The Role of Institutions, Culture, and Wellbeing in Explaining Bilateral Remittance Flows: Evidence Both Cross-Country and Individual-Level Analysis

Faruk Balli and Cahit Guven and Hatice O. Balli and Rukmani Gounder

Massey University School of Economics and Finance, Deakin University, Massey University School of Economics and Finance, Massey University School of Economics and Finance

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Faruk Balli* Cahit Guven† Rukmani Gounder ‡ Hatice Ozer-Balli§

Abstract

This paper explores the determinants of bilateral remittance flows at the country-level; specifically, institutional quality, wellbeing, and culture using a novel dataset published by Ratha and Shaw (2007). Next, we look for support in the German Socio-Economic Panel using individual level regressions which allows us: (i) to control for various individual correlates and fixed effects, and (ii) to analyze remittances sent for different purposes separately. We uncover important relationships with these unique datasets. The country-level results indicate; (i) classical gravity equation variables explain bilateral remittance flows (ii) institutional quality, wellbeing and cultural differences play important role in explaining bilateral remittance flows (iii) financial variables such as exchange rate and interest rate differentials matter as well. Institutional quality matters more for remittance flows between high-income countries and between low-income countries but it does not explain the remittance flows from high-income to low-income countries. Cultural differences become a more dominant factor in explaining the flows between low-income countries. These findings are also supported by the individual level analysis. In addition, German migrants send less money back home when they feel like more German and become home-owners. Countries receive less remittances from Germany when they become happier, their health-care and social-security system improve but receive more with confidence in government, chance of war, and improved political system. These institutional factors only matter for remittances sent for family support. Financial variables such interest rate and exchange rate differentials however, only matter for remittances sent for savings purposes. The results have important policy implications. Institutions matter for remittances but treating whole institutions as one in this framework can be misleading. The role of financial variables, indicators of institutions, and culture depend on the form of remittance and the characteristics of receiving and sending countries.

JEL Classification: F36, F155, F41, G11, G12.
Keywords: Bilateral cross-country remittance data, individual-level remittance data, institutional quality, wellbeing, gravity equations.

1 Introduction

The perpetual movement of people across countries and the opportunities for migration have become more accessible in the developing nations with the need for skilled and inexpensive labor. This widespread movement of people between the developing and developed nations transforms not only the lives of that migrant population but also influences the lives of those family members in the home country through remittance flows. The interest on the effects of migration in the development agenda is the growing significance of income transfers from migrants to their families back home, i.e. international migrant remittances (Cordova, Lopez and Olmedo, 2006).

While remittances may raise the recipient country's development indicators, they can help overcome some of the factors hindering household welfare by equalizing the distribution of income, reducing poverty, financing

*Department of Economics and Finance, Massey University, Private Bag 11-222, Palmerston North, New Zealand. E mail:F.Balli@massey.ac.nz.

†School of Accounting, Economics, and Finance Deakin University 221 Burwood Highway Burwood, Victoria,Australia E mail:cahit@deakin.edu.au

‡Department of Economics and Finance, Massey University, Private Bag 11-222, Palmerston North, New Zealand.

§Department of Economics and Finance, Massey University, Private Bag 11-222, Palmerston North, New Zealand.E mail:H.Ozer-Balli@massey.ac.nz.

education, health, entrepreneurial development and by providing a stable source of foreign currency (Lopez-Cordova and Olmedo, 2006). However, in assessing the development impact of remittances two issues must be noted. As the process of migration and remittances are intertwined, i.e. remittances cannot happen without migration, attention to remittances from the policy perspective has been aimed to facilitate international income transfers and its developmental impact. Also, as remittances are counter-cyclical than other sources of income such as wages or government transfers allow households to diversify risk and smooth consumption. Given the growing prominence of remittances it is then natural to ask whether it improves development prospects in developing nations, or as Kapur (2004) states whether remittances are simply a "new development mantra", a fad that may soon subside.

The determinants of remittance and benefits to the individuals and the economy have been vital in estimating the developmental role of remittances at the national and household levels while assisting the households in their consumption activities and investment in education, health, and livelihood activities. Given the growing prominence of remittances, the paper makes a three-fold contribution to this literature by utilizing the cross-country and individual-level regressions to explore the determinants of bilateral remittance flows such as institutional quality, wellbeing, and culture. These hypotheses fill the gap in the existing remittances literature and contribute to the debate of the impact of remittance in three important ways. (1) We focus on cross-country analysis in a baseline model using a novel dataset published by Ratha and Shaw (2007) to test the impact of gravity equation variables (bilateral trade, distance, share a border) as well as economic and financial variables. (2) We examine the relationship between the level of bilateral remittance flows, institutional quality and the wellbeing variables. (3) The third aspect of the investigation relates to cultural differences (through religion) to the level of remittance flows between the sending and recipient countries.

At the micro-level analysis, the three-fold investigations are applied using the German Socio-Economic Panel (GSOEP) to examine the links between the level of bilateral remittance flows, institutional quality, financial indicators, and wellbeing with individual-level remittance transfers and to quantify the effect of individual characteristics (such as behavioral nature of a sense of belonging in the host country). The contribution here is that (i) we can identify the importance of our variables of interest in explaining remittances not only for total remittances sent but also for remittances sent for family support and for savings purposes separately. (ii) we can control for many individual correlates, country and individual fixed effects which will provide better estimates.

Studies of remittances seek to explain the motivations why individuals remit and understanding these motivations explain the private nature of remittances flows. Although remittances are regarded as private flows between individuals and their families, the effects of migrants' remittances are economy wide. There has been considerable debate on the developmental impact of remittances on developing countries, particularly those characterized by intense outward migration. On the one hand, the relationship between remittances and macroeconomic factors investigate the influence of remittances on macroeconomic conditions of receiving countries, remittances-growth nexus with the perspectives of financial development, quality of institutions, export sector, level of inequality, poverty, human capital, and income distribution.[1] Many of the findings in

[1]Various studies in these areas include Giuliano and Ruiz-Arranz (2009), Catrinescu et al. (2009), Amuedo-Dorantes and

these studies, however, are contradictory.[2] An extensive survey on the determinants of remittances which include both cross-country and individual-level studies has recently been provided by Carling (2008). On the other hand, behavioral factors have been crucial to understand remittance flows and its impact at the household level.[3] Altruism also has different effects explained by various behavioral factors (Funkhouse (1995)).

On the relationship between institutional quality and wellbeing, using both regional and country-level data, studies have also shown that measures of social capital and trust are strongly correlated with happiness (Bjrnskov (2006), Helliwell (2006), Helliwell et al. (2009)). Institutional factors in the form of direct democracy and federal structure raise self-reported individuals' well-being in a cross-regional analysis. This relationship is due to political outcomes closer to voters' preferences, as well as to the procedural utility of political participation possibilities (Frey and Stutzer (2000)).[4] Moreover, individuals declare themselves to be happier when the party they support is in power. Recessions create psychic losses that extend beyond the fall in GDP and rise in the number of people unemployed, and higher unemployment benefits are associated with higher national well-being. Economic development, democratization, and increasing social tolerance have increased the extent to which people perceive that they have free choice, which in turn has led to higher levels of happiness explained by the human development model (Inglehart et al.(2008)).

In our baseline model using cross-country data, we find that gravity equation variables matter for bilateral remittance flows with the expected signs. We find that GDP per capita differences (real income of sending country minus real income of receiving country) positively effects the amount of the bilateral remittance flows. Immigrants living in the richer countries will be paid more, consequently they have more wealth accumulation to send back home. Relative interest rates of source country lessen the remittances sent as expected. Migrants probably prefer to invest their money in the country which has a higher interest rate and provides higher return. We also observe that cultural differences are significantly important in explaining the bilateral remittance flows. Sub-sample analysis reveal more interesting results. Interest rate differentials become insignificant in explaining bilateral remittance flows among low-income countries. Volatility of exchange rate differentials is significant for the entire sample but it is insignificant when we restrict the bilateral remittance flows between low-income countries. But, it can predict the flows between high-income countries. The cross religion dummies are used to measure the cultural differences and indicate that among low-income countries the amount of remittance transfers increase when the population of the sending country and the recipient country follow different religions from each other. The same variables are insignificant when we do the estimations among

Pozo (2004, 2006), Acosta et al. (2008, 2006), Calero et al. (2009), Freund and Spatafora (2008), Amuedo-Dorantes and Mazzolari (2008) Adams and Page (2005), Osili and Paulson (2008), Vargas-Silva and Huang (2006), Chami et al. (2005) De Haas (2005), Goldring (2004), Rozelle et al. (1999), Barham and Boucher (1998), Taylor and Wyatt (1996), Stark et al. (1986).

[2]While several studies have found mixed evidence Catrinescu et al. (2009) point out that this could be due to omitted variable bias, and specifically, remittances will be more likely to contribute to longer-term growth in countries with higher quality political and economic policies and institutions.

