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Determinants and Implications of Remittances in Albania and Romania

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The wiiw Balkan Observatory

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Determinants and Implications of Remittances in Albania and Romania

The wiiw Balkan Observatory

www.balkan-observatory.net

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The GDN–SEE programme is financed by the Global Development Network, the Austrian Ministry of Finance and the Jubiläumsfonds der Oesterreichischen Nationalbank.

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Determinants and Implications of Remittances in Albania and Romania

Prepared by José de Sousa[1], Laetita Duval[2] and François-Charles Wolff[3], with Ana Bleahu[4] and Rodica Calmuc[5]

May 2009

Introduction and overview

Since the beginning of the 1990's, emigration represents a significant phenomenon in Southeast Europe (SEE).[6] Remittances, the money sent home by migrants, are one of the most visible consequences of emigration.[7] According to the World Bank (2008), remittances are rapidly increasing from $119 billion in 1997 to $317 billion in 2007. The proportion of remittances to developing countries is also increasing, from 60% in 1997 ($71 billion) to 75% in 2007 ($240 billion). Four East European countries are among the world's main recipients of remittances as percentage of gross domestic product (GDP), namely Albania, Armenia, Bosnia and Herzegovina, and Moldova.[8] Even if the question of the impact of remittances on

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[6] Southeast Europe refers here to nine countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, Macedonia, Montenegro, Romania and Serbia.

[7] We use the expressions « labor-sending country » / « labor-receiving country » for international migration, and « source country » / « recipient country » for international remittances.

[8] In Albania, for instance, remittances exceed a quarter of GDP in 2006. However, in nominal terms, the biggest developing countries are the main recipients of remittances, such as India, Mexico and China. Moreover, note that these data only reflect remittances through official channels. The World Bank suggests that remittances sent through informal channels could add at least 50% to the official estimate.

recipient countries growth is still open, remittances represent an important source of external financing. They exceed international aid flows and, for some countries, the volume of foreign direct investments (Ratha, 2005).

Despite their importance, few works have been devoted to the study of remittance determinants in the SEE context. The aim of this research is to offer an empirical estimate of the determinants of remittances on SEE countries at *macro* and *micro*-level and to investigate their impact on the economic situation of the receiving households. Lastly, this research, in line with the recommendations of the international economic institutions, offers an overall picture of remittances' determinants. This picture will allow to understand better their impact on development and to devise appropriate economic policies to attract this source of financing.

This report contains two parts. The first part is devoted to the macroeconomics of remittances and the second part to the microeconomics of remittances.

The first part of this report analyses the motives of remittances. We reconsider this question to take account of recent shifting patterns of migration. Current international migration differs from past immigrations (Freeman, 2006). Among the most salient factors, we observe (i) that traditional immigrant source countries have become immigrant-receiving countries and (ii) that immigration policies of destination countries are increasingly tilted toward the most skilled individuals (Faini, 2007). Thus, between 1990 and 2000, the OECD stock of skilled immigrants coming from developing countries increased approximately by a factor 2 (Docquier and Marfouk, 2006). An obvious question is whether this brain drain may be compensated by larger remittances of skilled immigrants.

For this purpose, we have created an original dataset of bilateral remittances between SEE countries and their main sending countries. First, we exploit a new and original data set of the National Bank of Romania (NBR). This dataset identifies Romanian bilateral aggregate remittances coming from its principal emigration countries. Romania is, for various reasons, a relevant recipient country. It represents a new country of emigration, highlighting the recent shifting patterns of migration. Moreover, Romania is attracting a growing amount of remittances, which represents almost 50% of FDI inflows and constitutes an important external source of financing. Using this dataset, we find that the macroeconomic motives of remittances in Romania are in line with the *loan repayment hypothesis*. Remittances are

considered as implicit loan repayments taken out by emigrants to support migration and education costs. Thus, we find that education and geographic distance positively influence remittances. These results imply first that liquidity constraints matter and second that highly educated migrants may compensate for the brain drain effect. We also find evidence that immigration policies and migrant networks affect remittances.

Second, to complement this study and check the robustness of our results, we build a larger dataset for the purpose of this report. This dataset relies on three different sources: from the National Bank of Romania (see above), from the National Bank of Albania and from the National Bank of Italy (more details in the Appendix of Part 1). Using this dataset, we confirm the role of the *loan repayment hypothesis*.

The second part of the report identifies the microeconomic motives of remittances and their implications for the household recipients. For this issue, we have access to the World Bank's household surveys in Albania, so-called Living Standards Measurement Study (LSMS). Albania is a very relevant case, since remittances are a crucial source of income for households (Mansoor and Quillin, 2006). We use the longitudinal data collected over the period 2002-2004, which allow us to account for unobserved heterogeneity at the individual level when investigating the determinants of the transfers. An additional feature of the data set is that we can construct a matched sample using the 2003 wave, with characteristics on both the adult children and their parents living in Albania. Two sets of results emerge from this microeconomic study.

The first set of results concerns the motives of remittances. Our econometric analysis draw on random and fixed effects discrete choice models to study both the determinants of remittances sent by family members and adult children living abroad and their implications on the living standard of the recipients. The main conclusions are as follows. First, the proportion of households living in Albania and receiving remittances is large (more than 20%) and these transfers are mainly devoted to basic needs. Secondly, transfers are negatively correlated with both the donor's and the recipient's level of education, which casts doubt on the loan repayment model. At the same time, many individual characteristics turn out to be insignificant in the transfer equation and remittances do not really depend on the current situation of the recipient. Finally, transfers from abroad have a positive impact on economic indicators like satisfaction with current situation, adequateness of food consumption and

number of affordable expenditures. This finding is robust to the correction of selection either on observables or unobservables.

