

## **CAN GRAVITATIONAL FACTORS EXPLAIN REMITTANCES INFLOWS AND THEIR CYCLES: THE CASE OF ALBANIA**

**Manjola Tavanxhiu** 

“Aleksander Xhuvani” University, Elbasan, Albania

manjola.tavanxhiu@hotmail.com, manjola.tavanxhiu@uniel.edu.al

**Mimoza Agolli**

Institute of Regional Studies, Faculty of Economics

Christian Albrechts University, Kiel, Germany

### **Abstract**

*Remittances worldwide are estimated to be the second most important financial flow after international aid playing an increasingly large role in the development of the world economy. Via this paper we tried to construct macro level analyses on remittances inflows in Albania taking into account the gravitational forces as explanatory factors of remittances inflow in Albania. The models has made use of extensive literature on the gravity modeling and brings a variety of explanatory variables capturing the effect of “economic mass” and “distance” on remittances which include transaction costs and institutional aspect of the economic mass. The set of factors used in the model such as individual wealth (GDP per capita), financial sector development, deteriorating economic conditions of originating countries, perception of high corruption, low rule of law and low trust in governance in recipient country make evident that there is strong pressure for remittances to contract and decline.*

*Keywords: remittances, gravity, panel data, distance, economic mass*

### **INTRODUCTION**

Remittances worldwide are estimated to be the second most important financial flow after international aid. According to World Bank estimations, remittances totaled US\$ 583 billion in 2014. From the macroeconomic point of view, they are playing an increasingly large role in the development of the world economy.

In Albania, remittances have played an important role in recovering and developing the economy during the two first decades after the fall of Communism. During these years the country faced the transition from centralized planned economy to market regulated economy and therefore their beneficial effects are widely known. In 2014, based on (World Bank) Migration and Remittances prospect, Albania is ranked the 19th in the world rankings recipients' countries for remittances as a percentage of GDPs, amounting this value to 11 % of GDP. The total value of remittances sanded toward Albania during the same year was US\$ 422 million.

Albania also ranks among the countries with the highest percentage of the labor force, about one third of the whole population, living and working abroad. This workforce has played a very important role in supplying the country with foreign currency and stimulates the Albanian economy through remittances. Albanian migrants have a great predisposition sent remittances in their home country to support the families they've left behind. During the years, there have been many studies focused on the micro factors determinants of remittances. These studies are concerned with questions like "Why and how do emigrants remit". Regarding the determinants of remittances in the macro level, the situation is quite different because there is a lack of research that is mostly due to the lack of data in this area.

Via this paper we try to construct macro level analyses on remittances inflows in Albania taking into account the gravitational factors. The cycle of remittances that Albania experienced has proven the role of macroeconomic situation, in originating and receiving countries in defining remittances inflows. The distribution of remittances by country of origin clearly manifests the importance of gravitational pull in remitting. This research aims to estimate the role of gravitational factors in explaining flows and the cycles of remittances in Albania. The models has made use of extensive literature on the gravity modeling and brings a variety of variables in measuring the two building blocks of a gravity model "economic mass" and "distance" including transaction costs, institutional aspect of the economic mass, controlling for the simultaneous bias existing between migrant stock and remittances flows.

The main questions the paper gauges to answer looking at data can be summarized in three broad hypothesis, (i) to what degree flows of remittances are related and controlled by the number of emigrants, (ii) to what degree gravitational pull has been defining the inflows of remittances, (iii) have institutions, especially rule of law and financial sector development, corruption and public trust in governance been playing a role in defining cycles of remittances. The paper is structured in four parts. In the first one is presented an outline of the level of remittances in Albania through years. In the second one is reviewed the main literature that covered these field of study. In the third part are summarized theory and empirics of the gravity model. The focus here is on the explication of the main variables, measurement issues and

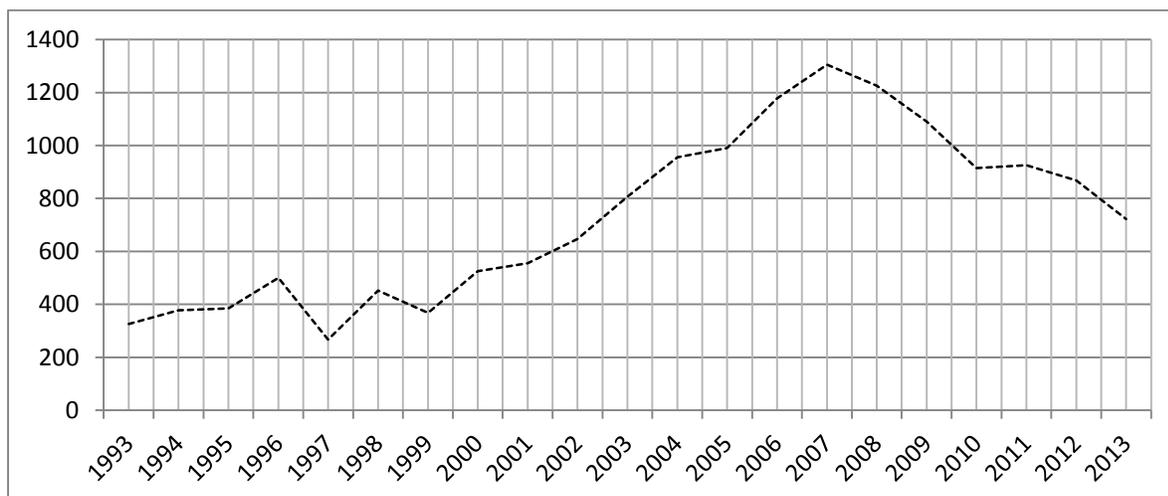
methodology applied. Results and discussed are presented in the fourth part of the paper, followed by a concluding remark.