[3]Ilahi and Saqib (1999) find that remittance to the immediate family and savings retained abroad both fall with the pre-migration loan. Changes in return plans could also influence remittance flows (Mestres and Dustmann (2010)). Amuedo-Dorantes and Pozo (2006) find that the dollar amount remitted increases first with time spent but declines after five and a half years in the case of United States. Remittance decay occurs at a faster rate for migrants maintaining weaker ties to Mexico and up to three years later for their counterparts with spouses back in their origin communities.

[4]Oswald et al. (2001) find that the rates of price change and joblessness affect life satisfaction. Growth is found to be related to well-being (Oswald (1997)). Alesina et al. (2004) find a negative relationship between inequality and happiness using country-level analysis. Movements in well-being are correlated with changes in macroeconomic variables such as gross domestic product (GDP) (Di Tella et al. (2003)).

high-income countries. These results suggest that the importance of variables in explaining remittances depend not only on the economic characteristics but also on the cultural heritage of the sending and the receiving countries. Financial variables seem to matter more for remittance flows between high income countries but, cultural differences (through religion dummies) appears to be important for the flows between low-income countries. We also investigate the role of institutions and wellbeing. After controlling the factors discussed above, we find that countries with better institutions (relative to sending countries) attract more remittances. Institutional quality is important in particular in explaining the bilateral remittance transfers from high-income to high-income countries and from low-income to low-income countries. However institutional quality measures are insignificant for the bilateral flows from high-income to low-income countries.

The findings to assess the micro-level effects of culture, institutional quality and wellbeing on remittances provide evidence that apart from the general factors that Dustmann and Mestres (2010) note, becoming a house-owner in Germany forces immigrants to send less money back home. In addition, the extent to which a society leads to a change in the behavioral nature of being a local or has a sense of belonging, we find that immigrants remit less money when they feel like German. Similar to the country level analysis, being happy also plays a crucial role in determining the remittance flows. As the level of happiness increases in the immigrants' country of origin, the amount of remittance flows decreases. Again, we find crucial results with respect to institutional quality. Immigrants in Germany tend to send more money back home when they have confidence with the home country's government and that the political conditions have improved. However, less money is remitted as the social security system and health care system improves in the home country. These institutional factors explain the remittances only sent for family support. On the other hand, financial variables can only predict remittances sent for savings purposes.

The results of these various hypotheses suggest that policy makers should focus more on the bilateral linkages with the sending countries to promote remittance inflows and the these linkages differ with respect to the form of remittance. Also, the results emphasize the fact that for the remittance receiving country policies should be directed to improve the quality of living standards and quality of the institutions to encourage higher remittance inflows and maximize its impact given that sending country is being happier relative to the recipient country. The penultimate section discusses the literature followed by data, models and empirical results. The final section presents the conclusion.

2 Data

The national data on bilateral remittances are hard to obtain and its level of accuracy can be questioned as funds channeled through international banks may be attributed to a country other than the actual source country. Despite the shortcomings some studies have estimated the impact of bilateral remittance flows.[5] In

[5]Schiopu and Siegfried (2006) create a new panel data set of bilateral flows for 21 Western European and 7 European Union (EU) neighboring countries. Similarly, Jimnez-Martin, Jorgensen, and Labeaga (2007) estimate bilateral workers remittance flows from all 27 members of the EU to recipient countries. On the other hand, Lueth and Ruiz-Arranz (2008) have employed the largest known bilateral data-set to date to a group of developing countries. Data query to the central banks of 33 developing countries with significant remittance receipts in Asia, Europe, and the Middle East have produced bilateral remittance data for 11 recipient countries. In addition, Inter-American Development bank has collected data on bilateral remittances from the US to countries in the Central American region for 2005.

order to measure the effect of wellbeing, quality of institutions and culture on bilateral remittance flows, a broad dataset is employed to evaluate these hypotheses. However due to changes in the economic and cultural conditions of the sending and recipient countries using a restricted data set would not provide clear implications of the effects of these variables. Therefore we utilize the dataset created by Ratha and Shaw (2007) to explore the determinants of bilateral remittance flows. In the absence of hard bilateral data, they have calculated bilateral remittances by allocating remittances received by each developing country among the countries of destination of its migrant nationals.

They use three different allocation rules: (i) weights based on migrant stocks abroad; (ii) weights based on migrant incomes, proxied by migrant stocks multiplied by per capita income in the destination countries; and (iii) weights that take into account migrants incomes abroad as well as source-country incomes (the data sets can be accessed for these methods in Ratha and Shaw (2007). The bilateral matrix covers 212 countries, of which 154 are low- and middle-income countries, 24 are high-income Organization for Economic Cooperation and Development (OECD) countries, and 34 are high-income countries that are not members of the OECD.[6] The immigrant flows data is employed in order to create the remittance flows per capita between the sending and recipient countries. On the right hand side, we have a substantial number of variables to control for the determinants of remittance flows via macro level analysis. Bilateral trade volume in USD between the sending and recipient country is obtained from IMF's Direction of Trade database. To create cross section variable for bilateral trade, we average bilateral trade between the sending and recipient countries for the period 2001 to 2005. Interest rate is obtained from IMF's International Financial Statistics (IFS) database. We average the interest rates between 1996 and 2005 to eliminate the seasonality and the spikes in the data. Exchange rate dataset is also obtained from IMF's IFS database, i.e. the national currency per USD for the last 15 years and estimate the standard deviation to proxy for the volatility in exchange rate. The economic size of the countries is measured by real GDP per capita (i.e. average GDP per capita for 2001-2005). The other gravity equation variables include dummy variables for colony, distance between financial centers, common language, sharing same border, practicing same religion are employed based on the Centre D'Etudes Prospectives et D'Informations Internationales (CEPII).

Institutional quality is first measured using Transparency International's corruption perception index (CPI) data since 1995. This index measures institutional quality in five major areas: (1) size of government, (2) legal structure and security of property rights, (3) access to sound money, (4) exchange with foreigners, and (5) regulation of capital, labor, and businesses. We use CPI to measure the degree to which corruption is perceived to exist amongst the institutions. For the cross sectional data we averaged the CPI index between 2001 and 2005.[7] In addition to CPI, other indices employed are civil rights, freedom of expression of belief and functioning of government from Freedom House. We employ these 5 sub-indices to measure the quality of life standards. Variables have been averaged taking the common denominator for each index for each country.[8]

[6]The University of Sussex data set employs national censuses, population registers, national statistical bureaus and a number of secondary sources (OECD, ILO, MPI, DFID, UN) to compile bilateral migrant stocks for the dataset.

[7]A number of studies use CPI, to cite just a few see Husted (1999), Habib and Zurawicki (2002), Seligson (2002), Balli et al. (2009).

[8]The values for each variable range between 0-7 and 0-15, these are adjusted where the maximum value correspond to the highest standards.

2.1 German Socio-economic Panel and Euro-barometer data

Analyzing the determinants of the remittance flows with individual level data, we use 12 waves of the German Socio-Economic panel data for the period 1984-1995.[9] The GSOEP data contains interview results of about 4500 households of German-born household head and about 1500 households of foreign-born household head in the first wave. In this analysis we use observations for the foreign born category from the over-sample and standard sample. The data are both qualitative and quantitative in nature. Immigrants are asked whether they remit for each of the above purposes. It distinguishes between remittances for family support, remittances for saving purposes in the home country, and remittances for other motives. All monetary variables (including remittances and savings) are in real values. In addition, the individual and household characteristics in the host country, as well as information on family members who are living in the country of origin are reported. There are 10,144 household-head observations (with 1802 household-heads), 57 percent of the households have sent money back home and 43 percent did not, 88 percent of the sample consists of male headed households and 12 percent are female headed.

The World Values Survey (WVS) reports data between 1980 and 1995 which covers the first 2 waves and the Euro-barometer data between 1984 and 1995. We construct country averages for each year for the following variables from Euro-barometer survey: satisfaction with life (1-5), satisfaction with the democracy (1-5), overall happiness (1-5), political discussions, peacefulness, importance of religion, political ideology (on a scale 0-10). The WVS data-set includes happiness, life satisfaction as a whole, trust, etc. The GSOEP data-set provides information on the country of origin which enables to match the WVS and Euro-barometer for the year and country of origin of the immigrants in Germany for accuracy.[10]

3 Empirical models: Cross-country and individual-level framework

The macroeconomic framework is based on two empirical models. First, we employ gravity equation variables to explain the bilateral trade and portfolio flows and its impact on bilateral remittance flows.[11] Gravity equation for the portfolio flows or trade flows states that the amount of bilateral flows between the source and host country are in relation to countries' economic sizes, distance between the countries, some physical and cultural proximity, such as shared border, language relationship or common colonial history. The gravity equation takes the following econometric form:

$$\text{REMITTANCE}_{ij} = \beta_0 + \beta_1 T_{ij} + \beta_2 Z^{i-j} + \beta_3 \text{BANK}_j + \varepsilon_{ij}, \quad (1)$$

[9]The GSOEP is a household-based panel data for the resident immigrant population in Germany that provides a rich set of survey questions on remittances and savings. The data-set is unique in providing information on a sample of immigrants over a long period of time. Each individual in the household over the age of 16 is interviewed and the household head provides information about individuals in the household below the interviewing age.

