Iraq and Lebanon do not have an institutional system sufficiently developed to benefit from remittances. Figure 2 shows the impact of remittances on GDP per capita growth calculated for each country at the mean level Institutional quality indicators.

Finally, remittances may have a negative effect on economic growth. However, the institutions of the country of origin can moderate this effect. First, a legal and regulatory system involving protection of property rights, contract enforcement, and good accounting practices has been identified as essen- tial for financial development (Huang 2010). A solid financial system increases migrants confidence in the banking system, and money will be sent through banks (more available money in the local financial sector), it can be used to refund micro–projects; or invested on projects to achieve higher growth and allow job creations. remittances might become a substitute for inefficient or non-existent credit markets by helping local entrepreneurs to have an alternative source of credit, and bypass the lack of collateral or high lending costs and start productive activities (Guiliano, 2010). Second, when a country with a good institution (enforcement of contracts, property rights, the absence of corruption, no external and internal conflict) migrants or their family in the country of origin would be more comfortable regarding the situation of the home country; would have an incentive to send money home and invest, innovate and take part in the home economic activity. They will have the motivation to invest its remittance income in physical or in human capital because it has adequate control over the return to the assets that are thereby produced or improved.

13

Table 5: Growth, remittances, financial development institutional quality (4-year avarage data)

Dependent variable : GDP per capita growth (4 years avarage)