### Remittances in Albania

After 1990, the emigration of Albanians abroad involved more than 25 percent of the population and it was immediate, rapid and explosive after a nearly 45-year system of closed borders of communism. The isolation and the forced lock down of borders, has attracted the attention of social researchers, in 1989 Aristide Zolberg, a renowned scholar of international migration, wrote that “ if the whole world would consist of Albania on the one hand and Japan on the other hand, one would not need to study international migration”. Only a year later, the situation of Albanian changed radically and a massive migration wave emerged after the fall of the existing regime and armed border control was abolished to a no border control policy. At that time, young population as well as regime dissident one migrated abroad, mainly in Greece, Italy and Germany, looking for the “wonderful” life. These workforces have played a very important role in supplying the country with a generous amount of capital in foreign currency which ensured sustainability of the Balance of Payment for a long time and supported the economic growth.

During the years, remittances kept a fast growing trend during the first decade of migration spells, with an exemption in 1997, when due to the political instability and abnormal conditions generated by the fall of pyramid schemes and revolts. After the first year of immigration many of emigrants were stabilized and started to help the families left behind through sending them remittances.

Figure. 1 Remittances through years (Million USD)



Source: Bank of Albania, Current Account, Migrant remittances, 2013

The pick of remitting capital inflows was recorded in 1996 mainly due to development of pyramid financial scheme attracted a lot of capital investments. Only after one year, their collapse caused an enormous loss of capital and increased the level risk and uncertainty, which was reflected in an abrupt decline of remittances inflows. In 1998 the situation improved slightly, but the memory and traces of instability, the weak state, weak rule of law and the conflict in Kosovo, (which started second during the second quarter of 1999) caused remittances to go through the second episode of contraction. The capital inflows improved after 2000. They also started to increase and kept their positive trend up to 2008, when they entered into a cycle of fast contracting, mainly related to the duration of the spell of migration, improved economic conditions in Albania and the economic downturn in the main hosting countries (Italy and Greece). The financial crisis which began in the U.S. in 2007, and expanded globally in 2008, caused an immediate decrease of remittances. The deterioration of the economic situation and the increased of unemployment everywhere, but particularly in Greece and Italy, caused a significant decrease of remittances entering our country. The not so good economic prospective in countries of destinations for Albanian migrants, mainly in Greece and Italy, cause a wave of migrants returning in 2011, where 30,000 persons were registered as returning migrants at the Labor and Migration offices and have become beneficiaries of social services. Projections of expected migrants to return home increased during 2012 and 2013. Currently, due to visa liberalization with EU, the delaying of the economy to enter into a recovering path, lost of citizens' trust to political and governing system have generated another wave of migrants toward European countries such as Germany, Belgium, Netherland and UK. It is clear from the way remittances emerged and the dynamics they followed that a mix of macro and micro factors has influenced them.

## LITERATURE REVIEW

Remittances are transfers of money by foreign workers to individuals in their home country. Now day's they are playing an increasingly large role in the economies of many countries, contributing to economic growth and to the livelihoods of less prosperous people. In 2014 according to the World Bank Report, more than 215 million people live outside their country of birth and over 700 million migrate; \$404 billion went to developing countries (a new record) with overall global remittances expected to total \$542 billion by 2016.

Money sent home by migrants competes with international aid as one of the largest financial inflows to developing countries. They are equivalent to more than three times the size of official development assistance. Their economic impact remains contested among researchers, however, remittances generally reduce the level and severity of poverty and lead

to: higher human capital accumulation; greater health and education expenditures; better access to information and communication technologies; improved access to formal financial sector services; enhanced small business investment; more entrepreneurship; better preparedness for adverse shocks such as droughts, earthquakes, and cyclones; reduced child labor, etc. Regarding remittances there are numerous studies and theories that explain and analyze their impacts in the countries of origin and in the host ones. There are theories that sometimes put them under a positive light and other time under a negative one. Below some of the most representatives theories considered as the pessimistic ones are summarized.