As shown by simple descriptive statistics on self-reported motives, these different results suggest that a mix of altruism and exchange is certainly at hand when explaining the pattern of remittances in Albania. On the one hand, altruism is more likely when respondents are in a needy position and use the transfers they receive for basic needs and to improve their current level of consumption. On the other hand, part of the money transferred to Albania households is also invested and sending money to those left behind is a good way for migrants to improve their own situation (along with those of their family) in the event of a return.

The second set of results relates to the role of remittances on income expectations. While economic theories assign a central role to income expectations, empirical evidence on this issue remains rather scarce, especially in the context of less developed countries where household income is usually subject to more uncertainty. We find several interesting results.

First, expectations on financial situation in Albania are not only affected by the current level of income, but also by past changes in income. Secondly, the composition of household income matters. We find that the receipt of remittances has a positive influence on the subjective appreciation of households about their future financial situation. Thirdly, when comparing realized changes and income expectations over the same time period, we evidence that Albanian households do not have rational expectations. Those whose income has fallen in the past have a larger propensity of underestimation, while those whose income has increased have a larger propensity of overestimation. Finally, respondents receiving transfers from foreign countries tend to slightly overestimate their future financial situation.

As they stand, our results have strong macroeconomic implications. From an empirical viewpoint, it would be of interest to further analyze the complex interplay between economic growth in Albania and the fact that households are on average optimistic about their future financial situation. Also, the role of remittances and their positive effects on well-being deserve further attention. Recipients may for instance be more optimistic about their future because migrants will have more skills and abilities when coming back in Albania or because remittances are invested in local activities and will generate additional resources for the households. All these issues are left for future research.

Outline of the report

Part 1. The motives of remittances. Evidence from aggregate bilateral data

1.1. Introduction
1.2. Theoretical issues
1.3. Bilateral remittances data
1.4. Empirical model
1.5. Results
1.6. Conclusion
1.7. References (Part 1)
1.8. Appendix

Part 2. The microeconomic motives of remittances and their implications

2.1. Remittances and transfer motives

2.1.1. Introduction

2.1.2. The LSMS Albanian data

2.1.3. The pattern of remittances in Albania

2.1.4. The motives for remittances

2.1.5. Conclusion

2.2. Remittances and financial situation

2.2.1. The effect of remittances on the recipient's financial situation

2.2.2. Income expectations: Do remittances matter?

2.3. References (Part 2)

Keywords: Southeast Europe**,** remittances, bilateral data, panel data, subjective information. **JEL Classification**: F24, I32, J61, O15.

Part 1. The motives of remittances. Evidence from aggregate bilateral data

1.1. Introduction

Funds that international migrants send back to their country of origin are rapidly increasing from $101 billion in 1995 to $232 billion in 2005 (World Bank, 2006), *i.e.* more that 100% of increase. In contrast, the number of international migrants has risen from 150 to 200 million people, a one-third increase[9]. Even if the question of the impact of remittances on recipient countries growth is still open, remittances represent an important source of external financing. They exceed international aid flows and, for some countries, the volume of foreign direct investments (Ratha, 2005).

In this first part of the report, we analyze the macroeconomic determinants of international remittances. We reconsider this old question[10] first to take account of recent shifting patterns of migration and second to try to discriminate among alternative theories of remittances. Current international migration differs from past mass migration (Freeman, 2006). Among the most salient factors, we observe (i) that traditional immigrant-source countries have become immigrant-receiving countries and (ii) that immigration policies are increasingly tilted toward the most skilled individuals (Faini, 2007). Thus, between 1990 and 2000, the OECD stock of skilled immigrants coming from developing countries raised approximately by a factor 2 (Docquier, Lohest and Marfouk, 2007a). An obvious question is whether this brain drain may be compensated by larger remittances of skilled immigrants. Theory is ambiguous in its prediction of the effect of education on remittances (Rapoport and Docquier, 2006). In the altruistic model (Becker, 1974; Stark, 1995), the migrant cares about the well-being of family members' stayed at home. Education has no effect *per se* once we control for the higher earning it allows. In the exchange theory (Bernheim, Shleifer and Summers, 1985; Cox, 1987), the migrant makes transfers in return for services. Educated immigrants are assumed to

[9] Note that measuring remittance and migration flows is a difficult task and the official data miss the bulk of informal flows. Concerning remittances, the World Bank considers that unrecorded flows, through informal channels, could amount to at least 50 percent of recorded flows.

[10] See for instance Swamy (1981), Straubhaar (1986), Elbadawi and Rocha (1992), El Sakka and McNabb (1999) or Vargas-Silva and Huang (2005).

have lower propensities to return and remittances are a decreasing function of education. In the family loan arrangement model (Cox and Jimenez, 1992; Poirine, 1997), remittances mainly consist of implicit loan repayments taken out by emigrants to support the migration cost or to achieve a better education. More educated migrants should remit more, even after controlling for the positive correlation of income and education. The theoretical ambiguity of education and remittances motivates our empirical work. Thus, even if remittances are driven by mixed motives, the migrant's education may empirically discriminate among alternative theories.