[10]The five waves of the WVS and European Values Surveys are for the periods 1981-1984, 1990-1993, 1995-1997, 1999-2004, and 2006-2008. The variables used are described in Appendix Tables A1, A2, A3 and A4.

[11]Portes and Rey (2005), Lane and Milesi-Ferretti (2008) apply gravity equations to explain the determinants of bilateral equity and portfolio volumes, and Deardorff (1984) employs gravity equations to estimate bilateral trade flows.

where REMITTANCE_{ij} is the remittance flows from sending country (i) to recipient country (j) per migrants residing in the sending country, expressed in logarithmic terms. T_{ij} is a vector of potential factors influencing remittance flows.(Colony dummies, sharing same border dummy, common language dummy, Physical distance, Trade volume) Z^{i-j} contains economic and financial variables that are created by subtracting Z^j from Z^i. Those variables include, real GDP per capita(in USD), interest rate, volatility of exchange rate. BANK_j is an index created to measure how deep is the financial sector in the recipient country. It has been used to proxy for the transaction costs in the source country.[12]

Second, in addition to the gravity equation, we control for the cultural differences, institutional quality and life satisfaction differences between the sending and recipient country. The estimated equation takes the following form:

$$\text{REMITTANCE}_{ij} = \beta_0 + \beta_1 T_{ij} + \beta_2 Z^{i-j} + \beta_3 \text{BANK}_j + \beta_4 Y_{nij} + \beta_5 X^{i-j} + \varepsilon_{ij}, \tag{2}$$

Cultural differences are proxied by cross-religion dummies, Y_{nij}. Y_{nij} contains the cross religion binary variables between the sending and the recipient country. For example, CHRIST_{nij} is a binary variable that takes the value of 1 when the sending country (i) is non-Christian and the receiving country is Christian. X^{i-j} contains variables that measure the quality of institutions, and quality of life levels between the sending and receiving country. Both these models are estimated using pooled Ordinary Least Squares (OLS) regression methodology. To control for endogenity, we apply the instrumental variable (IV) technique after specifying endogenous variables in the above models.

In the microeconomic analysis we estimate log of remittances value sent as a function of the household characteristics, i.e. household income, dwelling ownership, number of children and adults in Germany, children and spouse in the home country, and of the household head's characteristics, i.e. years since migration, years since migration squared, childhood residence, age, employment status, gender, years of education, together with year and country of origin dummies. The dependent variable (log of remittances) takes the value 1 for those households who have not sent any remittances. The OLS estimation methodology used for the basic specifications ease the interpretation of the results than the probability models.[13] Some specifications also are based on individual fixed effects. The standard errors are clustered by the household heads in the OLS specifications.[14]

The descriptive statistics for the macroeconomic and microeconomic estimations are presented in Appendix Tables A1–A4. The macroeconomic characteristics shown in the Appendix Tables A1 reflect the cross-country remittance flows, financial, institutional, life satisfaction and cultural aspects used in the gravity equations. Majority of these factors have positive coefficients which explain the bilateral remittances flows. The immigrant household heads descriptive statistics are presented in Table A2. The average household head age is around 43

[12]Freund and Spatafora (2008) used this variable as a proxy for the transaction costs for sending money to the source country and they found significant results.

[13]We also estimate the regressions using Tobit models as well as Probit models and find that results are similar to OLS results.

[14]Also, dummy variables for country of origin are not included in the OLS specification if the independent variables of interest do not change over time (for instance, distance between Germany and the country of origin).

and 8 percent own their house, 82 percent is employed and 87 percent is male. The average years of education level is 9.4 years, 80 percent are married and 6 percent has a spouse abroad and 10 percent has kids back in the home country. Duration of stay in Germany is around 19 years and 40 percent has lived in a country-side back at home. Descriptive statistics for the main variables by country of origin are shown in Table A3, 32 percent of the sample comes from Turkey and 16 percent are from Ex-Yugoslavia. Albania has the highest score at 74 percent that sent money back home, however in terms of per household Spaniards have sent most money in total remittance. There is some persistence in remittance sending behavior seen in Table A4. The probability of not sending money in the next period conditional on not sending money in this period is around 80 percent.

4 Empirical Results

The estimated results are based on various hypotheses to observe the gravity equation determinants of remittance flows, and its link between institutional quality, wellbeing variables, and cultural diversity. Equations 1 and 2 are computed using cross-country bilateral remittance observations for 149 recipient countries and an average of 166 sending countries. The micro-level analysis links bilateral remittance flows to institutional quality and wellbeing using individual-level remittance transfers, and quantify the effect of behavioral nature of a sense of belonging in the host country. To our knowledge such analysis (merging household-level information with country-level data) has not been done before. Overall the results have a relatively high explanatory power and these new findings contribute significantly to the remittances literature.

4.1 Cross-country analysis

Table 1 presents the estimated results using pooled OLS for the entire sample. Consistent with the previous studies (see Lueth and Ruiz-Arranz (2008)), we find that the gravity equation variables are significant in explaining bilateral remittance flows (column (1)). Bilateral trade volume between the recipient and the sending country is highly significant, intuitively the increased volume of trade between the countries makes financial and economic connections stronger, thereby leading to comparative advantage in a wider transfer between these countries. Sharing same border makes the transfer of money easier between the sending and recipient countries. This is intuitive as ease of traveling between the countries may encourage immigrants to send money for investment purposes. Having a common language has a negative and significant effect, it emphasizes that having same language between the sending and receiving countries helps them to adapt in residing country and may encourage to spend (invest) more in the residing country rather than remitting funds. Among the colonies, being a former Spanish colony negatively relates to remittance flows as for the British colony, whereas being a French colony has a positive and significant effect (column (4)). Economic and financial condition differentials have a significant role in explaining the bilateral remittance flows. The GDP per capita coefficient is positive and significant indicating that as the sending country is richer compared to the recipient country, the immigrants in the sending country is expected to send more money back home. Volatility of exchange rate differences is highly significant in explaining the remittance flows which suggests that high volatility in exchange rate tends to decrease levels of transfer that decreases the exchange rate

risk in their future investments. The variable $Bank_j$, proxies for transaction costs to measure the possible impact in bilateral remittance flows (See Freund and Spatafora (2008)). For the entire sample, we observe that immigrants care about the transaction costs when they are sending money back home and they send more when the transactions costs are lower.

Bilateral trade and interest rate differentials are corrected for endogeneity using instrumental variable (IV) regressions (column (3)). For this specifications, we employ the lags of trade and interest rate differentials as instrumental variables. The estimated coefficients provide similar signs as in column (1), interestingly interest rate differentials that is not significant in Column (1), become negative and highly significant in column (3). The economic intuitive finding suggests that immigrants would hold their earnings in the residing country as the investment returns are more appealing in their residing countries. Column (2), in addition to gravity equation variables, includes the cross-religion binary variables.[15] The findings show that among all major religions the immigrants that follow Islam, Confucianism, and Orthodox Church have a tendency to send more money when they were living in countries where their citizens follow other religions. The Hindu coefficient though positive is not significant. However, Christian and Buddhist immigrants transfer less money back home. These findings are similar to Column (4) with the IV estimation results. Indeed, some of the binary religion variables may be explained by the fact that the entire sample contains high-income Christian populated countries and their citizens living abroad do not consider to remit.

The next step involves investigating remittances flows by grouping nations according to income levels, i.e. high-income and low-income sub-samples constructed with respect to the income levels of both sending and receiving countries. Table 2 presents the sub-sample results of baseline regressions. Column (1) is the high-income group, i.e. when both receiving and sending country are member of high income countries. The determinants of remittance flows between higher income countries show that GDP per capita differences do not have a significant impact on remittance flows. This supports the view that immigrants may have other motives then income differences when they are from high income countries and living in another high income country. However, volatility of exchange rate differentials and interest rate differentials are significant and in expected signs suggesting that immigrants might may have stronger investment motives. Unlike the Table 1 results, essentially, the transaction cost, bank cost and distance variables are not statistically significant which supports the view that cost of remitting money through financial institutions are low between high-income countries. Therefore it should not be a factor for the immigrants to restrict the money transfers. The results for the former colonies show that remitting funds from a British colony has declined, however the Spanish colonial relationship is positive but not significant (Table 2, column (1)).

In the sub-sample of high-income to low-incomes countries (Column (2)), the results are quite similar to the previous ones. The most important result in this table is in the sample for flow of remittances within the low-income countries (column 3). All cross-religion dummies have positive and significant effects.[16] These results indicate that immigrants remit more when they feel culturally alienated in the country they are residing

[15]These binary variables take the value of 1 when the recipient country's citizens follow religion X, and the sending country's citizens follow another religion.

[16]Estimations containing gravity variables for all sub-samples are not reported here due to brevity, this result is available from the authors on request. Also, the Adjusted R^2 value increases from 55 to 71 percent when the entire cross-religions are included.

in. But this mostly holds for the low income groups. Amongst the low-income to high-income sub-samples (column (4)) the estimated coefficients do not have similar effects of all cross-religions. Overall, the results support the view that, in particular, between low-income countries, immigrants tend to remit funds based on religion purposes- a valid proxy for cross-cultural differences -to their country of origin. It seems that cross-cultural differences are a crucial indicator in explaining bilateral remittance transfers among low income countries.