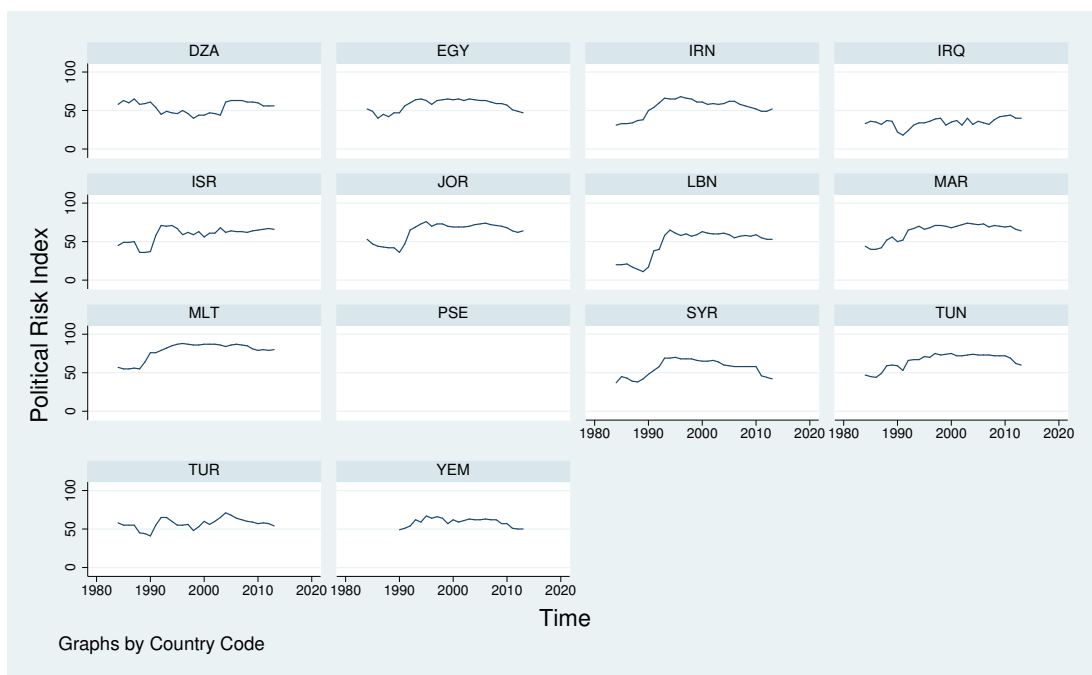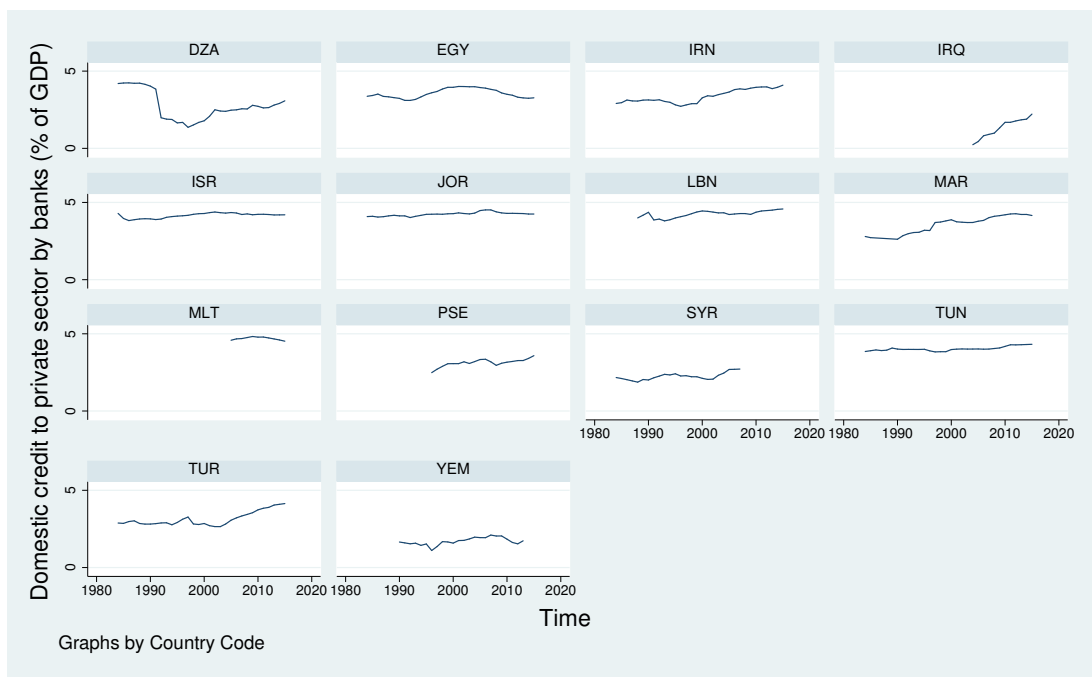| Independent variables	Financial development			Institutions quality				Fin. Dvp & InstQ	
	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17
	Fin dvp 1	Fin Dvp 2	findvp3	Pol risq	Low and odre	Gov. Instability	Dem. Acc.	Findev1/pol.risk	Findvp2/Gov. Sta.
GDP per capita initial	-0.057***	-0.052***	-0.087***	-0.024***	-0.016***	-0.018***	-0.231***	-0.0580***	-0.015***
	(0.02)	(0.03)	(0.01)	(0.02)	(0.03)	(0.00)	(0.04)	(0.08)	(0.06)
Investment	1.060***	1.063**	1.026**	1.724**	1.313***	1.420***	3.994*	1.179**	1.280**
	(0.13)	(0.11)	(0.10)	(0.08)	(0.00)	(0.08)	(0.04)	(0.25)	(0.41)
Human capital	1.195	1.234	1.038	8.978	3.499	5.163	3.214	6.385	-3.291
	(0.79)	(0.97)	(0.18)	(0.23)	(0.85)	(0.32)	(0.04)	(0.35)	(0.98)
Government spending	0.0483*	0.0471**	0.0560**	1.161**	0.421***	0.761*	1.354***	0.846**	0.398**
	(0.15)	(0.02)	(0.01)	(0.22)	(0.06)	(0.03)	(0.04)	(0.33)	(0.99)
Inflation	-0.0002***	-0.00034***	-0.000475***	-0.0241***	-0.00719***	-0.0147***	-0.0140***	-0.0153**	-0.00641**
	(0.06)	(0.13)	(0.08)	(0.19)	(0.58)	(0.28)	(0.04)	(0.26)	(0.65)
Population Growth	-0.321***	0.301***	0.259**	1.823**	5.012**	3.0444*	6.138	3.459*	4.330*
	(0.10)	(0.09)	(0.05)	(0.20)	(0.61)	(0.29)	(0.04)	(0.26)	(0.64)
Openness	-0.0311	-0.0252	-0.0714	-0.333	-0.0601	0.148	-1.110	-0.114	0.0266
	(0.08)	(0.06)	(-0.09)	(0.10)	(0.01)	(0.17)	(0.04)	(0.07)	(0.06)
Remittances	-0.0135**	-0.254**	-0.975***	0.897**	0.646*	2.207***	21.46**	-0.0259*	-0.749
	(0.03)	(0.05)	(0.05)	(-0.08)	(0.39)	(-0.26)	(-0.04)	(-0.00)	(0.48)
Fin. Development 1	0.154 (0.14)**							0.072 (0.03)**	
Remi. Fin. development 1	0.0626 (0.20)*							0.094(0.65)*	
Fin. Development 2		0.0345 (0.01)**							0.0305 (0.10)*
Remi. Fin. development 2		0.0181 (0.00)***							0.0364 (0.44)**
Fin. Development 3			0.894(0.15)***						
Remi. Fin. development 3			0.0885 (0.05)**						
Political Risk Index				-0.144(0.22)				0.0984 (0.34)*	
Remi. Political Risk Index				0.0270 (0.04)				0.176 (0.16)	
Government Stability						-0.295 (0.15)**			-0.382 (0.9)*
Remi. Government Stability						0.0540 (0.27)***			0.0397 (0.03)
Law and Order					-0.436 (0.84)***				
Remi. Low and Ordre					0.0687 (0.05)***				
Democratic Accountability							7.488 (0.04)		
Remi. Democratic Accountability							0.062 (0.04)		
Observations	61	61	58	58	58	58	58	58	58
R-squared	0.232	0.231	0.254	0.392	0.119	0.230	0.131	0.219	0.323
Kleibergen Paap test stat.	0.238	0.129	0.322	0.240	0.392	0.422	0.432	0.745	0.429
P-value Overidentit.	0.458	0.456	0.468	0.789	0.759	0.843	0.755	0.525	0.568
Number of id	14	14	14	13	13	13	13	13	13