To reconsider the question of the remittance determinants, we create an original dataset of bilateral remittances between Southeast Europe (SEE) countries and their main sending countries.[11] SEE is, for various reasons, a relevant recipient region. It represents a new region of emigration, highlighting the recent shifting patterns of migration. Moreover, SEE is attracting a growing amount of remittances, which constitutes an important external source of financing.[12]

Despite its aggregated nature, the SEE's data set offers several advantages. First, macroeconomic data reflect the underlying microeconomic decisions about remittances and avoid a potential shortcoming of survey questionnaires: if asked about the motives behind remittances, most responders may not emphasize a strategic motive or a particular familial arrangement to pay back an exchange or a loan.[13] Second, such data allow working on the bilateral corridors of remittances to understand better their impact on development and to devise appropriate attractive policies. Finally, the bilateral breakdown helps to capture the effects of dyadic factors on remittances and to implement a new discriminative test. “If one admits that altruism is solvable in distance” (Rapoport and Docquier, 2006), increasing distance to family should decrease remittances from remote labor-receiving countries. In the other hand, in the loan repayment hypothesis, an increasing geographic distance between the labor-receiving and the labor-sending countries may imply a higher migration cost supported by the family and in return a higher flow of remittances. Along with the migrant's education,

[11] Recent papers, done independently and concurrently to ours, such as Lueth and Ruiz-Arranz (2006) and Schiopu and Siegfried (2006), make also efforts to develop and use data sets of bilateral remittances. We review their contribution in section 3.

[12] For instance, the amount of remittances received by Romania, between 1995 and 2005, was multiplied by approximately 15, according to the World Bank.

[13] Poirine (1997) mentions that “it is likely that [remitters] would seldom admit openly to acting in […] a calculating manner”.

the bilateral geographic distance may help to discriminate among alternative theories of remittances.

This part makes several contributions to the existing literature. We find, in line with the loan repayment hypothesis, that distance and education positively influence remittances. This result implies that liquidity constraints matter and that highly educated migrants may compensate for the drain of skilled migrants. Beyond this discriminatory test, we confirm the positive influence of migrant networks on remittances. Such networks increase migration, which raises remittances. This result holds even if we deal with its potential simultaneity by using an instrumental variable estimator. Finally, we identify different effects on remittances according to different types of immigration policies.

The remainder of this part is organized as follows. In section 2, we briefly discuss theoretical issues to derive remarkable theoretical predictions. In section 3, we present our bilateral remittances data set. In section 4, we design our empirical model. Results are exposed in section 5. Finally, we conclude in section 6.

1.2. Theoretical issues

Rapoport and Docquier (2006) provide an excellent review of the recent theoretical and empirical economic literature on migrants' remittances. They classify the different motivations to remit in two categories: *individual* and *familial arrangements*. We briefly review these two categories and point out some remarkable theoretical predictions.

1.2.1. Individual motives

One of the most intuitive motivation to remit is altruism (Becker, 1974; Stark, 1995). Immigrants care of those left behind. The altruistic model derives some interesting predictions. Remittances increase with the migrant's income but decrease with the migrant's family income, the duration of migration and the distance from family. However, remittances are not only determined by altruism, but also by economic reasons (Lucas and Stark, 1985). Another major individual motivation is the exchange motive (Bernheim, Shleifer, Summers, 1985; Cox, 1987): the migrant makes transfers in return for services provided by family members or third persons such as taking care of the migrant's assets and/or relatives. In that hypothesis, the likelihood and size of remittances depend on the migrant's intention to return. As a result, remittances are a decreasing function of education, since educated migrants are

supposed to have lower propensities to return (Rapoport and Docquier, 2006). Beyond altruism and exchange, concern for inheritance is another individualistic motive to remit (de la Brière *et al.*, 2002). Remittances may raise the probability to inherit. In this framework, remittances are assumed to be an increasing function of the migrant's income and a decreasing function of the migrant's remoteness.

1.2.2. Familial arrangements motives

The decision to remit cannot be understood only as an individual decision. Migration and remittances are parts of an informal familial arrangement. In this respect, remittances may be better explained by family arrangements than individual considerations.

First, migration and the associated remittance flows may be modeled as an insurance contract (Lucas and Stark, 1985; Rosenzweig, 1988). The family operates as an insurance company which protects its members against shocks. Thus, remittance flows allow to diversify the sources of income. Second, remittances may be seen as loan repayments. Under this hypothesis, the family works as an internal and informal financial market. It pays the cost of emigration and/or investments in education of young family members (Cox and Jimenez, 1992; Poirine, 1997; Ilahi and Jafarey, 1999). Thus, the migrant becomes a borrower and sends back remittances to reimburse her family. The family loan arrangements model derives some testable and remarkable predictions.[14] The higher are the migration and education costs supported by the family, the higher are the remittances. Consequently, remittances *increase* with the migrant's education level and the distance from family.

Among the family arrangements models, the loan repayment hypothesis seems the most relevant for our study. The insurance hypothesis is a better working assumption for the least developed countries where political, economic, social and environmental instability is strong. In this context, remittances may alleviate poverty.[15] By contrast, Romania and Bulgaria have recently joined the European Union (EU) and cannot be considered as a least developed country. Moreover, the loan repayment hypothesis is in line with the most recent migratory

[14] The loan repayment motivation is also known as the investment motive. This expression may introduce some confusion since it has been used also to denote remittances governed by portfolio considerations (see *e.g.* Lueth and Ruiz-Arranz, 2006) or by inheritance considerations (see *e.g.* de la Brière *et al.*, 2002).

[15] See for instance Hoddinott (1994) for Kenya; Cox, Eser, Jimenez (1998) for Peru, or Azam and Gubert (2005) for Mali.

trends: large cost of international migration, importance of diaspora, drain of skilled migrants and costly human capital investments.

Our aim is to discriminate among the alternative theories of remittances described above. We have notably remarkable predictions concerning education and distance. However, we keep in mind that "a combination of different motives applies […]. It is not only that different individuals may be heterogeneous in their motivations to remit but also that different motivations to remit may coexist within the same individual" (Rapoport and Docquier, 2006).