According to Rempel and Lobdell (1978), remittances have no significant contribution to rural development. The real development can be ensured only after the return of migrants to their country. According to Lucas (1982) and Izzard (1985), there is no evidence that remittances have an impact on reducing poverty in the Republic of Botswana. According to Stahl and Arnold (1986) and Stahl and Habib (1989) remittances are mainly used for consumption and their positive impact on the economy is due only to the increase of the marginal propensity to consume. Chami et al. (2003) argue that remittances create moral hazard problems in the home as family members abroad are more likely to send money home when the situation worsens. Another negative effect of remittances is known as the phenomenon of “ghost town “. The result is that if the flows of remittances decrease significantly or suddenly, these economies face great difficulties which in some cases can either disintegrate the economies (Carrasco and Ro 2007). Even more problematic the situation appears when the persons living the country are the qualified employees in whom the country has invested (Richard and Adams 2003. In the studies of Rivera and Batiz (1982), immigration reduces the population and consumption in the country and as a result it reduces the possibility to make trade within the country. For this reason, it is concluded that there is some evidence of “Dutch Disease “in terms of remittances in their host countries. The loss of competitiveness in international trade as a result of evaluation of local currency that makes certain sectors of the economy not to take that development can take in case of lack of remittances

Optimistic theories of migration tend to see it as one of the most essential elements and key instruments to promote the development of countries of origin and especially to recover economies in difficulties. From studies made in this field, in terms of the benefits of immigration and comparing them with other benefits resulting the following: benefits from the elimination of all trade barriers on movement of goods are estimated to be between 1.8 % (Goldin et al. 1993) and 2.8 % (World Bank, 2001 ) of world GDP . Similarly, the corresponding estimates from the removal of all obstacles to the free movement of capital are between 0.1 % (Caselli and Feyrer, 2007) and 1.7 % (Gourinichas and Jeanne, 2006) of world GDP. In sharp contrast, gains from

the removal of barriers in terms of free movement and employment of people are quite higher than the previous ones. Total welfare is estimated by 122 % (Klein and Ventura, 2009) to 147 % (Hamilton and Whaley, 1984) of world GDP. Other optimistic theories regarding migration tend to see its impact on the overall global economy. One of them implies that migration affects growth of productivity and output. In its outlook, migration causes the displacement of labor from low wage countries to countries with higher salary. Taking into consideration the fact that higher wages implies higher marginal production; it contributes to increase the overall worldwide output. (Krugman and Obstfeld, 1991). Migration has also a big impact on the public sector too. There is a wider debate regarding whether the income that the state receives from them in the form of taxes or not greater than the costs that the state does for them. Smith and Edmonston (1997) from studies undertaken in the United States of America conclude that the net effect is positive for the state budget.

Migration and remittances in Albania have been under scrutiny of researchers because of their dynamics and their contribution to the economy and social problems. Kule et al. (2000) argued that the main reason driving migration after the fall of the regime was the economic one. In addition to that, extreme poverty, lack of employment, social problems or political turbulences such as those during the fall of pyramid schemes or the War of Kosovo were some other causes of migratory waves (see World Bank 2006; Hernández Coss et al, 2006; Uruçi and Gedeshi 2003). The main destination of migrant became Italy and Greece, the two neighboring countries of the EU, and somewhat Germany for those more informed and with more capital resources to support migration. Many Albanians did also follow their “American dream” and migrated in Trans oceanic locations such as Canada and US.

Despite being a sort of anecdote saying, it is somehow true, that there is no country in those ranked as developed ones that one cannot find Albanian emigrants. Some of the factors that have influenced individuals selecting the destination of their migration include geographical proximity, cultural and linguistic acquaintance, information from TV/family/friends, access to legal system to ensure formalization of their migration and possibility to have close family members joining the male household head.

The determinants of remittances are divided into microeconomic and macroeconomic ones. The role of micro factors in explaining the creation of remittances and their flow between countries through the network of family ties and investment incentives has been largely explored for Albania (see World Bank 2006; Hernández Coss et al, 2006; Uruçi and Gedeshi 200 ). In an effort to study the factors that motivate Albanian migrants to remit, studies have been numerous.

In their paper Gedeshi and Uruci (2000) concluded that more than half of immigrants interviewed, responded to the question “why do they remit” by choosing the main reason that of a moral obligations. The same conclusion is reached from IAMO 2010 too. According to King and Vullnetari 2010, partly based on the patriarchal structure of Albanian society, they concluded that men are better remitters than women. This of course is supported by the fact that this genre has greater opportunities for employment and higher wages. At the micro level remittances also play a very important role in improving the lives of families who receive them. Most of them used mainly for basic family needs, to provide a place for housing and furnishing it (Uruci and Gedeshi 2004).

While microeconomic determinants rotate to the question “Why and how do emigrants remit”, empirical macroeconomic papers usually focus on the number of workers, wage rates and economic situation in host country, economic situation in country or origin, the exchange rates and relative interest rate between the sending and receiving country and political risk and facilities to transfer funds. At the macro level, remittances are an important source of the current account. Often they constitute a considerable amount as well as foreign direct investment (FDI). For this reason, the impact of remittances on poverty and economic development is the subject of many studies. Although there are disagreements and contradictions between the results of different studies, it is generally thought that remittances have positive effects on the economy of recipient countries. Increasing the level of demand for goods and services is one of the effects of remittances (Agenda Institute 2011). According to, World Bank (2010), in Albania, the sectors of economy affected the most by remittances were construction and services. In our country, these sectors are an important driver of domestic demand.