14

5 Conclusion

This paper examines the interaction between remittances, financial development, level of the institutional environment and economic growth in 14 MENA countries. The study covers the period of 1984-2015. After controlling the endogeneity bias of remittances by Two-Stage Least Squares (2SLS/IV), our results suggest that the impact of remittances on economic growth depends on the level of financial development and the institutional environment. More precisely, a high level of financial development and a strong institutional environment are required to enable remittances to enhance growth.
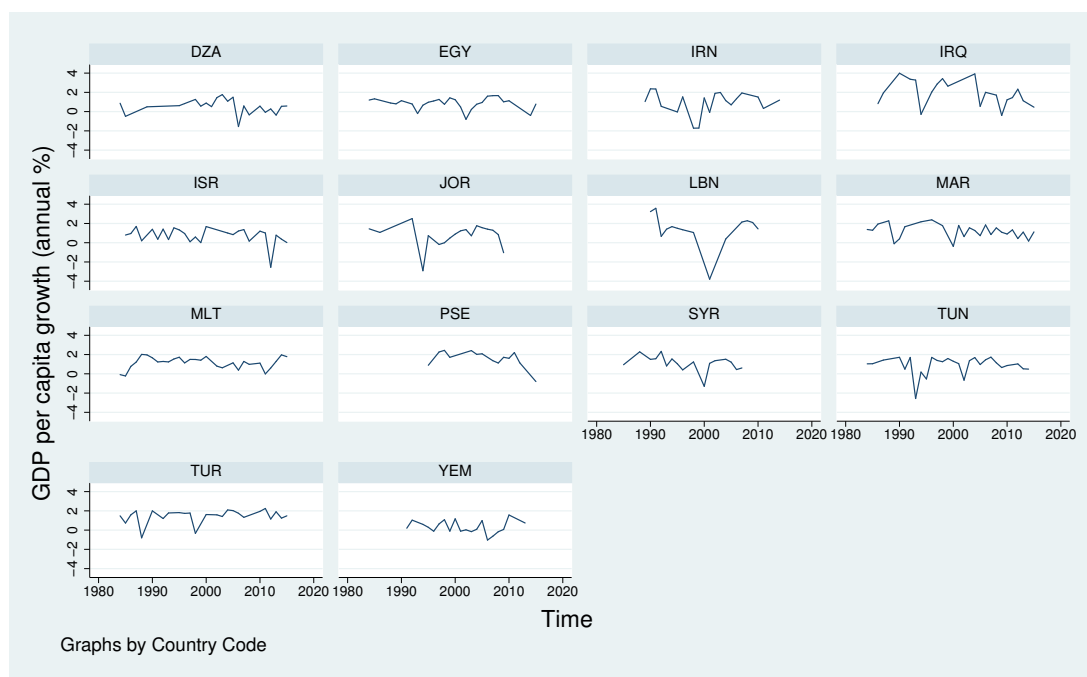
Table 6: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
GDP per capita growth (annual %)	1.889	7.753	-64.996	53.944	417
GDP growth (annual %)	4.206	7.892	-64.047	57.818	417
Personal remittances, received (% of GDP)	6.078	6.766	0.003	26.683	375
GDP per capita (constant LCU)	5885703.689	17384328.793	890.736	84729064	420
Gross fixed capital formation (% of GDP)	23.507	6.013	1.779	42.16	396
Population growth (annual %)	2.222	1.28	-3.107	7.061	441
Human capital (Gross enrollment ratio)	71.759	19.068	39.436	119.139	442
Inflation, GDP deflator (annual %)	15.938	37.844	-26.866	396.438	417
Trade (% of GDP)	79.409	51.903	0.021	326.07	413
Government final consumption expenditure (% of GDP)	17.142	5.53	2.332	35.85	413
Domestic credit to private sector by banks (% of GDP)	40.793	27.685	1.266	124.43	370
Domestic credit provided by financial sector (% of GDP)	68.435	42.255	-16.378	207.36	363
Claims on private sector (A. growth as % of broad money)	11.504	21.795	-75.918	307.779	358
Broad money (% of GDP)	74.916	44.276	20.247	249.591	359
Political Risk Index	57.697	15.026	18	88	238
Low and Order	24.915	28.298	1	75	383
Government Stability	6.242	2.635	1	11	383
Democratic Accountability	5.48	2.945	0	12	383