Do institutional quality and wellbeing predict remittance flows? The estimated results of pooled OLS method are reported in Tables 3 (whole sample) and 4 (income groupings).[17] By employing various measures of institutional quality, we test whether or not immigrants have other motives beyond financial or cultural factors when they decide the amount of the money remitted. Measures of institutional quality (i.e. corruption index, civil rights, freedom, individual rights, rule of law and government) are included as differences between the sending country and the receiving country to measure the relative quality of institutions in the sending country. The quality of institutions and the wellbeing in the sending country relative to the recipient country are important determinants of remittance flows. Intuitively, we test if the immigrants are more motivated to hold their savings in the residing country instead sending money back home when sending country has better institutions.

The panel A of Table 3 shows that all measures of institutional quality are negative and significant thereby indicating that better quality of institutions in the sending country (i.e. have civil rights, being able to express beliefs more freely, have individual social and economic rights, have rule of law and government functioning) motivate the immigrants to remit less money.[18] In addition, we also test for the wellbeing variables in country level basis. The panel B of Table 3 shows the estimated coefficients of wellbeing variables (i.e. happiness, satisfaction of life, prohibit, fight). In each separate regression, wellbeing variables have a positive and highly significant impact on remittance flows. The positive coefficient on happiness is intuitive since as the average immigrant is happier in the country he is residing in, he is considering his bonds in the country of origin, therefore he is sending more money back home. The fight variable measures the relative patriotism between the sending and recipient countries. The coefficient is positive and significant indicating that immigrants living in more "patriotic" countries are sending more money back home. The possible alienation of immigrants in the host country might be reason for this positive coefficient. Prohibit measures how hard immigrants policies are in the sending country. So as the policies becomes harder it will be more difficult to send money back. We can measure it with negative significant coefficient in the Panel B. Again, the possible alienation of immigrants in the host country might be reason for this.

Table 4 contains the baseline regressions including each institutional quality variable separately for different income groups. The findings show that the effects of quality institutions are significant for only high-income countries. The results indicate that high-income immigrants tend to send less money when they live in a high income country with high quality institutions. To give an example; an immigrant from high income

[17] We control for the gravity equation variables in these regressions, but we only report the coefficients on institutional quality and wellbeing measures.

[18] As government, rule of law and individual rights are correlated with each other we drop rule of law and individual rights variables in the joint estimation.

country with low quality of institutions, say Italy, residing in a high income country with better quality of institutions, say Denmark, are sending less money back home. When we test those variables jointly, the Adjusted R^2 increases from 48 percent to 65 percent amongst high income countries, indicating how important the institutional quality variables are in explaining the remittance transfers. When we restrict the sample with sending county is a high-income country and the recipient country is low-income country, we find similar results (Column 2). However, in other sub samples, when sending country is a high income country and recipient country is a low-income country and vice versa, the quality institutions variables are not statistically significant. In particular, the results for transfers from high-income to low-income countries is interesting and intuitive. It appears that immigrants living in a better country have more important motives than quality of institutions in the home country. Altruism and family ties might overcome the institutional quality in this aspect.

The estimated wellbeing variables (happiness, satisfaction of life) are significant for almost every sub-sample group in Table 4. In addition, prohibit and fight variables are used to control for other wellbeing factors. The fight coefficient shows positive and significant impacts on remittances, thus higher patriotism in the sending country might alienate the immigrants more and therefore remit more. Harder immigrant policies in the sending country (lower prohibit index) may force immigrants to remit more for future investment back home, therefore higher returns from remittances. As expected the estimated prohibit coefficient is negative and significant in Table 3, but with different sub-sample groups of Table 4, only high-income country shows a negative and significant impact.

4.2 Individual-level analysis

Table 5 presents the OLS estimates using GSOEP data for the remittance flows on individual characteristics in Germany.[19] The finding indicates that marital status does not matter for the level of remittance flows. Household income is positively correlated with remittances. Unemployed migrants and migrants not in the labor force remit less than employed ones. Households with a male household head send more remittances than for female headed ones. Older people send more remittances than younger ones. Years of schooling is negatively correlated with the level of remittance flows. Number of adults, children, and employed people in Germany are negatively related to remittances. Thus, higher number of adults and children lead to lower levels of remittance sent to receiving countries. Also, fewer number of people employed in the households lead to lower levels of remittance flows. On the other hand, people with a spouse or children back at home remit more money. The relationship between the duration of stay in Germany and remittances is an inverted-U shape, i.e. as the years of duration increase so does the level of remittance flows but it declines as the migrants have lived in Germany for longer duration. Migrants from rural areas have a higher level of remittance flows. The estimated R^2 value is highest for remittances sent for family.

In the next step, the role of other individual characteristics are investigated on remittances sent (Table 6). Becoming a home owner decreases total remittances and all three form of remittances. People who think finding a similar job to the one they have send more money and this is significant even after controlling

[19]Model specification and independent variables are based on the study by Dustmann and Mestress (2009). Dependent variables are log total remittances, log remittances sent to the family, log remittances sent for savings purposes and other reasons.

fixed effects. Feeling German, cooking German food, and listening to German music negatively and strongly relates to remittances. These variables do not change much over time therefore fixed effects regressions is only significant for feeling German in explaining remittances sent for other reasons. Migrants who are more satisfied with their jobs send less money and this is significant even after controlling fixed effects. Annual doctor visits are negatively correlated with total remittances, for family reasons, and other reasons but do not change remittances for savings purposes. On the other hand, the fixed effects results show that having a life insurance leads to lower levels of remittance flows.

Table 7 presents the estimated results for investigating the relationship between remittances and the characteristics of receiving countries, based on the Euro-barometer data. Higher levels of happiness and peacefulness in the receiving country lead to a decline in remittances. Both the OLS and fixed effects estimates show the importance of religion and rightist political ideology in the receiving country reduces remittances sent from Germany. Next, in Table 9, we use OLS to evaluate the role of receiving country's characteristics on remittances sent from Germany. There is only one value for each country of origin in this specification. Happiness negatively correlates to low remittance flows. Moreover, confidence in the social security system and health care relates to decline in total remittances and family remittance flows. However migrants send more money when the confidence in the government in their home country is higher. Higher levels of life satisfaction and democracy in the home countries decrease the flow of remittances. In addition, higher level of trust in the home country also decreases remittances.

The chance of involvement in a war in the home country increases total remittances, remittances for family support and other purposes as well as for savings purposes. Political ideology, in terms of rightism, decreases remittances. Home countries with a good political system receive less remittances however improvement in the political system increases remittances. Table 8 shows that more corrupt countries receive lower levels of remittances, however home countries with more freedom and civil rights receive higher remittance flows from Germany. On the other hand, exchange rate volatility, interest rate, and bilateral trade flows in Germany contribute to remittances sent for savings purposes but do not explain any other purpose. Migrants remit more to their home country when differences in exchange rate declines. Higher interest rates in Germany decreases remittances sent for savings purposes. Increase in bilateral trade over time with the home country and Germany relates to higher amount of remittances sent for savings purposes and other purposes. These results suggest that migrant consider the financial variables when sending money for only savings purposes. However, they do care about the institutions instead when sending money back home for their families to support them. The results with respect to happiness might imply that money sent for family support is a way of transferring utility between household members living in different countries and as the wellbeing in the receiving and sending countries gets closer remittances decrease in response.

5 Conclusion

We analyze the determinants of bilateral remittance flows using cross-country and individual-level data. Our contribution is to explain how the quality of institutions, wellbeing, and culture in both sending and recipient

countries affect the amount of bilateral remittance flows. In the cross-country regressions our main variables of interest are found to be important factors in explaining the bilateral remittance flows in addition to the gravity equation variables. Sub-sample analysis provide very interesting results. Financial variables, i.e volatility of exchange rate differentials and interest rate differentials matter for the bilateral remittance flows between high income countries whereas those variables are statistically insignificant among low-income countries. However, culture and religion play more important role in explaining bilateral remittances between low-income countries. The quality of institutions in the sending country relative to the recipient country matters, and it's distinctive and significant in determining the remittance flows among high-income countries and among low-income countries. On the other hand, institutions can not predict remittances sent from high-income to low-income countries. Indeed, immigrants living in a richer sending country might have other motives such as altruism or strong family ties with the home country therefore they do not care much about the institutions of the home country when they have enough wealth accumulation. However immigrants residing in relatively poor countries consider the quality of institutions more when they decide to remit money back home. The significant results for the wellbeing variables indicate that as the sending country is happier relative to the recipient country the amount of remittance transfers between sending and recipient country increases.