World Bank studies show that a 10 percent reduction in remittances will result in a reduction of 3.6 per cent of the domestic demand (World Bank 2010). Remittances are used mainly for primary needs and have a mutual relationship with the level of education of senders and recipients (De Sousa, Duval et al, 2009). Remittances are mostly spent on food, 73.8 % (Agenda Institute 2011). Regarding effect of remittances on the level of education, Castle found in his study that in Albania the members of families receiving remittances have greater chances to disrupt education after high school, especially in rural areas (Castle 2010).

## **GRAVITY MODEL: THEORY AND EMPIRICS**

This paper tries to explain how remittances are affected by structural characteristics and macroeconomic conditions in both source and recipient economies. To achieve the intended purpose, empirical analyses are used. The information utilized is organized in a panel dataset covering bilateral remittances from several source Countries to Albania, over the period 2005-

2012. More specifically, this paper makes one main contribution to the literature. The availability of bilateral data for Albania makes it possible to analyze systematically the influence of the originating countries economic conditions on the recipient economy (which is Albanian economy).

The model replicated in this paper is based on a classical gravity model. Gravity models are used in various social sciences to predict and describe certain behaviors that mimic gravitational interaction as described in Isaac Newton's law of gravity in 1687 (Head 2003). In its simplest form, the gravity model analogously to Newton law of gravitation, states that economic interaction between two countries is proportional to countries economic mass and inversely proportional to the distance between them (Head, 2003). The model is represented in equation 1, and estimated in a linearized form.

$$X_{i,j} = A \frac{Y_i^{\alpha_1} Y_j^{\alpha_2}}{D_{i,j}^{\alpha_3}} \quad (1)$$

In economics this model is known for its simplicity and success in explaining international trade flows (Tinbergen 1962). The critics that gravity model represents an artificial instrument not related to any trade theory were relaxed with extension of trade theories to include increasing return to scale assumption and diversity as part of consumers utility function. The theoretical foundations of the gravity equation can be found in Anderson (1979), Deardorff (1984) and Andersen (2011). The model has been used to study impacts of many (probably of all) trade agreements, currency unions, FDI and migration flows as well. The application of gravity model to explain remittances is not heavily used due to the difficulty of having reliable disaggregated data by countries (receiving and originating). Although not large measure, in recent years, the gravity model is used to determine the main factors affecting the level of remittances sent by migrants. Until now these studies have been limited and the main reason for this lay in the lack of data on bilateral remittance flows. In a paper of their own, Lüeth and Ruiz-Arranz (2006), for the first time, assessed a gravity model for shipments using a broad database of bilateral data.

The data was obtained from 11 countries in Asia and Europe that break down their remittance receipts by country of origin and spans the period 1980–2004. The dataset consists of about 200 country pairings and nearly 1,650 observations. 2008. In their conclusions, 50 percent of the variation in bilateral remittance flows can be explained by a few gravity variables such as partner countries' GDP, distance, shared border, and common language. With key macroeconomic variables (inflation, growth, exchange rate, trade) and variables capturing transaction costs (financial sector development, dual exchange rates, and current account

restrictions) added to the set of explanatory variables, more than 70 percent of the variation in remittances can be explained.

Based on Frankel (2011), the creation of a larger bilateral data set by splicing together three used by a few others, has allowed a moderately strong verdict on the question of cyclicity, which runs contrary to the analogy with capital flows and the Dutch Disease. Remittances do appear to respond positively to the cyclical position in the sending country (the migrant's host) and negatively to the cyclical position in the receiving country (the migrant's place of origin). This counter-cyclical pattern is precisely what one wants. It suggests that emigrants' remittances can play some of the stabilizing role that capital flows often promise but seldom deliver. If this empirical finding holds up under further investigation, it carries at least two specific policy implications. First, it sheds light – though only indirectly, perhaps – on plans by some governments to try to harness remittances in the name of national development, rather than allowing private citizens to transact freely in this area. Remittance behavior is not subject to the political economy forces that make government spending pro-cyclical in so many developing countries. Second, it suggests that remittances should join trade, labor mobility, and transfers, on the list of Optimum Currency Area criteria. Bettin et al. 2014, in their paper examines how international remittances are affected by structural characteristics, macroeconomic conditions, and adverse shocks in both source and recipient economies. They have exploit a novel, rich panel data set, and covering bilateral remittances from 103 Italian provinces to 107 developing countries over the period 2005-2011. They found that remittances are negatively correlated with the business cycle in recipient countries, and increase in response to adverse exogenous shocks, such as natural disasters or large declines in the terms of trade. Remittances are positively correlated with economic conditions in the source province. Nevertheless, in the presence of similar negative shocks to both source and recipient economies, remittances remain counter-cyclical with respect to the recipient country.