Figure 3: Personal remittances, received (% of GDP)

Graphs by Country

Graphs by Country Code

Graphs by Country Code

16

Graphs by Country Code

Bibliography

Abdih, Y., Chami, R., Dagher, J., Montiel, P., 2012. Remittances and institutions: Are remittances a curse? World Dev. 40, 657-666. doi:10.1016/j.worlddev.2011.09.014

Acosta, P.A., Baerg, N.R., Mandelman, F.S., 2009a. Financial Development, Remittances, and Real Exchange Rate Appreciation. Fed. Reserv. Bank Atlanta Econ. Rev. 94, 14. doi:10.1016/j.jinteco.2009.06.007

Acosta, P.A., Lartey, E.K.K., Mandelman, F.S., 2009b. Remittances and the Dutch disease. J. Int. Econ. 79, 102-116. doi:10.1016/j.jinteco.2009.06.007

Adams, Jr, R., 2003. International migration, remittances, and the brain drain: A study of 24 labor-exporting countries (No. 3069), Policy Research Working Paper.

Adams Jr, R.H., Cuecuecha, A., 2013. The Impact of remittances on investment and poverty in Ghana. World Dev. 50, 24-40. doi:10.1016/j.worlddev.2013.04.009

Ahamada, I., Coulibaly, D., 2013. Remittances and growth in sub-saharan african countries: Evidence from a panel causality test. J. Int. Dev. 25, 310-324. doi:10.1002/jid.2830

Aitymbetov, S., 2006. Emigrant remittances: impact on economic development of Kyrgyzstan (No. 31), ICEG European Center Working Paper.

Akobeng, E., 2016. Out of inequality and poverty: Evidence for the effectiveness of remittances in Sub-Saharan Africa. Q. Rev. Econ. Financ. 60, 207-223. doi:10.1016/j.qref.2015.10.008

Alam, M. R. (2016) "Government Effectiveness and Economic Growth" Economics Bulletin, *37*, 222-227.

Amuedo-Dorantes, C., Pozo, S., Vargas-Silva, C., 2010. Remittances in Small Island Developing States. J. Dev. Stud. 46, 941-960. doi:10.1080/00220381003623863.