The individual level GSOEP data also provide some key findings for our investigation. Immigrants who integrate into German life-style (dwelling owner, feel like German, listen German music, cook German food) remit less money back home. The higher living standards of happiness, peacefulness, religiosity motivates the immigrants to send less money. Institutional quality is important but the relationship between remittances and different aspects of institutions differ significantly. Corruption reduces remittance flows but freedom and civil rights of the receiving countries lead to positive impacts. Factors such as confidence in government, rightist political ideology, and improvement in political system in the country of origin motivate the immigrants to remit more money. Improvement in factors such as life satisfaction, democracy and confidence in social security system in the country of origin are crucial to improve the the amount of remittance flows. We also find that as the immigrants feel more alienated in the host country due to patriotism or immigration policies, they remit more.

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Table 1: **Baseline regressions for the cross-country data: Full sample**

Dependent variable: log (remittance per immigrant+1) i to j

	(1) OLS	(2) OLS	(3) IV	(4) IV
TRADE$_{ij}$	3.54	3.81	4.02	3.72
	(4.91)	(5.29)	(5.28)	(4.83)
DISTANCE$_{ij}$	−0.4	−0.60	0.79	0.37
	(−0.66)	(−2.01)	(1.21)	(1.37)
RGDP^{i-j}	2.51	2.37	1.32	1.52
	(12.55)	(10.77)	(4.44)	(5.46)
INTEREST RATE^{i-j}	−0.07	−0.07	−0.14	−0.14
	(0.51)	(0.54)	(4.67)	(4.81)
VOLEXCH^{i-j}	3.18	3.25	4.71	4.72
	(6.23)	(4.92)	(6.36)	(6.12)
CONTIGIOUS	7.16	6.44	7.17	6.53
	(6.98)	(6.51)	(8.74)	(6.91)
COMMON LANGUAGE	−3.47	−3.74	−3.82	−3.18
	(−3.54)	(−3.86)	(−4.19)	(−3.49)
BANK$_j$	−2.92	−3.51	−6.41	−6.88
	(−3.32)	(−3.85)	(−6.96)	(−6.523)
BRITISH$_{ij}$	−1.68	−0.74	−2.12	−1.21
	(−1.64)	(−0.73)	(−2.03)	(−1.31)
SPANISH$_{ij}$	−2.85	−2.01	−2.88	−2.21
	(−3.43)	(−2.42)	(−3.34)	(−2.32)
FRENCH$_{ij}$	0.41	0.43	0.32	0.33
	(0.57)	(0.93)	(0.79)	(4.51)
BUDHIST$_{nij}$		−2.65		−2.23
		(−3.89)		(−3.32)
CHRIST$_{nij}$		−1.23		−1.26
		(−2.15)		(−2.13)
MUSLIM$_{nij}$		2.42		3.12
		(2.57)		(3.31)
HINDU$_{nij}$		0.72		0.53
		(1.06)		(1.02)
ORTHODOX$_{nij}$		4.86		3.83
		(7.17)		(5.71)
CONFUC$_{nij}$		20.33		19.47
		(12.39)		(9.93)
CHRIST$_{\text{i}}$ MUSLIM$_{\text{j}}$		4.11		4.33
		(3.61)		(3.04)
SAMPLE	4175	4175	4175	4175
ADJ.R^2	0.49	0.52	0.48	0.52

Notes: Coefficients are multiplied by 100. t-statistics are in parenthesis. Column (1) and Column (2) contains the pooled OLS regressions. Column (3) and Column (4) contain the IV regressions. The dependent variable is Logarithm of the (Remittance per immigrant+1). For the IV specifications, we employ the lags of trade and interest rate differentials as instrumental variables. TRADE$_{ij}$ is the volume of trade (in logarithms) between the sending country (i) and the recipient country (j), averaged over the years between 2001 and 2005. DISTANCE$_{ij}$ is the distance between the sending country (i) and the recipient country (j) and in logarithms. RGDP^{i-j} and INTEREST RATE^{i-j} are the GDP per capita (in USD), and real interest rate differences between the sending and receiving country respectively. VOLEXCH^{i-j} is the volatility of the exchange rate differences between the sending and receiving country. CONTIGIOUS is a dummy variable which takes the value 1 when sending and recipient country shares a border, and 0 otherwise. COMMON LANGUAGE is a dummy taking the value 1 if the majority of sending and recipient country uses the same language, and 0 otherwise. BRITISH$_{ij}$, SPANISH$_{ij}$, and FRENCH$_{ij}$ are dummy variables and equal to 1 if both sending and recipient country has a British, Spanish or French colonial relationship in the past. BUDHIST$_{nij}$,CHRIST$_{nij}$,MUSLIM$_{nij}$, HINDU$_{nij}$,ORTHODOX$_{nij}$ and CONFUC$_{nij}$ are opposite religion dummies. For example, BUDHIST$_{nij}$ takes 1 when the population of the recipient country follows Buddhism and sending country's population does not. CHRIST$_{\text{i}}$ MUSLIM$_{\text{j}}$ is another binary variable and equals 1 when the sending country's population is the followers of Christianity and the recipient country's population is the follower of Islam. BANK$_j$ is an index created to measure how deep is the financial sector in the recipient country.

Table 2: **Baseline regressions with different sub-samples**

Dependent variable: log (remittance per immigrant+1) i to j

	(1)	(2)	(3)	(4)
Sending country	high income	high income	low income	low income
Receiving country	high income	low income	low income	high income
TRADE$_{ij}$	4.25	3.87	1.88	2.85
	(16.34)	(26.22)	(6.54)	(6.88)
DISTANCE$_{ij}$	−0.85	0.42	−4.20	−0.63
	(−1.62)	(0.78)	(−6.58)	(−0.53)
RGDP^{i-j}	−1.89	2.64	1.60	−6.82
	(−0.77)	(3.46)	(2.17)	(3.30)
INTEREST RATE^{i-j}	−0.80	−0.07	−0.02	−0.31
	(2.44)	(−2.99)	(−1.07)	(−2.37)
VOLEXCH^{i-j}	3.85	2.89	1.03	0.28
	(5.27)	(2.19)	(1.01)	(2.52)
CONTIGIOUS	4.68	3.48	4.36	
	(2.22)	(1.65)	(2.77)	
COMMON LANGUAGE	−2.16	−1.43	3.23	−2.69
	(−3.22)	(−1.96)	(2.23)	(−2.12)
BANK$_j$	2.72	−11.95	−8.62	8.39
	(1.01)	(−6.63)	(−3.68)	(1.35)
BRITISH$_{ij}$	−6.92	−0.51	4.38	−17.57
	(−2.63)	(−0.34)	(0.94)	(−4.21)
SPANISH$_{ij}$	0.93		−5.08	
	(0.21)		(−2.86)	
BUDHIST$_{nij}$	−6.04	−6.38	6.56	−3.36
	(−2.52)	(5.20)	(2.62)	(0.60)
CHRIST$_{nij}$	−4.56	−1.40	7.88	2.06
	(−2.76)	(1.35)	(4.54)	(0.93)
MUSLIM$_{nij}$	6.73	5.07	2.48	3.13
	(2.71)	(3.03)	(2.28)	(1.16)
HINDU$_{nij}$	−0.23	0.37		
	(−0.42)	(0.34)		
ORTHODOX$_{nij}$	10.93	2.19	2.25	−0.78
	(5.21)	(1.71)	(3.29)	(−0.26)
CONFUC$_{nij}$	15.79	25.42		
	(4.53)	(6.72)		
CHRIST$_{\text{i}}$ MUSLIM$_{\text{j}}$	6.14	5.16	4.30	6.55
	(3.30)	(3.70)	(3.87)	(2.05)
SAMPLE	720	1108	186	155
ADJ.R^2	0.48	0.56	0.71	0.62

Notes: Coefficients are multiplied by 100. t-statistics are in parenthesis. The dependent variable is Logarithm of the (remittance per immigrant+1). Each column corresponds baseline regressions using the sub-samples generated based on income levels of the sample countries. For example "High Income to High Income" refers to the sub-sample where both the sending and the recipient countries are high income countries. TRADE$_{ij}$ is the volume of trade (in logarithms) between (i) and (j), averaged over the years between 2001 and 2005. DISTANCE$_{ij}$ is the distance between between (i) and (j) and is in logarithms. RGDP^{i-j} and INTEREST RATE^{i-j} are GDP per capita (in USD) and real interest rate differences between the sending and receiving country respectively. VOLEXCH^{i-j} is the volatility of the exchange rate differences between (i) and (j). CONTIGIOUS is a dummy variable which takes the value 1 when sending and recipient country shares a border, and 0 otherwise. COMMON LANGUAGE is a dummy taking the value 1 if the majority of sending and recipient country uses the same language, and 0 otherwise. BRITISH$_{ij}$, SPANISH$_{ij}$, and FRENCH$_{ij}$ are dummy variables and equal to 1 if both sending and recipient country has a British, Spanish or French colonial relationship in the past. BUDHIST$_{nij}$,CHRIST$_{nij}$,MUSLIM$_{nij}$, HINDU$_{nij}$,ORTHODOX$_{nij}$ and CONFUC$_{nij}$ are opposite religion dummies. For example, BUDHIST$_{nij}$ takes 1 when the population of the recipient country follows Buddhism and sending country's population does not. CHRIST$_{\text{i}}$ MUSLIM$_{\text{j}}$ is another binary variable and equals 1 when the sending country's population is the followers of Christianity and the recipient country's population is the follower of Islam. BANK$_j$ is an index created to measure how deep is the financial sector in the recipient country.