In this paper, to model remittances we have used this classical framework as a starting point (as a baseline), assuming that bilateral remittances are proportional to the economic mass of source and recipient country and disproportional to distance between countries as distance increases the cost of transferring remittances back home.

$$REM_{sr,t} = A \frac{(GDP_{sending,t} * GDP_{recipient,t})^{\alpha_1}}{D_{sr}^{\alpha_2}} Z_{sr,t} \quad (2)$$

The set of control variables included in the estimations (Z) can be classified in two main categories two main categories, variables helping to capture aspects of economic mass and

variables capturing elements of distance on remittances (measured to represent transaction costs).

By taking the natural logs of equation 2, we can estimate the following empirical specification:

$$\ln(\text{REM}_{ij,t}) = \alpha_0 + \alpha_1 \ln(\text{GDP}_{s,t}) + \alpha_2 \ln(\text{GDP}_{r,t}) + \alpha_{13} \ln(\text{DIST}_{sr}) + \alpha_1 \ln(\text{MigStock}_{sr,t}) + \mu_s + \epsilon_{sr,t} \quad (3)$$

The baseline estimations will also be complemented by an augmented gravity equation. The baseline model provides evidence on the degree that flow of remittances is explained by (i) the stock of emigrants, (ii) gravitational pull factors (GDP and distance). The augmented gravity equation (equation 4) will provide evidence on how specific aspect of the economic mass and distance (included in the Z component) such as development of the financial sector, political stability, governance accountability, corruption index and common border.

$$\ln(\text{REM}_{ij,t}) = \alpha_0 + \alpha_1 \ln(\text{GDP}_{s,t}) + \alpha_2 \ln(\text{GDP}_{r,t}) + \alpha_{13} \ln(\text{DIST}_{sr}) + \alpha_1 \ln(\text{MigStock}_{sr,t}) + \sum_{k=1}^k \alpha_k Z_{k,SR,t} + \mu_s + \epsilon_{sr,t} \quad (4)$$

We have estimated the gravity model (equation 3/4) for explaining bilateral remittances between Albania and a set of 14 main sending countries for a time span of 6 years, 2006-2012. Countries included in the analyses represent 90% of the total remittances.

### **Variables definitions, source of data and expected influence on remittances**

The GDP at purchasing power and GDP per capita of the source country, in millions of US dollars are extracted from IMF/IFS database and included (in logs) in the analyses. In classical gravity model GDP and GDP per capita do represent a direct measure of the economic mass. Higher economic mass (GDP or GDP per Capita) represents a better prospective for the emigrant's economic conditions (employability and income), hence influencing positively the ability to remit back home. We expect a significant positive influence of the economic activity in the source countries on remittances.

The second explaining factor is the income level (measured in term of GDP per capita) in the recipient country. The empirical evidence on recipient country income level on remittances flow is ambiguous. There are studies that have found positive influence of income level at recipient country on remittances flows if motives generating remittances relate to portfolio investment. If motivational reasons of remitting are altruistic, more remittances flow in

a country if prospect of income in receipt countries deteriorates. More remittances are sent in order to ensure more equitable distribution of wealth within a family context (between those migrating and those left behind).

Bilateral trade flows (import and export) were also included in the analyses, as a measure of the intensity of bilateral economic exchange between countries. Higher intensity of economic exchanges higher the expected flow of remittances (Lueth and Ruiz-Arranz 2006).

Migrant stock in a country of origin is also part of the mass variable in a gravity model, important in determining the remittances volume (Freund and Spatafora, 2005). The data on the stock of emigrants were generated from the dataset of "Prospect and Immigration", World Bank. The stock of emigrants is calculated as a net figure, including existing emigrants at year t, adding new emigrant at year t and subtracting returnees (at year t). We expect a higher stock of emigrants at country i, would increase the amount of remittances flow.