Ang, A., 2009. Workers' remittances and its impact on rural development in the Philippines. Asia-Pacific Soc. Sci. Rev. 9, 63-77.

Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. Rev. Econ. Stud. 58, 277-297. doi:10.2307/2297968

Barajas, A., Chami, R., Fullenkamp, C., 2009. Do workers' remittances promote economic growth? (No. 09/153), IMF Working Paper. Washington, DC.

Barro, R.J., 1996. Determinants of Economic Growth: A Cross-Country Empirical Study. NBER Work. Pap. Ser. w5698.

Barro, R.J., 1991. Economic Growth in a Cross Section of Countries. Q. J. Econ. 106, 407-443.

Barro, R.J., Sala-I-Martin, X., 1995. Economic Growth, European psychiatry the journal of the Association of European Psychiatrists. doi:10.1016/j.eurpsy.2009.07.013

Bekaert, G., Harvey, C.R., Lundblad, C., 2006. Growth volatility and financial liberalization. J. Int. Money Financ. 25, 370-403. doi:10.1016/j.jimonfin.2006.01.003

Bettin, G., Zazzaro, A., 2012a. Remittances and financial development: substitutes or complements in economic growth. Bull. Econ. Res. 64, 509-536.

Blundell, R., Bond, S., 1998. Initial conditions and moment restrictions in dynamic panel data models. J. Econom. 87, 115-143.

Bollen, K.A, 1996. An Alternative Two Stage Least Squares (2SLS) Estimator for Latent Variable Equations. Psychometrika, 61, 109-121.

Bollen, K.A, 2001. Two-Stage Least Squares and Latent Variable Models: Simultaneous Estimation and Robustness to Misspecifications. Ch 7, pp 199-138 in R. Cudeck, S. du Toit and D. Sorbom (eds) Structural Equation Modeling: Present and Future: A Festschrift in honor of Karl Joreskog, Scientific Software International: Lincolnwood.

Bollen, K.A. and Paxton, P, 1998 Interactions of Latent Variables in Structural Equation Models/ Structural Equation Modeling, 5, 267-293.

Bourdet, Y., Falck, H., 2006. Emigrants' remittances and Dutch Disease in Cape Verde. Int. Econ. J. 20, 267-284.

Burgess, R., Haksar, V., 2005. Migration and Foreign Remittances in the Philippines (No. WP/05/111), IMF Working Paper.

Calero, C., Bedi, A.S., Sparrow, R., 2009. Remittances, Liquidity Constraints and Human Capital Investments in Ecuador. World Dev. 37, 1143-1154.

Catrinescu, N., Leon-Ledesma, M., Piracha, M., Quillin, B., 2009a. Remittances, Institutions, and Economic Growth. World Dev. 37, 8192.doi:10.1016/ j.worlddev.2008.02.004

Catrinescu, N., Leon-Ledesma, M., Piracha, M., Quillin, B., 2009b. Remittances, institutions, and economic growth. World Dev., Discussion Paper 37, 81-92. doi: 10.1016/j. worlddev. 2008.02.004

Chami, R., Fullenkamp, C., Jahjah, S., 2003. Are immigrant remittances flows a source of capital for development (No. 03/189), International Monetary Fund Staff Papers.

Chami, R., Jahjah, S., Fullenkamp, C., 2005. Are immigrant remittance flows a source of capital for development (No. WP/03/189). Washington, DC.

Combes, J.-L., Ebeke, C., 2011. Remittances and Household Consumption Instability in Developing Countries. World Dev. 39, 10761089. doi:10.1016/j.worlddev.2010.10.006

d'Agostino, G., Dunne, J. P., & Pieroni, L. (2016) "Corruption and growth in Africa" European Journal of Political Economy, **43**, 71-88.

Easterly, W., Levine, R., 1995. Africa's Growth Tragedy: A Retrospective, 1960-89. Policy Res. Work. Pap.

