

The Effects of Governance on Remittances: Evidence from Cross-Country Panel Data

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Abstract

Purpose – This paper empirically investigates the relationship between country governance quality and worker remittances from foreign countries. Because remittances can be a source of funds for economic development and smoothing economic crises in developing countries, the related topic has been a concern for policy-makers and academic researchers. This paper divides the motives of remittances into altruistic and investment motives through existing papers, and then considers the governance quality the remittance receiving country as one of the determinants of remittances.

Design/methodology – Our empirical model considers whether governance quality can affect the volume of remittances, and uses altruistic and investment factors studied in the literature. To do this, a two-step approach is taken. First, the panel data are examined via pooled OLS, random effects, and Tobit estimation. Second, the paper reduces six governance indicators into one variable, Governance, using the principal component technique (PCA) for a robustness check.

Findings – The main findings can be summarized as follows. The negative governance variable in the estimation results shows a lower governance quality that induces workers to send savings to their home countries. This means that a country with poor governance quality seems to have more remittance inflows from abroad. It also reveals that poor governance quality is more relevant to an altruistic motive rather than an investment motive, in general. The positive per capita GDP variable shows the investment motive for developed countries.

Originality/value – Existing papers have focused on various factors related to the motives of remittances. However, governance quality effects on remittance inflows have not been fully studied so far. This paper considers governance quality in an estimation equation explicitly as one of the determinants of remittances. This area of study is needed, in theory and empirically, in order to fully understand the relationship between governance and remittances.

Keywords: Governance, Panel data, Remittances

JEL Classifications: D23, F24

1. Introduction

For many developing countries, remittances constitute the single largest source of foreign exchange and surpass export revenues, foreign direct investment (FDI), or other private capital inflows. Remittances are a relatively stable source of external finance, not exhibiting the fluctuations associated with private capital inflows (IMF, 2005). In addition, owing to the limited potential of countries to attract foreign capital, the stable inflow of remittances from abroad has drawn the attention of researchers and policy makers. International remittances can be used to develop economies or smooth economic crises in developing countries. Therefore, many studies have attempted to investigate the determinants of remittances from other countries (Adams, 2008; Elbadawi and Rocha, 1992; Freund and Spatafora, 2005).¹

The motive of remittances sent home can be divided into two broad categories: altruistic motive and investment motive (Sayan, 2006; Schiopu and Siegfried, 2006). The altruistic

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motive mainly considers the economic conditions of the family left behind in the home country. Remittances are driven by worker concerns in mitigating the economic hardships of their families at home. In contrast, the investment motive takes into account home country economic opportunities that can be exploited. Most papers examining this issue have adopted a synthesized approach to study the factors affecting the level of remittances to home countries.

In order to productively exploit remittances, it is imperative that developing countries enhance the soundness of institutions, or improve financial market conditions (Catrinescu et al., 2009; Giuliano and Ruiz-Arranz, 2009). A multitude of literature has identified the determinants of remittances, such as income level, market size, and financial market development. However, governance quality effects on remittance inflows have not been fully investigated so far.

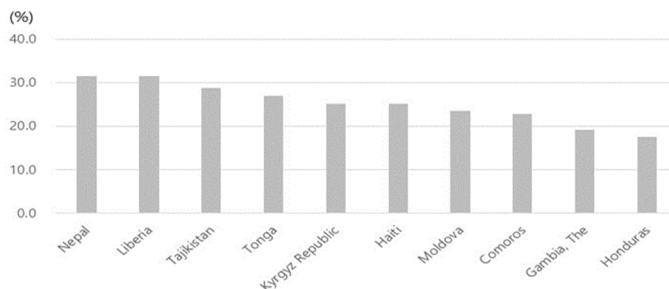
Based on existing literature on the determinants of remittance, we consider one socioeconomic variable that may influence remittances inflows: governance quality. This factor can affect the direction and magnitude of remittances to labor-sending home countries. Therefore, the purpose of this paper is to investigate whether or not governance quality really affects the inflows of remittances, empirically.

The paper is organized as follows. Section 2 presents the styled facts about remittances, and Section 3 describes the data and model. Section 4 reports the empirical results, and Section 5 concludes.