1.3. Bilateral remittances data

Bilateral data of remittances have been collected from central banks and come specifically from three different sources. The *first* source of bilateral remittances comes from the National Bank of Romania (NBR). Data are collected via (i) banks reports for amounts received in banks accounts, (ii) reports of the money transfer companies such as Western Union and Money Gram and (iii) reports of the National Post Office for amounts sent via postal orders.[16] We identify recorded flows to Romania from 17 source countries: Austria, Belgium, Canada, Cyprus, France, Germany, Greece, Ireland, Israel, Italy, the Netherlands, Portugal, Spain, Switzerland, Turkey, the United Kingdom and the United States. Data are on a quarterly frequency and we cover 2005, 2006 and 2007. Before 2005, only global information on remittances is available. It should be noted that for Cyprus, we cover 2005 and 2007. For Israel, we cover 2005, 2006 and the two quarters of 2007. For Turkey, we cover 2005. Thus, we get a potential of 190 observations.

The *second* source of bilateral remittances comes from the National Bank of Albania (NBA). We identify recorded flows to Albania from 17 source countries: Argentina, Australia, Austria, Belgium, Canada, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Italy, the Netherlands, Norway, Saudi Arabia, Switzerland, the United Kingdom and the United States. Data are on a quarterly frequency and we cover 2006. Thus, we get 68 observations.

The *third* source of bilateral remittances comes from the National Bank of Italy (NBI), which is one of the main sending countries of the SEE. We identify recorded flows from Italy to Bulgaria (2005, 2006 and the first two quarters of 2007), to Serbia (the first two quarters of 2007) and to Romania (1997 to 2006 and the first two quarters of 2007). Data are on a

[16] In addition, the NBR estimates that around 40 percent of remittances are coming through informal channels.

monthly frequency, but for the purpose of the study, we convert the monthly data on a quarterly basis. Thus, we get 54 observations.

For the empirical analysis, we use three different separate samples. We first work exclusively on bilateral remittances from the National Bank of Romania (190 observations). Second, we work on the bilateral remittances from the National Bank of Albania (68 observations). Finally, we use all the available bilateral remittances data from the above three sources: NBR, NBA and NBI. However, we drop the bilateral relationship Italy-Romania from the NBR in 2005, 2006 and 2007 to avoid data redundancy. So, we get a potential of 300 observations (= 178 + 68 + 54). Aggregating the data allows to draw more general conclusions. On the downside, the aggregation does not account for the fact that the methods of collecting data are quite heterogeneous (see below).

Data constraints are relatively strong in the literature on bilateral remittances. The large majority of papers does not identify the sending country. To circumvent such data constraints, some researchers derive bilateral remittance flows indirectly by using bilateral migration data (Harisson, Britton and Swanson, 2004; Ratha and Shaw, 2007). This method allows quantifying the remittance phenomenon but is inappropriate for an econometric treatment. As far as we know, Straubhaar (1986), Lianos (1997) and Karafolas (1998) are among the first studies using observed bilateral data.[17] These studies are stimulating, but Karafolas (1998) neglects the principal determinants of remittances,[18] while Straubhaar (1986) and Lianos (1997) are based on a tiny number of bilateral relationships.[19]

Two recent papers done independently and concurrently to ours work on large samples of bilateral remittances. First, Lueth and Ruiz-Arranz (2006) use a sample of 11 destination countries. Each one has recorded flows from about 16 source countries and different period of time. They estimate a gravity model for remittance flows and find that economic size (source and recipient countries GDP) and transaction costs (distance, common language or common

[17] To approximate bilateral flows, another strand of the literature uses total remittance flows of a given country and compute average characteristics of its main emigration countries to derive a bilateral analysis (see *e.g.* Elbadawi and Rocha, 1992; El Sakka and McNabb, 1999).

[18] Using data on Greece and Portugal, Karafolas (1998) shows that the presence of banks of the emigration country in the recipient country positively influences the volume of bilateral remittances.

[19] Lianos (1997) works on two different samples: a first sample of 31 remittance flows from Germany (1961-1991) to Greece and a second sample of 23 remittance flows from Belgium (1981-1991) and Sweden (1980-1991) to Greece. Straubhaar (1986) uses a time series of 19 remittance flows from Germany to Turkey, during the period 1963-1982.

border) explain more that 50 percent of their variation. However, the gravity equation is originally theoretically derived to model trade flows and it is not clear why transaction costs matter so much for remittances originating from a developed country. Transaction costs are not usually an issue for large remittances (Hernandez-Coss, 2006) and are not an increasing function of geographical distance, the commonly used proxy for bilateral transaction costs. For instance, to transfer $200 to the USA banks charge $17 from Colombia for a capital-to-capital distance of 3,845 kms, $3 from Mexico for 3,038 kms, and $1.8 to $4 from Philippines for 13,794 kms. Thus, the cost of sending remittances seems unrelated to the geographical distance but "determined by the level of competition, relative size of the remittances volume and reflects the limited expansion of the financial sector in developing countries, particularly among the poor" (Hernandez-Coss, 2006). [20] As a result, the use of the trade gravity model seems not fully suitable for explaining remittances.[21] Second, Schiopu and Siegfried (2006) work on a sample of 21 Western European remitters and 7 European neighboring receivers, over the period 2000-2005. They investigate the role of altruistic and investment portfolio motives. They find evidence for altruism on the belief that the difference in GDP between the recipient and source countries increases bilateral remittances. We may wonder, however, if such a difference is a good indicator to capture altruism motives.

Using large samples of observations introduces more variability on remittance patterns and allows for more general results. On the downside, remittances are recorded in a very different ways among the given destination countries and this heterogeneity undermines the scope of the results. Working on a more homogeneous sample of recipient countries reduces the size of the sample but avoids the previous shortcoming. Flows are recorded in a more homogeneous way.

[20] Ratha and Shaw (2007) raise a similar point. They find evidence for higher remittance costs between developing countries. They also find that the cost of remitting 200$ from a developed country to a developing country is significantly much lower than the cost of remitting the same amount in the opposite way.