Table 1: Definition of the variables, source of data and descriptive Statistics

Variables	Mean	Std. Dev.	Definition and data source
$\text{Log}(\text{Remittances}_{\text{country of origin } i \text{ to Albania}, t})$	0.837	.901	Bilateral Remittances in Million USD, World Bank and Bank of Albania (BP).
$\text{log}(\text{GDP}_{i,t})$	2323.6	3634.07	Gross Domestic Product ( at PPP, in Mio USD), IFS database
$\text{log}(\text{CGDP}_{i,t})$	4.633	0.1063	GDP per capita (country i, time t), IFS database
$\text{log}(\text{CGDP}_{\text{Albania}, t})$	3.613	0.0299	GDP per capita, Albania, Bank of Albania
$\text{log}(\text{Distance}_{\text{Albania}, \text{country } i})$	3.288	0.424	Geographic Distance (capital city distance) (CEPII database)
$\text{log}(\text{Stock of Emigrants}_{i,t})$	0.872	0.915	Stock of Albanian Emigrants in country i (existing emigrants + new emigrants-returning emigrants) World bank
$\text{Log}(\text{Imports}_{\text{country of origin } i \text{ to Albania}, t})$	0.8545	0.909	Bilateral Imports, ACIT Trade Report
$\text{Log}(\text{Exports}_{\text{Albania to country } i, t})$	1.478	1.026	Bilateral Exports, ACIT Trade Report
$\text{Log}(\text{Private Credit}_{\text{country } i, t})$	2.048	1.4401	Private Credit to GDP, for each country
Accountability Index	0.966	1.048	Governance Accountability Index, WDI
Political Stability	0.748	0.0597	Political Stability Index, WDI
Government Effectiveness	0.920	0.131	World Wide Governance Indicator, World Bank
Regulatory Quality	0.895	0.140	World Wide Governance Indicator, World Bank
Rule of Law	0.870	0.096	Rule of Law Index, WDI
Corruption Perception	0.710	0.157	Corruption Index, WDI
Common Border	0.143	0.352	A constructed Dummy variable on countries sharing borders

In some strand of literature, studying remittances flows with respect to macro environment, some variables that represent price differentials factor are included, such as exchange rate or interest rate differential. We have not included these variables in the estimations. The data cover a short time period (around 6 years) while prices become a factor mostly in the long run prospective. Albania is also a very small economy and price taker from the world market, as such the differential component, would not have played a role in short run.

Political and governance indicators are included in the model, reflecting the strong influence that these factors have displayed in emigrants decision to remit home. Episodes of political instability, lack of trust in governance as well as high corruption we expect to play a barrier in remitting and discourage them, at least those remittances that flow as a result of investment motives due to increase of the uncertainty in return from investment. An important part of remittances in Albania are linked to altruistic motives, and these parts of remittances we expect them to increase with worsen indicators of governance and political situation. Some ambiguity exists on the expected sign of these indicators on remittances.

The second block of variables included describes the effect of transaction costs in remitting. The geographic distance is included in the model (in logs) as a proxy of transaction costs. Gibson et al. (2006) identified a high sensitivity of remittances to the cost of sending them home. Distance is measured as the geographical distance of Tirana, the capital of Albania, to the corresponding capital country where remittances originate, in km. The distance measure is taken from CEPII database. The rationality of gravity and other empirical evidence show remittances and distance are inversely related, with increasing distance, increasing transaction costs and reducing incentives to remit, at least through formal channels of transferring funds. (Lueth and Ruiz- Arranz 2008; Frankel, 2011; Docquier et.al 2011)

In similar studies on remittances flows one also finds studies reporting insignificance of distance in remitting, differently from trade research. (Schiopu and Siegfried, 2006) If transaction costs are compared with distance data, they appear more complex and not exclusively determined by the distance.

The insignificance of the distance on influencing remittances is somewhat influenced by the fact that distance is not the same as transaction costs when remitting. In order to improve the way we account for the transaction costs common border and common language with countries from which remittances originate is included in the model as a dummy variable. Transaction costs, at least for those remittances using formal channel of transmitting, are closely related to the financial sector development. We have used a simple financial deepening measure, the ratio of private credit to GDP, to account for the influence of financial sector on cost of remitting. A higher ratio of private credit to GDP reflects an efficient and developed

financial system which ensures access and lower transaction costs if compared to countries where financial deepening measure is low.

Common border and common language variables were also constructed, to identify the effect of common land border or common language in reducing barriers of exchange between countries and as a result transaction costs, improving remittances flow. At final estimations, only common border variable was used, because common border and common language resulted in co linearity among both variables.

## ANALYSIS AND RESULTS

Estimation is performed using panel data method, since we have cross section and time variability. In the presence of such correlation pooled OLS estimation are biased (Hsiao, 2003 and Wooldridge, 2002). Panel data is a method of estimations that takes into account unobservable heterogeneity related to cross sections and time variation which are estimated through fixed or random effect estimations.

The core difference between fixed and random effect lies on the way country specific effect is presented, in a fixed effect model country specific effects are part of the intercept, assuming the same slope and variance across individuals. The fixed effect was estimated through two different methods the within estimations and least square dummy variables. A random effect model assumes individual effect is not correlated with the variables of the model and then is estimated as a random parameter ( $\mu_s$ ) part of the error term. The random effect is estimated using feasible generalized least square method (FGLS) and maximum likelihood estimations. Fixed effect model fit is tested by the F-test; random effect model is tested by a Lagrange Multiplier Test, while a Hausman test is used to compare random vs. fixed effect. The panel database used for this study is balanced and estimations were performed using STATA programming. The model, both baseline and augmented one, have a good fit and are statistically significant as tested by F-test and  $\chi^2$  statistic. The Hausman test shows that random effect fits to the data better (see table 2 and table 3).