2. Styled Facts about Remittances

The paper compares remittances received by country, and examines trends in Korea to draw the purpose of this study. Fig. 1 below shows the top 10 countries for remittances as of 2015. As we can see, most underdeveloped and developing countries are listed. The countries with the largest remittances relative to GDP were Nepal (31.6%), Liberia (31.5%), and Tajikistan (28.8%). The average of remittances as a percentage of GDP for the top 10 countries is 25.3%, which indicates that remittances are one of the most important sources for developing countries.

Fig. 1. Top 10 Countries for Remittances Received



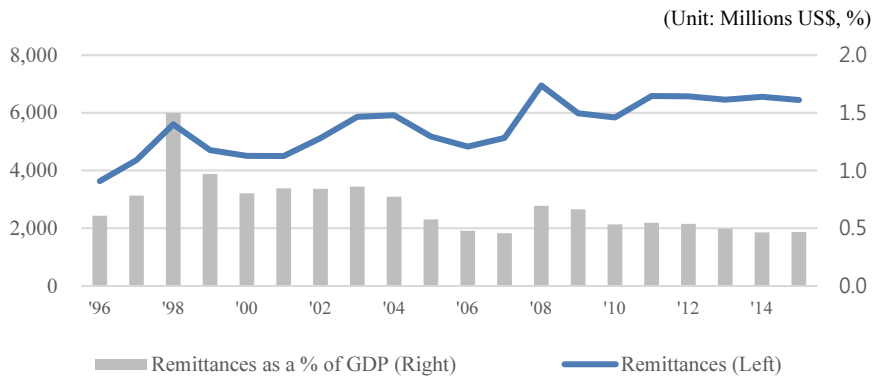
Note: As of 2015.

Source: Author's calculation based on World Bank Data (2017).

¹ With regard to case studies of single countries, for example, existing papers have explored the determinants of remittances for Egypt (El-Sakka and McNabb, 1999), India (Gupta, 2005), Turkey (Alper and Neyapti, 2006), Tonga (Lin, 2011), and so on.

Fig. 2 below shows the size of Korea's remittances from 1996 to 2015. In 2015, the size of remittances was approximately \$6.4 billion, a 1.8-fold increase from 1996. However, it can be seen that the relative of GDP has changed little from 0.6% in 1996 to 0.5% in 2015. In Korea, unlike underdeveloped and developing countries, the share of remittances was not very large. However, we can check that due to the altruistic motive of international remittances, the inflows of remittances temporarily increased during the 1998 financial crisis and the 2008 global financial crisis.

Fig. 2. Remittance Trends of Korea from 1996 to 2015



Source: Author's calculation based on World Bank Data (2017).

In underdeveloped and developing countries, remittances are recognized as a stable source of foreign funds, and used for productive purposes for economic growth. Although human and material exchanges are currently restricted by COVID-19, it is possible that the size of remittances will increase further due to the expansion of human exchanges in the era of globalization post COVID-19. In this context, this study was designed to present a more advanced understanding of the flow of remittances of altruistic nature through empirical analysis.

3. Data and Model

We obtained governance data from the World Bank's Worldwide Governance Indicators (WGI) produced by Kaufmann et al. (2010). The WGI reports six governance dimensions: voice and accountability (VA), political stability and absence of violence (PS), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), and control of corruption (CC).² The World Bank's governance indicators estimate from -2.5 to 2.5. Higher values imply stronger governance performance. The paper adopts these governance indicators independently to explore the relationship between the quality of governance and remittances from abroad.

Personal remittances are used as the dependent variable, and the per capita GDP and population of the home country, indicating the income effects and size of the economy, are included as control variables (Gupta, 2005; Adams, 2008; and Lin, 2011). Financial depth

² For a detailed explanation of these six governance indicators, please see (<http://info.worldbank.org/governance/wgi/>).

proxied by broad money as a percentage of GDP is also included (Aggarwal et al., 2011; Demirüç-Kunt et al., 2011; Rao and Hassan, 2011).

The baseline estimation equation is

$$\log(\text{Remittances})_{it} = \beta_0 + \beta_1 \log(\text{Population})_{it} + \beta_2 \log(\text{GDP per Capita})_{it} + \beta_3 \log(\text{Money/GDP})_{it} + \beta_4(\text{Governance})_{it} + \mu_{it} \quad (1)$$

where $t = 1996, \dots, 2015$, and log means the natural logarithm.