[21] Moreover, one of the main insights from the trade theory is that bilateral trade depends on relative trade barriers, *i.e.* on the average trade resistance between a country and its trading partners (Anderson and van Wincoop, 2003). Such a mechanism appears irrelevant to explain bilateral remittances.

1.4. Empirical model

We now present our empirical model which enables us to discriminate among alternative theories of remittances. Based on the most recent empirical literature, our specification is designed as follows:

Bilateral Remittances = *f* (migrant's education; bilateral distance; bilateral factors; labor-receiving factors; labor-sending factors),

where the *Bilateral Remittances* variable represents bilateral flows of remittances that Southeastern immigrants send back home.

Migrant's education and bilateral distance

Migrant's Education is the average education level of migrants in a given source country of remittances. *Bilateral Distance* is the geographic distance between capital of the source and recipient countries. In line with the loan repayment hypothesis, we expect a positive sign for both education and distance elasticities.

We also control for various observable factors of the source country of remittances [(1) economic size, (2) exchange rate, (3) unemployment rate and (4) immigration policy] and the recipient country of remittances [(5) economic size and (6) political stability]. Let us first briefly review the evidence on these four groups of control variables.

Labor-receiving country factors

(1) Economic size. Empirical literature is unanimous on the effect of the economic size of the labor-receiving country on remittances. The aggregate income of the labor-receiving country (i.e. the source country of remittances) positively influences the volume of remittances sent abroad (see among others Swamy, 1981; Elbadawi and Rocha, 1992). These results are consistent with the patterns displayed using simple descriptive statistics. According to the World Bank, the United States is the main sending countries in 2004 with 39 billion dollars (Ratha, 2005). However, the aggregate income, proxied by GDP, mixes the income of natives and immigrants. Ideally, we would like to assess, for instance, only the aggregate income effect of the Romanian immigrants on remittances to Romania. However, data for such an ideal are unavoidable. To mitigate this problem we control additionally for the stock of Romanian immigrants in the labor-receiving country. Thus, remittances sent by country *i* to country *j* are positively related to the income of country *i* and the number of country *j*'s

immigrants in country *i*.[22] A concern of this estimation strategy is the simultaneity between migration and remittances. A high inflow of remittances from a given sending country may incite potential migrants to emigrate in that country. We treat this problem using an instrumental variable estimator.

(2) Exchange rate. A variation of the exchange rate (expressed as units of the recipient's currency per unit of the source country) affects the purchasing power of remittances and leads to an ambiguous effect. For instance, an appreciation of the remitter's currency may increase remittances to benefit from an increasing purchasing power (income effect) or decrease remittances due to a substitution effect. The substitution effect is empirically documented in the bilateral relationship between Greece and Germany (Lianos, 1997).

(3) Unemployment rate. The most striking result related to the labor market situation in the labor-receiving country concerns the effect of the unemployment rate. It negatively impacts on the volume of remittances. Three explanations are at hand. First, a rise of unemployment causes significant losses of income which reduce remittances. Second, an increase of the unemployment rate raises macroeconomic uncertainty about future incomes, and may incite migrants to decrease their remittances in anticipation. Finally, a high rate of unemployment reduces the migrant's probability to be employed and consequently the probability to remit. In fact, in all the OECD countries, except Italy and Greece, unemployment affects immigrants especially (OECD, 2006a). In addition, Higgins, Hysengegasi and Pozo (2004) and evidence that the propensity to remit strongly decreases with the duration of unemployment.

(4) Immigration policy. Restrictive immigration policies are one of the most salient facts among the new trends in international migration. OECD countries have reinforced their controls to fight against terrorism and prevent irregular migration. We first characterize three different types of immigration policies and then wonder whether they affect remittances.

Migration policy differs from one country to another,[23] but we identify similarities among groups of countries. We base our identification on the recent OECD report on international migration (OECD, 2006b), which is the main source depicting immigration policies in developed countries. We identify three relatively homogeneous groups in terms of migration policy. Fist, we identify North America as distinct group. Docquier *et al.* (2007b) suggest that the structure of the North America immigration differs from that of Europe. In fact, migration to Western Europe is more recent than to the United States and Canada, which are considered

[22] This approach is used in the literature to derive indirectly bilateral remittance flows (see Ratha and Shaw, 2007 and above).

[23] Note that the EU immigration policy is not yet harmonized among member countries.

as “installation countries” long ago. In addition, North America countries attract more skilled migrants than European countries (see Table 1.5 in Appendix 1.8). Second, in contrast to Docquier *et al.* (2007b), we account for the heterogeneity of immigration policies across Western European countries and operate a further distinction between *old* and *new* European immigration countries. North and Central European countries are considered as old immigration countries. They promoted a mass migration since the post-war period until the seventies. Later, they adopted restrictive immigration policies. We regroup Austria, Belgium, France, Germany, the Netherlands, Switzerland and the United Kingdom in the so-called “old immigration countries”. In contrast, the patterns of migration of the “new immigration countries”, gathering Cyprus, Greece, Hungary, Ireland, Italy, Macedonia, Portugal, Spain and Turkey, are different: historically they were immigrant-*source* countries and then they became immigrant-*receiving* countries. Two complementary reasons are usually invoked. First, they developed and became more attractive in terms of migration. Second, they served as a transit area to join the old immigration countries, which closed their borders after the seventies.