Table 3: **Role of institutional quality and wellbeing: Full sample**

Dependent variable: log (remittance per immigrant+1) i to j

Panel A: Institutional quality	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CORRUPTION^{i-j}	−0.78						−0.71
	(−9.75)						(−8.88)
CIVIL RIGHTS^{i-j}		−0.47					−1.82
		(−3.61)					(−4.33)
FREEDOM^{i-j}			−3.37				−8.27
			(−7.48)				(−6.46)
GOVERNMENT^{i-j}				−1.49			
				(−2.29)			
INDIVIDUAL RIGHTS^{i-j}					−5.03		−1.09
					(−6.89)		(−7.26)
RULE OF LAW^{i-j}						−1.38	
						(−2.65)	
SAMPLE	3955	4175	4175	4175	4175	4175	4175
ADJ.R^2	0.53	0.52	0.53	0.52	0.52	0.52	0.56

Panel B: Wellbeing	(1)	(2)	(3)	(4)	(5)
HAPPINESS^{i-j}	10.44				13.89
	(7.44)				(9.26)
SATISFACTION OF LIFE^{i-j}		1.26			
		(3.23)			
FIGHT^{i-j}			10.60		5.18
			(3.24)		(2.24)
PROHIBIT^{i-j}				−5.38	−3.61
				(−3.77)	(−3.11)
SAMPLE	4175	4175	4175	4175	4175
ADJ.R^2	0.53	0.52	0.53	0.52	0.56

Notes: Coefficients are multiplied by 100. t-statistics are in parenthesis. The dependent variable is Logarithm of the (remittance per immigrant+1). Every row corresponds to a separate regression and each regression has the baseline equation variables as in Table 1 column(2). The quality of institution variables are the levels of institutional quality in the sending country relative to the recipient country. Wellbeing measures are the levels of wellbeing in the sending country relative to recipient country. The definitions of the variables are explained in the appendix.

Table 4: **Role of institutional quality and wellbeing: Sub-samples**

	(1)	(2)	(3)	(4)
Sending country	high income	high income	low income	low income
Receiving country	high income	low income	low income	high income
CORRUPTION^{i-j}	−1.33	−0.32	−0.63	−0.32
	(−7.01)	(−0.11)	(−5.02)	(−0.72)
CIVIL RIGHTS^{i-j}	−6.29	−0.24	−0.72	−0.81
	(−10.66)	(−0.81)	(−3.02)	(−0.79)
FREEDOM^{i-j}	−1.71	0.12	−1.12	−0.76
	(−3.22)	(0.66)	(−4.15)	(−1.24)
GOVERNMENT^{i-j}	−2.25	−0.21	−0.25	−0.71
	(−3.92)	(−0.10)	(−1.95)	(−1.86)
INDIVIDUAL RIGHTS^{i-j}	−1.90	−0.08	−0.22	−0.81
	(−1.80)	(−0.03)	(−2.25)	(−1.97)
RULE OF LAW^{i-j}	−1.16	−0.12	−0.24	−0.84
	(−3.74)	(−0.91)	(−1.91)	(−2.74)
HAPPINESS^{i-j}	49.71	12.22	3.92	2.48
	(7.53)	(1.81)	(2.68)	(1.83)
FIGHT^{i-j}	12.01	3.12	3.91	2.11
	(3.23)	(1.91)	(2.18)	(0.11)
PROHIBIT^{i-j}	−5.81	−2.12	1.43	−3.23
	(−3.12)	(−0.42)	(1.13)	(−0.43)
SATISFACTION OF LIFE^{i-j}	0.34	5.31	−12.81	4.91
	(0.26)	(3.23)	(−1.91)	(2.58)

Notes: Coefficients are multiplied by 100. t-statistics are in parenthesis. The dependent variable is Logarithm of the (remittance per immigrant+1). Every row corresponds to a separate regression and each regression has the baseline equation variables as in Table 1 column(2). The quality of institution variables are the levels of institutional quality in the sending country relative to the recipient country. Wellbeing measures are the levels of wellbeing in the sending country relative to recipient country. The definitions of the variables are explained in the appendix. Each column corresponds baseline regressions using the sub samples generated based on income levels of the sample countries. For example "high income to high income" refers to the sub-sample where both sending and recipient country are high income countries.

Table 5: **Baseline regressions for the GSOEP**

Probability to remit and log amount remitted-OLS

	total	family support	savings for later	other purposes
married head hh	0.020 (0.8)	-0.158 (0.6)	0.188 (1.0)	0.273 (1.5)
ln household income	5.854 (5.1)	4.487 (3.4)	0.573 (4.8	0.525 (4.5)
unemployed	-1.334 (6.4)	-1.178 (6.1)	-0.541 (4.1)	-0.467 (3.0)
not in the labor force	-1.567 (7.9)	-1.347 (6.9)	-0.507 (4.2)	-0.588 (4.5)
male head hh	1.015 (4.2)	0.848 (3.7)	0.437 (3.5)	0.476 (3.4)
age	0.041 (5.2)	0.039 (5.1)	0.020 (3.3)	0.019 (3.2)
years of education	-0.071 (1.9)	-0.061 (1.6)	-0.038 (1.5)	-0.015 (0.6)
number adults hh host	-0.225 (2.6)	-0.237 (2.8)	-0.179 (2.6)	-0.182 (2.4)
number children hh host	-0.142 (2.3)	-0.159 (2.6)	-0.140 (2.8)	-0.056 (1.1)
number employed hh host	-0.167 (3.0)	-0.226 (4.4)	0.025 (0.6)	0.051 (1.2)
spouse abroad	1.751 (5.3)	1.964 (5.8)	0.874 (2.3)	0.991 (2.4)
children abroad	1.833 (9.8)	2.050 (9.9)	0.968 (4.0)	0.897 (3.6)
years since migration	0.115 (2.2)	0.211 (2.3)	0.048 (1.3)	-0.021 (0.5)
years since migration^2	-0.004 (2.8)	-0.004 (3.0)	-0.002 (1.9)	-0.001 (0.1)
childhood residence:				
medium city	1.159 (4.8)	0.857 (3.5)	0.763 (4.0)	0.540 (3.0)
small city	0.858 (4.2)	0.644 (3.2)	0.596 (4.6)	0.364 (2.3)
countryside	0.891 (4.6)	0.680 (3.6)	0.617 (4.6)	0.409 (2.7)
region dummies	yes	yes	yes	yes
year dummies	yes	yes	yes	yes
country of origin dummies	yes	yes	yes	yes
adjusted r-squared	0.191	0.229	0.092	0.078
number of observations	6772	5766	4340	4503

Notes: We presents results using OLS. We also estimated tobit models and the results are similar. Dependent variable is the Logarithm (amount remitted+1). GSOEP data (1984-1990, 1992, 1994). Weighted regression using household weights. t-statistics are reported in parentheses. Standard errors are clustered by household heads.

Table 6: **Individual characteristics**

Probability to remit and log amount remitted

Specification	Total	Family support	Savings for later	Other purposes
OLS				
(1) dwelling owner	-1.292 (5.7)	-0.746 (3.6)	-0.760 (5.4)	-0.788 (5.4)
(2) probability to find similar job				
easy	0.200 (0.9)	-0.175 (0.8)	0.311 (1.7)	0.423 (2.2)
difficult	-0.020 (0.1)	-0.157 (0.9)	-0.039 (0.3)	0.098 (0.6)
(3) feel German	-0.134 (2.5)	-0.126 (2.4)	-0.103 (2.2)	-0.104 (2.3)
(4) cook German food	-0.284 (3.5)	-0.153 (2.0)	-0.128 (1.9)	-0.187 (2.5)
(5) listen German music	-0.095 (1.5)	-0.028 (0.5)	-0.132 (2.0)	-0.020 (0.3)
(6) job satisfaction	-0.047 (1.9)	-0.070 (2.6)	-0.001 (0.1)	-0.032 (1.5)
(7) annual doctor visits	0.004 (1.7)	0.003 (1.5)	0.002 (1.0)	0.001 (0.4)
(8) have life insurance	-0.0388 (3.7)	-0.438 (3.4)	-0.251 (2.6)	-0.023 (0.2)
INDIVIDUAL FE				
(9) dwelling owner	-0.828 (2.7)	-0.311 (1.2)	-0.618 (2.2)	-0.872 (2.7)
(10) probability to find similar job				
easy	0.560 (3.2)	0.171 (1.1)	0.475 (2.8)	0.502 (2.6)
difficult	0.218 (1.6)	0.117 (1.9)	0.241 (1.9)	0.192 (1.2)
(11) feel German	0.038 (0.8)	0.026 (0.6)	0.031 (0.7)	-0.085 (1.8)
(12) job satisfaction	-0.038 (1.7)	-0.038 (1.7)	-0.026 (1.1)	-0.051 (1.8)
(13) annual doctor visits	-0.003 (1.6)	-0.005 (2.9)	0.001 (0.2)	-0.003 (1.6)
(14) have life insurance	-0.025 (0.3)	-0.016 (0.2)	-0.178 (1.9)	-0.018 (0.2)

Notes: Every row corresponds to a separate regression and each regression has the control variables as in Table 5. We present results using OLS and individual fixed effects. We also estimated tobit models and the results are similar. Dependent variable is the Logarithm (amount remitted+1). GSOEP data (1984-1990, 1992, 1994). Weighted regression using household weights. t-statistics are reported in parentheses. Standard errors are clustered by household in the OLS specification. In specification (1), renter is the omitted category. In specification (2), almost impossible is the omitted category. In specification (3), the independent variables is the answer to the question: Irrespective of one's nationality one can have a sense of belonging to the country in which one lives? Which of the following applies in your case? (Foreigners only) 5 I feel totally German, 4 I feel more German than not, 3 I feel more German sometimes and more foreign at other times, 2 I feel mostly foreign, 1 I feel totally foreign. In specification (4), the independent variables is the answer to the question: How often do you eat your native food? 1 exclusively, 2 mostly, 3 some of both, 4 seldom, 5 never. In specification (5), the independent variables is the answer to the question: When you listen to music: how often do you listen to music from your native country? 1 exclusively, 2 mostly, 3 some of both, 4 seldom, 5 never. In specification (6), job satisfaction takes values 0-10.