Edwards, A.C., Ureta, M., 2003. International migration, remittances, and schooling: Evidence from El Salvador. J. Dev. Econ. 72, 429-461. doi:10.1016/S0304-3878(03)00115-9

El-Qorchi, M., Munzele, M.S., Wilson, J.F., 2003. An Analysis of the Informal Hawala System (No. IMF Occasional Paper 222). Washington, DC.

Fajnzylber, P., Lopez, J.H., Boschi, R., Gaitán, F., Fainzylber, P., Acosta, P.A., 2008. Remittances and Development: Lessons from Latin America, Brazilian Political Science Review. doi:10.1596/978-0-8213-6870-1

Fayissa, B., Nsiah, C., 2012. Financial development and remittances in Africa and the Americas: a panel unit-root tests and panel cointegration analysis.

Fölster, S., Henrekson, M., 2001. Growth effects of government expenditure and taxation in rich countries. Eur. Econ. Rev. 45, 1501-1520. doi:10.1016/S0014-2921(00)00083-0

Giuliano, P., Ruiz-Arranz, M., 2009. Remittances, financial development, and growth. J. Dev. Econ. 90, 144-152. doi:http://dx.doi.org/10.1016/j.jdeveco.2008.10.005

Glytsos, N.P., 2005. The contribution of remittances to growth: A dynamic approach and empirical analysis. J. Econ. Stud. 32, 468496. doi:10.1108/01443580510631379

Gubert, F., 2002. Do migmrants insure those who stay behind? evidence from the Kayes Area (Western Mali). Oxford Dev. Stud. 30, 267287. doi:10.1080/13600810 22000012699

Guillaumont S, J., Kpodar, K.R., 2006. Développement financier, instabilité financière et croissance économique. Econ. prévision 174, 87111.

Huang, C. J. (2015) "Is corruption bad for economic growth? Evidence from Asia–Pacific countries" North American Journal of Economics and Finance, 247-256.

Imai, K.S., Gaiha, R., Ali, A., Kaicker, N., 2014. Remittances, growth and poverty: NEW evidence from Asian countries. J. Policy Model. 36, 524538. doi:10.1016/j.jpolmod.2014.01.009

Jongwanich, J., 2007. Workers' Remittances, Economic Growth and Poverty in Developing Asia and the Pacific Countries (No. WP/07/01), UNESCAP Working Paper. United Nations Publications, New York.

Khan, Z.S., Islam, S., 2013. The Effects of Remittances on Inflation: Evidence from Bangladesh. J. Econ. Bus. Res. 19, 198-208.

Klobodu, E.K.M., Adams, S., 2016. Remittances, regime durability and economic growth in Sub-Saharan Africa (SSA). Econ. Anal. Policy 50, 1-8. doi:10.1016 /j. eap.2016.01.002

Majeed, M.T., 2015. Poverty effects of remittances: A comparative analysis. J. Int. Dev. 27, 1-14. doi:10.1002/jid.3055

Mundaca, B.G., 2009. Remittances, financial market development, and economic growth: The case of Latin America and the Caribbean. Rev. Dev. Econ. 13, 288-303. doi:10.1111/j.1467-9361.2008.00487.x

Nyamongo, E.M., Misati, R.N., Kipyegon, L., Ndirangu, L., 2012. Remittances, financial development and economic growth in Africa. J. Econ. Bus. 64, 240-260.

Rapoport, H., Docquier, F., 2005. The Economics of Migrants' Remittances, in: Ythier, M., Kolm, S.. (Eds.), Handbook on the Economics of Giving, Reciprocity and Altruism. pp. 1135-1198.

Pesaran, M.H. and Taylor, L.W, 1999 Diagnostics for IV Regressions. Oxford Bulletin of Economics and Statistics, 61, 255-281.

Woodruff, C., 2007. Mexican Microenterprise Investment and Employment: The Role of Remittances. Integr. Trade 11, 185-209.

Woodruff, C., Zenteno, R., 2007. Migration networks and microenterprises in Mexico. J. Dev. Econ. 82, 509-528. doi:10.1016/j.jdeveco.2006.03.006

World Bank, 2014. Migration and development Brief 23, Migration and Remittances Team, Development Prospects Group.

Ziesemer, T.H.W., 2012. Worker remittances and government behaviour in the receiving countries. East. J. Eur. Stud. 3, 37-59.