Immigration policies may affect remittances through two channels. First, Southeastern emigration to Western Europe appears to be more temporary and more often related to a return project in the country of origin. The intent to return home is hypothesized to induce greater savings and remittances (Lucas, 2004). The evidence suggests that temporary migration results in greater remittances than from permanent settlers (Elbadawi and Rocha, 1992; Rodriguez and Horton, 1995; Lucas, 2004). For sake of illustration, we find, using OECD data on naturalization rates, that on average 26 percent of Romanian official migrants are naturalized in new immigration countries[24] against 59 percent in old immigration countries[25] and 65 percent for installation countries. *Ceteris paribus*, we expect greater remittances from new immigration countries. Second, restrictive immigration policies aim to prevent irregular immigration. Given that illegal Southeastern emigration to Western Europe is easier than to North America we expect a higher stock of illegal migrants in the former group and consequently higher remittances. Moreover, within Western Europe, given more restrictive policies in old immigration countries, we expect again higher remittances from new immigration countries.

[24] Note that Turkey inflates this average. Without Turkey, the average rate of the new immigration countries falls to 13 percent.

[25] Due to lack of data, the average rate for old immigration countries does not include the United Kingdom and Germany.

Labor-sending country factors

(5) Economic size. Empirical literature is not unanimous on the effect of the labor-sending country's GDP on remittances (Buch and Kuckulenz, 2004; Vargas-Silva Huang, 2005). Effects are ambiguous. On the one hand, increasing GDP may lower emigration and the associated remittances. On the other hand, increasing GDP may encourage migrants to invest at home and, thus, to increase remittances. Both trends tend to cancel and the literature mainly finds a no significant effect of the labor-sending country's income on remittance flows.

(6) Political stability. The evidence regarding the political situation of the labor-sending country on remittances is not conclusive (Aydas et al., 2005; Lueth and Ruiz-Arranz, 2006). While some studies found that political instability discourages remittances to labor-sending country, other studies suggest that political instability may increase remittances to help family members' stayed at home.

Based on the previous analysis, we estimate the following equation:

$$\begin{aligned} \ln(\text{remittances})_{ij} = \; & \beta_0 + \beta_1 \ln(Educ)_{ij} + \beta_2 \ln(Dist)_{ij} + \beta_3 \ln(Stock_mig)_{ij} \\ & + \beta_4 \ln(Exchange_Rate)_{ij} + \beta_5 \ln(GDP)_i + \beta_6 (Unemployment_Rate)_i \\ & + \beta_7 (Old_mig)_i + \beta_8 (New_mig)_i + \beta_9 \ln(GDP)_j \\ & + \beta_{10} \ln(Political_Stability)_j + \text{trend} + \varepsilon_{ij}, \end{aligned} \tag{1.1}$$

where the dependent variable $Remittances_{ij}$ is the value of bilateral remittances from the source country *i* to the recipient country *j*.

The explanatory variables are defined as follows:

- $Educ_{ij}$ denotes the average education level of immigrants *j* in country *i*,
- $Dist_{ij}$ is the distance between countries *i* and *j*.
- GDP_i is the Gross Domestic Product of country *i*.
- $Stock_Immig_{ij}$ denotes the stock of Southeastern immigrants *j* in country *i*.
- $Exchange_Rate_{ij}$ denotes the nominal exchange rate of country *i* facing the currency of country *j*.
- $Unemployment_Rate_i$ is the unemployment rate of country *i*.
- Old_mig_i is a binary variable which is unity if country *i* is an old immigration country[26] and zero otherwise;
- New_mig_i is a binary variable which is unity if country *i* is a new immigration country[27] and zero otherwise.

[26] Austria, Belgium, France, Germany, the Netherlands, Switzerland and United Kingdom.

[27] Cyprus, Greece, Hungary, Ireland, Italy, Macedonia, Portugal, Spain and Turkey.

The introduction of these dummies amounts to control for region specific characteristics.[28]

- GDP_j is the Gross Domestic of country *j*.
- $Political_Stability_j$ measures the political stability of country *j*.
- *trend* is a linear trend.
- ε_{ij} represents the usual error term capturing unobserved factors and mis-measurements of the remittances level.

Table 1.3 provides greater details regarding the data construction and Tables 1.4 and 1.6 provide summary statistics for the variables (see Appendix 1.8) . The coefficients of interest to us are β_1 and β_2 which helps to discriminate among alternative theories.

1.5. Results

Estimating equation (1.1), we use three different sources of remittances data: NBR, NBA and NBI (see above). Our main analysis rests on the recipient country Romania (NNR) treated in section (5.1). Romania offers the largest collection of bilateral relationships of remittances in the SEE. Moreover, it is a relevant recipient country, attracting a growing amount of remittances. Then, in section (5.2) we use a more comprehensive dataset to check the robustness of our results.

1.5.1. The Romanian context

Table 1.1 reports the estimation of equation (1.1) on the Romanian context. Using a unique recipient country offers an important advantage: we do not need to introduce labor-sending country factors which are always difficult to observe and capture. These factors only present a temporal variation captured by the trend variable. In columns (1) to (4), we use the Ordinary Least Squares (OLS) estimator and in columns (5) and (6) the Instrumental Variables (IV) estimator. In all regressions, the heteroscedasticity is corrected using White (1980)'s correction. The estimated equation explains around 80 to 90 percent of the variance of bilateral remittances.

In column (1), we estimate equation (1.1) without our main variables of interest: education and distance. With the exception of the exchange rate estimate, all the estimated coefficients

[28] The *installation countries* (Canada and the United States) represent the base group against which comparisons are made.

are statistically significant and economically reasonable. As expected, economic size variables exhibit a positive effect on remittances. First, holding other factors constant, a 1% increase in sending country GDP raises remittances by about 0.87% in average. Second, a 1% increase in the stock of migrants raises remittances by about 0.34% in average. A reasonable explanation of the latter estimate is that the stock of migrants favors additional migration by providing better information on the labor-receiving country and creating cultural proximities. In addition, we find a significant negative impact of the unemployment rate. This effect is expected: an unemployment rise increases macroeconomic instability, causes significant loss of income and reduces the migrant's probability to be employed. Finally, migration policies tend to influence the patterns of remittances. As expected, the results establish a clear ranking: European new immigration countries tend to remit more than European old immigration countries. The Wald statistic reported at the bottom of Table 1.1 indicates this difference is highly significant with a p-value lower than 0.01. Moreover, old immigration countries appear to remit more than North American installation countries. Two complementary explanations have been suggested above. First, migration to Western Europe seems to be more temporary. The empirical evidence suggests that temporary migration results in greater remittances than from permanent settlers (Elbadawi and Rocha, 1992; Rodriguez and Horton, 1995; Lucas, 2004). A second explanation is that immigration policy variables may capture the effect of illegal migration on remittances. The less restrictive the immigration policy is, the higher the flow of irregular migration and the amount of (official) remittances.