Table 7: **Characteristics of the receiving countries from Euro-barometer**

Probability to remit and log amount remitted

Specification	Total	Family support	Savings for later	Other purposes
OLS				
(1) happiness	-1.870 (2.6)	-1.163 (1.9)	-1.633 (2.3)	-1.287 (1.7)
(2) peacefulness	-0.704 (3.0)	-0.420 (2.0)	-0.311 (1.8)	-0.198 (0.8)
(3) religiosity	-9.998 (1.9)	-4.925 (1.0)	-15.961 (3.1)	-3.154 (0.4)
(4) political ideology (rightist)	-0.609 (1.8)	-0.173 (0.6)	-0.722 (2.2)	-0.868 (2.4)
INDIVIDUAL FE				
(5) happiness	-1.621 (2.4)	-1.306 (2.2)	-1.214 (2.1)	-1.548 (2.1)
(6) peacefulness	-0.582 (2.7)	-0.450 (2.4)	-0.149 (0.8)	-0.243 (1.1)
(7) religiosity	-10.980 (2.1)	-7.295 (1.8)	-12.759 (2.6)	-2.744 (0.5)
(8) political ideology (rightist)	-0.592 (2.1)	-0.205 (0.8)	-0.529 (1.9)	-0.997 (3.0)

Notes: Every row corresponds to a separate regression and each regression has the control variables as in Table 5. We present results using OLS and individual fixed effects. We also estimated tobit models and the results are similar. The independent variables are the characteristics of country of origins for the immigrants living in Germany. Dependent variable is the Logarithm (amount remitted+1). GSOEP data (1984-1990, 1992, 1994). Weighted regression using household weights. t-statistics are reported in parentheses. Standard errors are clustered by household in the OLS specification. The independent variables are calculated from the Euro-barometer survey and the variables are explained in the data appendix in detail.

Table 8: **Macroeconomic conditions of the receiving countries**

Probability to remit and log amount remitted

Specification	Total	Family support	Savings for later	Other purposes
OLS				
(1) corruption	-0.449 (5.2)	-0.516 (6.1)	-0.114 (1.6)	-0.151 (2.1)
(2) freedom	0.279 (5.2)	0.282 (5.7)	0.091 (2.1)	0.120 (2.8)
(3) civil rights	0.470 (5.2)	0.480 (7.5)	0.181 (3.2)	0.176 (3.3)
INDIVIDUAL FE				
(4) exchange rate volatility (Germany-country of origin)	0.075 (1.2)	0.051 (1.0)	0.094 (1.6)	0.008 (0.1)
(5) German interest rate	-0.084 (1.0)	-0.010 (0.6)	-0.131 (2.1)	-0.076 (0.3)
(6) bilateral trade	0.343 (0.7)	-0.312 (0.7)	0.760 (2.1)	0.821 (1.9)

Notes: Every row corresponds to a separate regression and each regression has the control variables as in Table 5. We present results using OLS and individual fixed effects. We also estimated tobit models and the results are similar. The independent variables are the characteristics of country of origins for the immigrants living in Germany. Dependent variable is the Logarithm (amount remitted+1). GSOEP data (1984-1990, 1992, 1994). Weighted regression using household weights. t-statistics are reported in parentheses. Standard errors are clustered by household, and country dummies are not included in the OLS specification.

Table 9: **Characteristics of receiving countries from World Values Survey**

Probability to remit and log amount remitted-OLS

Specification	Total	Family support	Savings for later	Other purposes
(1) happiness	-0.688 (2.8)	-0.686 (2.7)	-0.103 (0.5)	-0.292 (1.5)
(2) confidence in social security system	-0.215 (0.7)	-0.489 (1.9)	-0.076 (0.3)	-0.017 (0.8)
(3) confidence in government	2.519 (2.6)	2.583 (2.3)	0.917 (1.1)	1.641 (2.0)
(4) confidence in health care system	-0.858 (2.3)	-1.311 (3.4)	-0.238 (0.8)	-0.024 (0.1)
(5) satisfaction with democracy	-0.603 (2.4)	-0.619 (2.5)	-0.095 (0.4)	-0.189 (0.9)
(6) prohibit immigration	-1.154 (3.0)	-1.448 (3.7)	-0.196 (0.6)	-0.087 (0.3)
(7) most people can be trusted	-0.034 (3.0)	-0.041 (3.6)	-0.006 (0.6)	-0.003 (0.3)
(8) chance of involvement in a war	9.844 (3.5)	7.161 (2.7)	3.557 (2.0)	5.099 (2.7)
(9) political ideology (rightist)	0.716 (2.7)	0.828 (3.1)	0.145 (0.6)	0.077 (0.3)
(9) good political system today	-0.299 (2.6)	-0.333 (3.0)	-0.051 (0.5)	-0.044 (0.5)
(10) political system improved	0.251 (1.6)	0.361 (2.1)	0.058 (0.4)	-0.145 (0.9)

Notes: Every row corresponds to a separate regression and each regression has the control variables as in Table 5. We present results using OLS. We also estimated tobit models and the results are similar. The independent variables are the characteristics of country of origins for the immigrants living in Germany. Dependent variable is the Logarithm (amount remitted+1). GSOEP data (1984-1990, 1992, 1994). Weighted regression using household weights. t-statistics are reported in parentheses. Standard errors are clustered by household and country of origin dummies are not included in the regressions. The independent variables are calculated from the world values survey and the variables are explained in the data appendix in detail.

6 Appendix

Appendix Table A1 **Descriptive statistics for macroeconomic variables**

	Obs	Mean	Standard Dev.	Min	Max
BANK$_j$	22244	0.69	0.19	0.23	1
BRITISH$_{ij}$	24734	0.26	0.43	0	1
BUDHIST$_{nij}$	24734	0.06	0.23	0	1
CHRIST$_{nij}$	24734	0.25	0.43	0	1
CHRIST$_{\text{i}}$ MUSLIM$_{\text{j}}$	24734	0.18	0.38	0	1
CIVIL RIGHTS^{i-j}	22476	−0.06	2.35	-5.9	6.9
COMMON COLONY	24734	0.01	0.11	0	1
COMMON LANGUAGE	24734	0.14	0.34	0	1
CONFUC$_{nij}$	24734	0.01	0.11	0	1
CONTIGIOUS	24734	0.01	0.12	0	1
CORRUPTION^{i-j}	22648	0.30	3.05	-8	7.8
DISTANCE$_{ij}$	24734	8.74	0.82	2.13	9.88
FIGHT^{i-j}	24734	−0.90	0.39	−1	1.31
FINANCIAL OPENNESS$_{i-j}$	21436	0.56	1.56	−1.83	2.54
FREEDOM^{i-j}	22797	−0.06	5.62	-14.30	14.44
FRENCH$_{ij}$	24734	0.15	0.35	0	1
GOVERNMENT^{i-j}	22797	0.04	5.03	–11.64	12
RGDP^{i-j}	23542	−0.24	1.00	-2.93	2.9
HAPPINESS^{i-j}	24734	−0.34	1.37	–1	3.11
HINDU$_{nij}$	24734	0.03	0.18	0	1
IMPORT^{i-j}	17918	1.79	2.32	0	12.93
INDIVIDUAL RIGHTS^{i-j}	22797	−0.08	5.24	-15.81	15.66
INTEREST RATE^{i-j}	18088	−1.28	17.27	-61.03	63.11
MUSLIM$_{nij}$	24734	0.02	0.40	0	1
REMITTANCE$_{ij}$	5728	0.11	0.15	0	0.72
TRADE$_{ij}$	17364	2.38	2.55	0	12.99
ORTHODOX$_{nij}$	24734	0.09	0.028	0	1
PROHIBIT^{i-j}	24734	−0.47	1.16	−1	2.71
RULE OF LAW^{i-j}	22797	0.09	6.28	−15.77	16
SATISFACTION OF LIFE^{i-j}	24734	0.26	2.69	−-1	16
SPANISH$_{ij}$	24734	0.12	0.32	0	1
VOLEXCH^{i-j}	23373	−0.09	0.29	−41.96	1.51

Notes: This table shows the summary statistics of the macroeconomic variables. The definitions of the variables are explained in detail in the text.