The pool of countries that Albania gets remittances falls mainly within the European area, with few exemptions (Canada and US emigrants who sent remittances home). This fact influences the importance distance plays as a determinant of remittances inflows. The remittances flows also suffer from a high concentration in only two countries, Greece and Italy, a fact that is manifested in the strong effect of common border and stock of emigrants. The baseline results, confirm the fact that few variables, economic mass, migrant stock and distance are able to explain quite a large share of variation on remittances. Most of remittances flowing in

country are related to altruistic reasons, as confirmed by the negative effect of the receiving country GDP (Albania's GDP).

Table 2: Base line estimation results, Log Remittances dependent variable

Variables	Random Effect	Random Effect
	FGLS estimations	ML estimations
$\log(\text{GDP}_{i,t})$	0.000029** (1.61)	0.000028* (1.45)
$\log(\text{CGDP}_{\text{Albania},t})$	-0.68*** (-5.59)	-0.68*** (-5.70)
$\log(\text{Distance}_{\text{Albania},\text{country } i})$	-0.306* (-1.58)	-0.29* (-1.76)
$\log(\text{Stock of Emigrants}_{i,t})$	0.771*** (9.2)	0.79*** (9.5)
<b>Constant Term</b>	3.87*** (4.45)	3.82*** (4.75)
$\mu$	0.279	0.249
$\epsilon$	0.0705	0.071
<b>R-Square</b>	0.92	
<b>Adj. R-Square</b>	0.917	
$\chi^2$ statistic (Random Effect)	137.51***	179.55***
<b>Haussmann Test (FE vs. Random Effect)</b>		6.29
<b>Ho: difference in coefficients not systematic)</b>		(0.16)
<b>Random Effect is the best fit</b>		

The remittances have been a support to families left behind, rather than a diversification of investments for the emigrants, and if economic situation in the recipient country and families' economic conditions improve remittances are expected to contract. Similar studies performed for developing countries (Ahmed and Martinez-Zarzoso) have found evidence that remittances react predominantly to the macroeconomic factors of the receiving-end rather than the sending countries, our findings also converge to similar behavioral patterns of remittances flow. The distance between country of origin and country of destination of remittances as well as stock of migrants strongly influences the flow of remittances, with evidences that goes in line with the findings in literature and other empirical research. Increasing the distance between the countries decreases remittances, more emigrants reside at a country higher the flow of remittances.

An augmented model was run, despite good results on the baseline model, with the aim of identifying characteristics of the “economic mass” and “distance” that help understanding the remittances behavior and micro factors affecting them. Goodness of fit statistic R-squared and adjusted R-squared are high, meaning there is a good fit of the model to the data, however we can observe that the constant term and errors capture variation from unobservable variables, which we want to explore.

Table 3: Augmented gravity model random effect estimation results,  
Log Remittances dependent variable

Variable	Random Effect (FGLS)	Random Effect (ML estimations)
$\log(\text{GDP}_{i,t})$	.00005*** (3.31)	.00005*** (2.44)
$\log(\text{CGDP}_{i,t})$	-.8235*** (-3.19)	-.1039 (-0.44)
$\log(\text{GDP}_{\text{Albania},t})$	-1.0316*** (-2.19)	-.9247*** (-3.91)
$\log(\text{CGDP}_{\text{Albania},t})$	1.1422 (1.32)	.9169** (1.92)
$\log(\text{Distance}_{\text{Albania, country } i})$	-.1401* (-1.98)	-.0835 (-0.50)
$\log(\text{Stock of Emigrants}_{i,t})$	.4443*** (5.16)	.4899 *** (4.55)
$\text{Log}(\text{Exports}_{\text{Albania to country } i,t})$	.0796*** (2.12)	.01422 (0.76)
$\text{Log}(\text{Imports}_{\text{country of origin } i \text{ to Albania},t})$	.1017 *** (2.43)	-.0630** (-1.86)
$\text{Log}(\text{Private Credit}_{\text{country } i,t})$	-.1559*** (-3.29)	-.0091 (-0.24)
<b>Accountability Index</b>	-1.1219 (-1.48)	-.7838 (-0.83)
	.1598 (0.36)	.1469 (0.62)
<b>GE</b>	.9783 *** (3.14)	.5443 (0.87)
<b>RQ</b>	.1839 (1.03)	.0664 (0.70)

<b>Rule of Law</b>	.1472 (0.40)	.2604 (0.47)
<b>Corruption Perception</b>	-.1059*** (-3.79)	-.1286 (-1.65)
<b>Common Border</b>	1.6228*** (6.70)	1.3274*** (3.86)
<b>Constant Term</b>	2.6037 (1.24)	1.5593 (1.13)
<b>R-Squared</b>		
<b>Adj. R-Square</b>		
<b><math>\chi^2</math> statistic (Random Effect)</b>		

\*\*\* - 5% level of statistical confidence  
t-statistics are included in the brackets

Remittances are strongly linked at a micro prospective with the welfare of the individual and the left behind family. This fact explains the differences that one observes if GDP per capita in the originating country and receiving country is included as a measure of individuals' welfare in the model. The empirical results show that if emigrants experience an increasing wealth in the hosting country, less money they will send in the home countries as remittances.