Table 1.1: Bilateral remittances on the Romanian context

	Dependent Variable: Ln (Remittance Flows)					
Column:	(1)	(2)	(3)	(4)	(5)	(6)
Method:	OLS	OLS	OLS	OLS	IV	IV
Ln (Migrant's Education)$_{ij}$		**0.64^{b}**		**0.35^{c}**	**0.75^{a}**	**0.78^{a}**
		(0.29)		(0.18)	(0.17)	(0.18)
Ln (Bilateral Distance)$_{ij}$			**0.81^{a}**	**0.67^{a}**	**0.81^{a}**	**0.82^{a}**
			(0.16)	(0.13)	(0.12)	(0.11)
Ln (Stock of Migrants)$_{ij}$	0.34^{a}	0.50^{a}	0.58^{a}	0.61^{a}	0.94^{a}	0.97^{a}
	(0.06)	(0.13)	(0.08)	(0.10)	(0.10)	(0.09)
Ln (Exchange Rate)$_{ij}$	0.95^{c}	0.94^{b}	0.60^{b}	0.66^{b}	0.80^{a}	0.81^{a}
	(0.51)	(0.41)	(0.30)	(0.29)	(0.34)	(0.24)
Ln (GDP)$_{i}$	0.87^{a}	0.85^{a}	0.72^{a}	0.74^{a}	0.56^{a}	0.54^{a}
	(0.07)	(0.09)	(0.08)	(0.08)	(0.07)	(0.07)
Ln (Unemployment Rate)$_{i}$	-1.07^{a}	-1.14^{a}	-1.14^{a}	-1.21^{a}	-1.25^{a}	-1.25^{a}
	(0.20)	(0.19)	(0.18)	(0.19)	(0.19)	(0.19)
(Old Immigration Country)$_{i}$ [A]	1.18^{a}	1.80^{a}	2.75^{a}	2.83^{a}	3.46^{a}	3.51^{a}
	(0.22)	(0.24)	(0.32)	(0.33)	(0.29)	(0.27)
(New Immigration Country)$_{i}$ [B]	2.83^{a}	3.78^{a}	4.28^{a}	4.57^{a}	5.37^{a}	5.42^{a}
	(0.29)	(0.36)	(0.29)	(0.38)	(0.34)	(0.30)
Temporal Trend	0.11^{a}	0.11^{a}	0.11^{a}	0.11^{a}	0.12^{a}	0.12^{a}
	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)
Obs. Nb.	172	160	172	160	160	160
Adj. R-squared	0.78	0.80	0.82	0.83	0.80	0.83
Wald Statistic (Ho: A=B)	177.37	133.03	150.82	135.16	173.59	135.16
[p – value]	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Coefficients on instrumental variables in first stage Dependant variable = Ln (Stock of Migrants)$_{ij}$						
Ln (Religious Fractionalization)$_{i}$					0.74^{a}	0.67^{a}
					(0.03)	(0.03)
Ln (Language Diversity)$_{i}$						0.20^{a}
						(0.03)
Partial R-squared					0.65	0.72
F-Statistic					584.44	341.84
[p – value]					(0.00)	(0.00)
Hansen J-Statistic						0.36
[p – value]						(0.55)

Notes: Heteroskedastic consistent standard errors in parentheses, with a, b and c denoting the significance at 1, 5 and 10% level respectively. Constant is not reported. Instrumental variables in model (5) use the log of the religious fractionalization as an instrument. Column (6) adds the log of the linguistic diversity as an additional instrument. The first stage also includes other explanatory variables included in the second stage.

In column (2), we investigate the impact of migrant's education on remittances and estimate equation (1.1) without the distance variable. We find a statistically and economically significant positive effect of migrant's education. A 1% increase in education raises remittances by about 0.6%, holding other factors fixed. This effect is consistent with the investment/repayment loan hypothesis. Moreover, we may argue that higher remittances of highly educated migrants may compensate for the brain drain effect. This is all the more important since, according to the OECD 2005 foreign-born and expatriates data set, one-quarter of total Romanian immigrants are highly skilled immigrants. A core concern is the difficulty to capture the effect of the migrant's income on remittances. Educated migrants earn relatively more than non-educated and will therefore remit more. Consequently, the education estimate may be upward biased. As noted above, we address this shortcoming by assuming that the migrant income is positively related to the GDP of the sending country. Moreover, we mitigate the problem that GDP mixes the income of natives and immigrants by controlling for the stock of Romanian immigrants in the given sending country.

The positive correlation between education and remittances is in line with Cox, Eser and Jimenez (1998)[29] and older evidence (Johnson and Whitelaw, 1974; Rempel and Lobfell, 1978). However, this correlation somewhat conflicts with Rodriguez and Horton (1995) and Faini (2007). They do not find evidence that education impacts on remittances. Rodriguez and Horton (1995) use a rich series of national surveys and provide a systematic description of international return migrants from the Philippines. In a stimulating study, Faini (2007) regresses total remittances received by developing countries on the share of the skilled emigrants in the total population of the source country of remittances. He finds a negative coefficient but not statistically different from zero.[30] Thus, the educational level of migrants has no impact on remittances. This result suggests that the positive effect of education on remittances may not be generalized to all recipient countries (see below).