Here, subscript i stands for the country, and subscript t for the year. Governance stands for the governance indicators derived from the World Bank's WGI, consisting of six governance indicators. Population, GDP per capita, and broad money as a percentage of GDP were obtained from the World Bank's World Development Indicators (www.data.worldbank.org/data-catalog). The descriptive statistics tables for the variables are listed in Table 1. If the whole sample is divided into developed and developing countries by UN Classification, the averages of remittances as a percentage of GDP for developed and developing countries are 0.98% and 5.24%, respectively.³

Table 1. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Remittances (millions US dollars)	2,365	1,920.00	5,140.00	0.01	70,400.00
Remittances (% of GDP)					
[Developed Countries]	307	0.98	1.29	0.02	8.15
[Developing Countries]	2,058	5.24	7.33	0.00	53.83
Population (millions)	2,365	43.10	152.00	0.05	1,370.00
Per Capita GDP	2,365	8,025.37	14,204.33	111.36	102,910.40
Broad Money (% of GDP)	2,365	58.57	63.16197	4.53	977.01
Control of Corruption (CC)	2,365	-0.16	0.89	-1.82	2.55
Government Effectiveness (GE)	2,365	-0.13	0.86	-2.25	2.36
Political Stability and Absence of Violence (PS)	2,365	-0.19	0.92	-2.82	1.54
Regulatory Quality (RQ)	2,365	-0.09	0.83	-2.68	2.18
Rule of Law (RL)	2,365	-0.18	0.87	-2.07	2.09
Voice and Accountability (VA)	2,365	-0.10	0.86	-2.22	1.83

Note: Six governance indicators estimated approximately from -2.5 to 2.5.

4. Empirical Results

Table 2 shows the estimated results from equation (1). For each of the six WGI governance indicators obtained from the World Bank, the effects of governance on the inflows of

³ For the developed and developing countries list by UN classification, please refer to World Economic Situation and Prospects 2014.

remittances were estimated using the various estimation models. Columns (1) to (6) in Table 2 show the pooled ordinary least squares (OLS) estimation results for the impact of governance on remittances.

For the coefficients of the six governance indicators, control of corruption (CC), government effectiveness (GE), political stability and absence of violence (PS), and rule of law (RL) have negative signs and are significant at the 1% level. This means that a one-unit decrease in these governance factors could induce an increase in remittances inflows by 0.472% in column (3), or 0.421% in column (5). The negative association between governance and remittance inflows implies that deteriorated home country governance, in the case of political stability or rule of law conditions, would increase remittance flows from abroad, notwithstanding that voice and accountability (VA) and regulatory quality (RQ) were not statistically significant. These results show that the concerns of workers in foreign countries for their families induce the sending of earnings to home countries, mitigating the economic difficulties caused by deteriorated governance. This is consistent with existing papers considering the altruistic motive of remittances.

The coefficient of population is positive and significant at the 1% level, meaning that the size of the home country and level of remittance inflows are positively correlated. The coefficient of GDP per capita is positive and significant at the 1% level. This means that countries having a high level of income tend to receive more remittances. This result shows that the investment motive of remittances is relevant to a variable of GDP per capita for the developed countries. The coefficient of MONEY/GDP, which indicates the financial depth of a country, is positive and significant at the 1% level. This implies that a home country with more financial depth can attract more remittances.

Columns (7) to (12) of Table 2 give the random effects estimation results. With respect to the six governance indicators, we obtained results similar to the previous estimation. The coefficients of each governance indicator were all negative and significant at the 5% or 1% levels, except for voice and accountability (VA). These results also revealed that a country with poor governance quality seems to have more remittance inflows from abroad.

Estimated coefficient of population, GDP per capita, and MONEY/GDP are also positive and significant at the 1% level, which means that the larger the country, the higher the income level, and the more a developed financial market could help attract more remittances.

A Tobit estimation result was given through columns (13) to (18) in Table 2. Even though the voice and accountability (VA) variable is insignificant, we found a negative association between other governance indicators and level of remittance. This implies that a lower level of governance would induce workers to send savings to their home countries. Other explanatory variables are shown to be statistically positive at the 1% level.

Using the principle component technique (PCA), we checked the robustness of the empirical results above. Principle component analysis provides a method for simplification and combining variables into representative factors. We reduced six indicators into one variable, governance (Governance), in order to concentrate more on a simplified analysis.⁴ Prior to re-estimation for the robustness check, the correlation between governance and remittances as a percentage of GDP by using a scatter plot is shown in Fig. A (Appendix). The negative relationship between the two shows an altruistic motive rather than an investment motive in general.