The influence of receiving economy on remittances also relates to political and economic stability as well as business environment. The political and economic stability would influence the decision to send home remittances as part of diversifying risks and portfolio of investment for an emigrant savings. If emigrant perceive a high political risk, with economic transactions suffering from corrupted practices and corrupted governance, the flow of remittances would be contracted, and the results manifest a significant effect of economic, governance and political environment. Stronger rule of law, effective and transparent government and more stable political environment do attract more remittances. A perceived high level of corruption or low level of accountability would cause remittances flows to contract, as showed by the results.

The effect of individual wealth on receiving country appears positive and significant, in contrary with the influence of economic mass on the remittances. If individual wealth increases this attracts more remittances, and this is a sign of the remittances flowing back home not as an alternative to poverty for supporting consumption, but rather as a measures of family support to investments either in education or supporting any family businesses. This suggests that migrants tend to send more remittances when the economic situation of families back home improves.

The interaction of economic mass as augmented by the trade flows as a percentage of GDP, positively affects remittances flows, stronger economic exchange among countries higher the flow of remittances, mainly to due lowering the barriers of economic exchange and transactions' costs. Measures of transaction costs for sending remittances home were also modeled through a set of additional variables such as a common border and financial deepening alongside distance between countries.

Sharing a common border contributes to increasing remittances strongly, mainly following the concentration of Albanian emigrants in two border neighboring countries Italy and Greece, cultural proximity and intensive economic exchange. The role of financial deepening on remittances flows appears not robust, and negative. Most of remittances sent home are done not through the financial sector but rather sent to families during family visits or through friend and visitors, as they are low values. Financial deepening, measured as a private credit to GDP, if it increases also manifests existence of alternative financial resources, which probably substitute remittances flows, especially those dedicated to investments such as real estate or business set up. As such even if increasing private credit to GDP means a more efficient financial sector which lowers transaction costs of transfer, this is not transmitted in more remittances.

## **CONCLUDING REMARKS**

Remittances worldwide are estimated to be the second most important financial flow after international aid playing an increasingly large role in the development of the world economy Their economic impact remains contested among researchers, however, remittances generally reduce the level and severity of poverty and lead to higher human capital accumulation, greater health and education expenditures, better access to information and communication technologies and better preparedness for adverse households shocks. At the macro level, remittances are an important source of the current account. Often they constitute a considerable amount as well as foreign direct investment (FDI). For this reason, the impact of remittances on poverty and economic development is the subject of many studies. Although there are disagreements and contradictions between the results of different studies, it is generally thought that remittances have positive effects on the economy of recipient countries

This paper tries to explain how remittances are affected by structural characteristics and macroeconomic conditions in both source and recipient economies, by making use of a panel dataset covering bilateral remittances from several source countries to Albania, over the period 2005-2012. The model replicated in this paper is based on a classical gravity model. Gravity

models are used in various social sciences to predict and describe certain behaviors that mimic gravitational interaction.

The main questions the paper gauges to answer looking at data can be summarized in three broad hypothesis, (i) to what degree flows of remittances are related and controlled by the number of emigrants, (ii) to what degree gravitational pull has been defining the inflows of remittances, (iii) have institutions, especially rule of law and financial sector development, corruption and public trust in governance been playing a role in defining cycles of remittances.

The variables included in the model are GDP and GDP per capita, bilateral economic exchange and migrant stock between countries, distance and financial sector deepening as well as some variables measuring political and economic situations of countries.

The pool of countries that Albania gets remittances falls mainly within the European area, with few exemptions (Canada and US emigrants who sent remittances home). This fact influences the importance distance plays as a determinant of remittances inflows. The remittances flows also suffer from a high concentration in only two countries, Greece and Italy, a fact that is manifested in the strong effect of common border and stock of emigrants. The baseline results, confirm the fact that few variables, economic mass, migrant stock and distance are able to explain quite a large share of variation on remittances. The remittances have been a support to families left behind, rather than a diversification of investments for the emigrants, and if economic situation in the recipient country and families' economic conditions improve remittances are expected to contract.

An augmented model was run, despite good results on the baseline model, with the aim of identifying characteristics of the “economic mass” and “distance” that help understanding the remittances behavior and micro factors affecting them. The empirical results show that if emigrants experience an increasing wealth in the hosting country, less money they will send in the home countries as remittances. The political and economic stability would influence the decision to send home remittances as part of diversifying investment portfolio. A perceived high level of corruption or low level of accountability would cause remittances flows to contract, as showed by the results. Sharing a common border contributes to increasing remittances strongly, financial deepening affects remittances negatively mainly because it captures the existence of alternative financial resources at better access which acts as a substitute of remittances.

The set of factors used in the model such as individual wealth (GDP per capita), financial sector development, deteriorating economic conditions of originating countries, perception of high corruption, low rule of law and low trust in governance in recipient country make evident that there is strong pressure for remittances to contract and decline.

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