Appendix Table A2 **GSOEP: Descriptive statistics for the household heads**

Variable	mean	stdev
ln household income	7.2	0.49
age	43.2	11.2
own dwelling	8.2	0.02
rent dwelling	91.8	0.02
employed	82.3	0.02
unemployed	7.5	0.02
not in the labor force	10.2	0.03
male	87.8	0.02
female	12.2	0.02
years of education	9.4	1.95
children	1.1	1.21
adults	2.4	1.01
married	79.1	0.02
not married	20.9	0.02
employed hh	1.9	1.30
spouse abroad	6.1	0.01
spouse not abroad	93.9	0.01
children abroad	10.0	0.02
children not abroad	90.0	0.02
years since migration	19.1	5.94
childhood residence:		
large city	19.3	0.04
medium city	14.6	0.04
small city	25.5	0.05
countryside	40.6	0.05
number of observations	10144	
number of household heads	1802	

Notes: This table shows the summary statistics of the variables in the GSOEP for the years 1984-1990, 1992, 1994. Individual information corresponds to the head of household. Means are reported for the continuous variables and proportions are reported for categorical variables.

Appendix Table A3 **GSOEP: Descriptive statistics by country of origin**

country of origin	(1) sample ratio	(2) proportion sent money	(3) ln total money sent
East-Germany	2.5	8.6	7.37
Turkey	31.3	46.4	8.05
Yugoslavia	15.5	54.5	8.26
Greece	13.1	48.1	8.32
Italy	19.9	25.5	8.26
Spain	11.5	40.8	8.35
Austria	0.1	7.2	7.32
Bulgaria	0.3	46.5	7.87
Albania	0.2	73.7	8.61
Croatia	3.5	57.2	8.12
Bosnia	1.3	63.3	8.51
Macedonia	0.3	50.0	7.71
Slovenia	0.4	35.7	7.65

Notes: This table shows the summary statistics of the variables in the GSOEP for the years 1984-1990, 1992, 1994 by country of origin. Individual information corresponds to the head of household. Sample ratio is the percentage of the corresponding category in the whole sample. Proportion sent money is the percentage of the corresponding category who sent money back home. The third column shows the average of log total money sent for each row.

Appendix Table A4 **GSOEP: transition matrix for sending remittance**

	did not sent money	sent money
did not sent money	79.80	20.20
sent money	28.86	71.14
total	57.40	42.60

Notes: This table shows the transition matrix for whether the household have sent money back home in that year or not using the GSOEP for the years 1984-1990, 1992, 1994. Individual information corresponds to the head of household.

6.1 DATA APPENDIX

- REMITTANCE$_{ij}$: Remittance flows from source country (j) to home country(i) in millions USD dollars source: World Bank
- IMMIGRATION$_{ij}$: The number of the migrants living in country source(j) originated from home country (i). Source World Bank
- TRADE$_{ij}$: imports of goods by source countries from home countries (average 2001–2005). Source, International Monetary Fund, Direction of Trade Statistics.
- INTEREST RATE: Interest rates; averaged for the last five years (averaged 2001–2005). Source, International Monetary Fund, International Financial Statistics.
- DISTANCE: logarithm of great circle distance in miles between the capital cities of source and host country. Source:
- COMMON LANGUAGE: dummy taking the value of 1 if source and host country share a common language. Source:
- COLONY: dummy taking the value of 1 if source and host country ever had a colonial relationship.
- COMMON COLONY : dummy takes 1 if both countries have had a common colonizer. item COMMON COLONYY: takes 1 if both countries after 1945, have ever had a colonial link.
- CONTIGIOUS: dummy variable takes 1 if both receiving and sending country is sharing same borderline.

- RGDP: log of GDP per capita level in current US dollars. Averaged for years 2001-2005. Source: World Bank, World Development Indicators.
- FINANCIAL OPENNESS is an index for Financial openness. Source: Chinn and Ito (2007).
- CORRUPTION is an measures how corrupt a country is. Averaged between years 2001 and 2005. Source: Corruption and Perception Index Transperancy.org.
- FREEDOM is an index for expressing the beliefs prepared. Averaged for years 2001–2005. Source: Freedom house report.
- CIVIL RIGHTS is an index for civil rights. Averaged for years 2001–2005. Source: Freedom house report.
- RULE OF LAW is an index for measuring functioning of the law and rules in the corresponding country. Source:Freedom House reports
- HAPPINESS happy is an index measures "How happy are you" averaged for last 5 years or the data available period.
- SATISFACTION OF LIFE is an index measures life satisfaction averaged for last 5 years or the data available period.
- PROHIBITis an index measures immigrant policy.Averaged for last 5 years or the data available period.
- FIGHT is an index measures be willing to fight in war for your country. Averaged for last 5 years or the data available period.
- FRENCH_{ij} is a binary variable takes 1 if both sending and receiving countries are French colonies.
- SPANISH_{ij} is a binary variable takes 1 both sending and receiving countries are Spanish colonies.
- BRITISH_{ij} is a binary variable takes 1 if both sending and receiving countries are British colonies.
- BUDHIST is a binary variable takes 1 if at least 80 % total population of the corresponding country is Buddhist.
- CHRIST is a binary variable takes 1 if at least 80 % total population of the corresponding country is Christian.
- CONFUC is a binary variable takes 1 if at least 80 % total population of the corresponding country is Confucians.
- HINDU is a binary variable takes 1 if at least 80 % total population of the corresponding country is Hindu.
- MUSLIM is a binary variable takes 1 if at least 80 % total population of the corresponding country is Muslim.
- ORTHODOX is a binary variable takes 1 if at least 80 % total population of the corresponding country is Orthodox.
- VOLEXCH is the volatility of the exchange rate for the corresponding country. Source: IMF's IFS statistics.
- For the religion dummies, X_{nij} means that more than 80 % of the sending country's population is not from that religion (X) and at least 80 % of the receiving country's population is from religion(X). For example,BUDHIST_{nij} is a binary variable takes 1 if the sending country is not Buddhist, and receiving country is Buddhist.
- For some variables, X^{i-j} refers $X^i - X^j$. For example $\text{CIVIL RIGHTS}^{i-j}$ is equal to $\text{CIVIL RIGHTS}^i - \text{CIVIL RIGHTS}^j$.

Variables from the World Values Survey

A165.- Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?: 1 Most people can be trusted 2 Cant be too careful

A170. All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer? 1 Dissatisfied 2 3 4 5 6 7 8 9 10 Satisfied

E077. I am going to name a number of organisations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?
The Social security system: 4 A great deal 3 Quite a lot 2 Not very much 1 None at all

E079. I am going to name a number of organisations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?
The government: 4 A great deal 3 Quite a lot 2 Not very much 1 None at all

E084. I am going to name a number of organisations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?
The health care system: 4 A great deal 3 Quite a lot 2 Not very much 1 None at all

E110. On the whole are you very satisfied, rather satisfied, not very satisfied or not at all satisfied with the way democracy is developing in our country?: 4 Very satisfied 3 Rather satisfied 2 Not very satisfied 1 Not at all satisfied

E143. How about people from other countries coming here to work. Which one of the following do you think the government should do?: 4 Let anyone come 3 As long as jobs available 2 Strict limits 1 Prohibit people from coming

E013. How likely do you think it is that there will be another major war in which your country will be involved in the next five years?: 1 Not at all likely 2 3 4 5 6 7 8 9 10 Very likely

E033. In political matters, people talk of "the left" and "the right." How would you place your views on this scale, generally speaking?: 1 Left 2 3 4 5 6 7 8 9 10 Right

E111. People have different views about the system for governing this country. Here is a scale for rating how well things are going: 1 means very bad; 10 means very good.
Where on this scale would you put the political system as it is today?: 1 Bad 2 3 4 5 6 7 8 9 10 Very good

E112. People have different views about the system for governing this country. Here is a scale for rating how well things are going: 1 means very bad; 10 means very good. Where on this scale would you put the political system as it was?
[in former communist countries: under communist regime]
[in countries where recently a change of regime xx has taken place: under xx regime;]
[in countries where no regime change has taken place: ten years ago]
1 Bad 2 3 4 5 6 7 8 9 10 Very good

Variables from the Euro-barometer Survey

Satisfaction with life: 4 very satisfied 3 fairly satisfied 2 not very sat. 1 not at all sat.

Satisfaction with democracy: 4 very satisfied 3 fairly satisfied 2 not very sat. 1 not at all sat.

Happiness: 3 very happy 2 pretty happy 1 not too happy

Political discussion: 3 frequently 2 occasionally 1 never

Next year: Peaceful than now: 3 more peaceful 2 remains the same 1 more troubled

Religion: Important: 3 great importance 2 some importance 1 little importance

Left-Right self-placement: scale 1-10