⁴ The criteria to meet an eigenvalue above 1 are only one, which explains over 84% of the six indicators correlated variance in our governance dataset. Therefore, we chose this component as the main governance variable for representing governance indicators (see Fig. B in Appendix).

Table 2. Remittances and Governance

Governance Indicator	Pooled OLS								Random Effects								Tobit			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)		
Log (Population)	0.727*** (0.015)	0.759*** (0.014)	0.665*** (0.017)	0.754*** (0.014)	0.733*** (0.014)	0.761*** (0.015)	0.875*** (0.062)	0.868*** (0.062)	0.856*** (0.063)	0.883*** (0.061)	0.850*** (0.062)	0.883*** (0.061)	0.887*** (0.068)	0.874*** (0.066)	0.866*** (0.068)	0.894*** (0.068)	0.857*** (0.066)	0.896*** (0.069)		
log(GDP per capita)	0.450*** (0.043)	0.446*** (0.048)	0.406*** (0.033)	0.277*** (0.042)	0.426*** (0.042)	0.253*** (0.035)	0.906*** (0.040)	0.927*** (0.040)	0.908*** (0.040)	0.919*** (0.041)	0.922*** (0.040)	0.892*** (0.040)	0.919*** (0.040)	0.935*** (0.041)	0.922*** (0.041)	0.933*** (0.041)	0.930*** (0.040)	0.911*** (0.041)		
log(MONEY/GDP)	0.814*** (0.063)	0.820*** (0.065)	0.775*** (0.063)	0.721*** (0.066)	0.834*** (0.064)	0.709*** (0.066)	0.718*** (0.067)	0.732*** (0.067)	0.715*** (0.067)	0.706*** (0.067)	0.747*** (0.067)	0.718*** (0.067)	0.712*** (0.067)	0.727*** (0.067)	0.710*** (0.067)	0.700*** (0.067)	0.741*** (0.067)	0.711*** (0.067)		
Governance	-0.464*** (0.061)	-0.422*** (0.075)	-0.472*** (0.051)	-0.006 (0.068)	-0.421*** (0.065)	0.073 (0.052)	-0.162** (0.066)	-0.318*** (0.075)	-0.148*** (0.047)	-0.185*** (0.068)	-0.359*** (0.077)	-0.076 (0.072)	-0.140** (0.068)	-0.302** (0.076)	-0.140*** (0.048)	-0.172** (0.069)	-0.344*** (0.079)	-0.065 (0.073)		
Constant	1.212*** (0.393)	0.739 (0.511)	2.680*** (0.332)	2.591*** (0.439)	1.236*** (0.423)	2.733*** (0.350)	-4.484*** (0.967)	-4.604*** (0.963)	-4.183*** (0.973)	-4.659*** (0.956)	-4.361*** (0.963)	-4.469*** (0.957)	-4.738*** (1.052)	-4.756*** (1.028)	-4.441*** (1.061)	-4.915*** (1.051)	-4.516*** (1.025)	-4.798*** (1.065)		
Observations	2,369	2,369	2,369	2,370	2,374	2,374	2,369	2,369	2,369	2,370	2,374	2,374	2,369	2,369	2,369	2,370	2,374	2,374		
R-squared	0.508	0.502	0.512	0.494	0.505	0.495	0.433	0.435	0.434	0.435	0.434	0.433	0.433	0.435	0.434	0.435	0.434	0.433		
No. of Countries	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158		

Notes: 1. Standard errors are in parentheses.

2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 3. Remittances and Governance: Robustness Check

	Pooled OLS (19)	Fixed Effects (20)	Random Effects (21)	Tobit (22)
log (Population)	0.732*** (0.015)	1.200*** (0.209)	0.845*** (0.063)	0.854*** (0.067)
log (GDP per capita)	0.419*** (0.045)	0.962*** (0.049)	0.933*** (0.040)	0.942*** (0.041)
log (MONEY/GDP)	0.797*** (0.064)	0.675*** (0.069)	0.727*** (0.067)	0.721*** (0.067)
Governance	-0.375*** (0.071)	-0.185* (0.099)	-0.366*** (0.086)	-0.349*** (0.088)
Constant	1.484*** (0.410)	-9.741*** (3.077)	-4.282*** (0.969)	-4.462*** (1.037)
Observations	2,365	2,365	2,365	2,365
R-squared	0.500	0.437	0.435	
No. of Countries	158	158	158	158

Notes: 1. Standard errors are in parentheses.

2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 3 shows the results of the robustness check. The Hausman test, which shows whether a fixed or random effects model is appropriate, provides evidence that a fixed-effects model is preferred in this study ($\chi^2(4) = 57.85, p < 0.000$).

Using PCA, the representative governance variable has statistically negative signs from column (19) to (22). This shows that the relationship between governance quality and remittances received are negative, and a one-unit decrease in governance would induce more remittances by 0.185~0.375%. The result implies that the motive of remittances seems to be predominantly altruistic with regard to deteriorated governance quality.

In summary, empirical results in Tables 2 and 3 indicate a negative association between governance quality in the remittance-receiving country and remittances from abroad. An explanation for this a negative relationship between governance quality and remittance inflows is that a lower quality of governance could induce workers to send savings home for the purpose of mitigating economic difficulties caused by deteriorated governance. Therefore, we can say that home country governance quality can be considered one of the determinants affecting the altruistic motive of remittance inflows.

5. Conclusion

Governance quality is assumed to influence the motive of workers in sending remittances home. Since the concerns of workers on the economic and social conditions of their home country would be the important factor to decide the remittance amount, the level of remittances may be correlated with the quality of governance in the home countries. If the governance system is deteriorated, workers may make a decision to send remittances to their family. Using panel data for 158 countries from 1996 to 2015, this paper found that the inflow of remittances was negatively correlated with the quality of governance in a home country. Specifically using the PCA, it was analyzed that deteriorated governance would increase remittances sent home by 0.185~0.375%. We also identified that large country size, high level

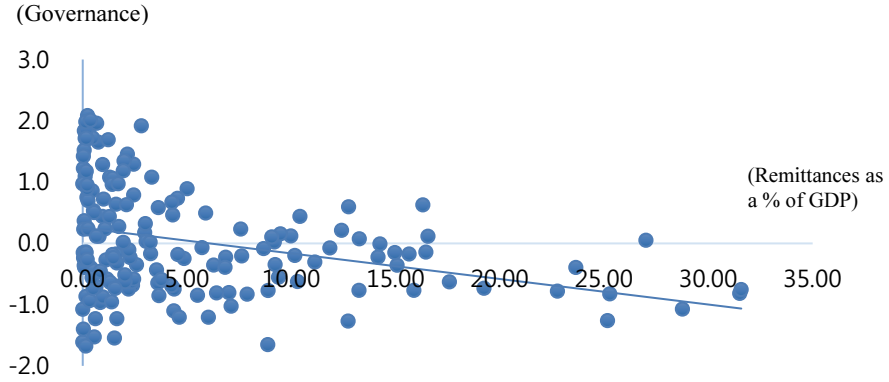
of income, and a well-functioning financial market could serve to attract more remittances from abroad. Therefore, we can consider governance quality as one of the determinants of remittance inflows with an altruistic motive

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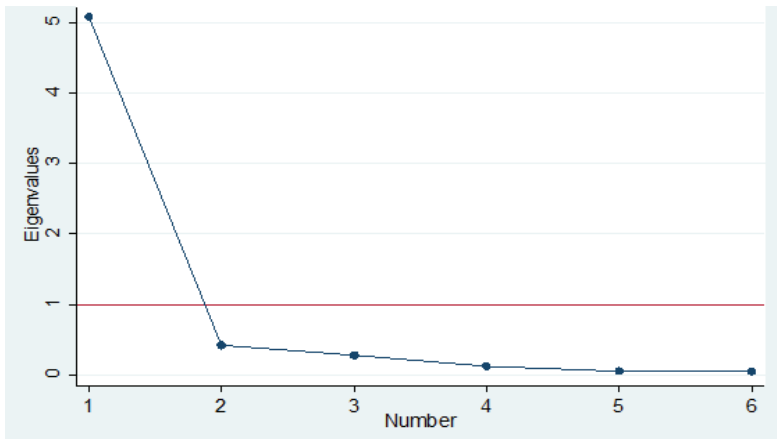
Appendix

Fig. A. Scatter Plot between Governance and Remittances



Source: Author's calculation based on World Bank Data (2017).

Fig. B. Scree Plot of Eigenvalues



Source: Author's calculation based on World Bank Data (2017).