Other results of column (2) are broadly comparable with those of column (1) but some differences are worth mentioning. The effect of the stock of migrants is now economically more important with an elasticity of 0.50. The literature finds even larger estimates. Lianos (1997) and Aydas, Neyapti and Metin-Ozcan (2005) find a 0.9 elasticity and Elbadawi and

[29] Cox, Eser and Jimenez (1998) test for the altruism and exchange motives for private transfers. However, “the type of exchange envisioned in their study is a loan repayment of educational investments” (Rapoport and Docquier, 2006).

[30] A concern is the endogeneity of the migration which appears not to be adequately addressed (see below).

Rocha (1992) a unitary elasticity. The impact of the bilateral exchange rate is now statistically significant. An appreciation of the sending country's currency against the Romanian Lei creates an income effect and raises remittances to Romania. This intuitive finding conflicts with the substitution effect found in Lianos (1997) in the Greek case.[31] Controlling for the effect of education, the differences between installation, old and new immigration countries increased. This is easily explained by the fact that Romanian immigrants in the installation countries (Canada and United States) are on average more educated (see Table 1.5 in Appendix 1.8).

In column (3), we investigate the impact of distance on remittances and estimate equation (1.1) without the education variable. We find a statistically and economically significant positive effect of the bilateral distance. *Ceteris paribus*, a 1% increase in distance from recipient country leads to, on average, a 0.8% increase in bilateral remittances. This new evidence is again consistent with the investment/repayment loan hypothesis. Migratory costs increase with geographic distance, implying a higher "loan" to cover migratory expenses. Assuming this loan is supported by the family stayed at home, it leads in return to a higher remittance flow. In addition, controlling for distance raises again the difference between installation countries and the two other groups. This increasing difference is explained by the relative remoteness of installation countries compared to Romania.

In column (4), we estimate equation (1.1) and include both education and distance variables. The estimated coefficient of distance is still significant, with the expected sign. Education has a positive sign but is significant only at the 10% level. Other results are basically unchanged with respect to columns (2) and (3).

In the last two columns, we check if our results are robust to an endogeneity issue.[32] In fact, we may suspect a reverse causality between the stock of immigrants and remittances. It

[31] Lianos (1997) finds that the exchange rate has a negative effect because of continuing devaluation of the Greek drachma against the German mark. As a result, migrants tend to postpone remittances as long as possible.

[32] We also checked the robustness of our results to alternative specifications. The results are available upon request. We first have substituted population (pop) and GDP per capita (GDP/POP) for GDP, to control, respectively, for size and development differences across source countries of remittances. The results show that an increase in source country per capita income and population increase remittances. The other results remained unchanged compared to column (4) of Table 1.1. Second, we have imposed a unitary coefficient to the stock of migrants, by moving the variable ln(StockMigrants) to the left hand side of the equation (1.1). In this way, we express the dependent variable as remittances per migrant. We find that the unitary constraint inflates the estimates of distance and education.

is quite likely that a high inflow of remittances from a given sending country may incite potential emigration to that country. Exploiting differences in religious heterogeneity as an instrument for the stock of immigrants, we find that our results are robust to the instrumental variable estimator. The exclusion restriction is that the religious fractionalization of a country has no effect on remittances, other than its effect through an increase in the stock of immigrants. This is because "measured religious fractionalization tends to be higher in more tolerant and free societies" (Alesina *et al.*, 2003) and such societies appear to be more attractive for migrants.[33] The measure of religious fractionalization is based on data from the *Encyclopedia Britannica* (2001) and taken from Alesina *et al.* (2003). The first-stage result shows that the estimate of the religious fractionalization variable (in log) is positive and economically and statistically highly significant (see bottom of Table 1.1). The large F-statistic indicates that this instrument provides a good fit in the first stage regression (column 5).[34] Moreover, the partial r-square of the first stage regression is also quite large (0.65). The two stage least squares estimates in column (5) produce results which are almost identical to the OLS estimates of column (4). Note that the estimates of our interest variables education and distance have inflated and both are now highly statistically significant ($p<0.01$).

Our empirical strategy might capture the effect of religious fractionalization on remittances, but working through other channels. We deal with this concern, in column (6), with a simple overidentification test using a measure of linguistic diversity as an additional instrument. A diversity of tongues in a country is likely to be highly correlated with migration but not with remittances. The measure of language diversity comes from Melitz (2008). As expected, in the first-stage, the estimate of diversity (in log) has a positive and highly significant effect on the stock of migrants. The large F-statistic indicates that our two restriction variables provide again a good fit in the first stage regression. Moreover, the Sargan overidentification test (with the p-value of 0.36) supports the validity of the instruments. The overall results are still little affected and the positive effect of distance and distance on remittances is in line with the loan repayment hypothesis.

[33] Faini (2007) controls for the possibility that total migration is endogenous by using the geographic distance as an instrument. Our regressions show that this instrument is inappropriate since it affects remittances.

[34] As a rule of thumb, Staiger and Stock (1997) recommend a first-stage F-statistic of at least ten for an instrument not to be considered weak.

1.5.2. The “comprehensive” dataset

We now proceed to the estimation of equation (1.1) by polling data coming from our three different sources: Romania (NBR), Albania (NBA) and Italy (NBI). On the one hand, Albania is another major recipient country in the SEE, since remittances exceed a quarter of Albania’s GDP in 2006. Other in other hand, Italy is one of the main labor-receiving countries for SEE’s migrants and one of the main remitters to the SEE. This larger dataset offers two advantages to check the robustness of our results. First, we get a larger number of observations with potentially 300 observations and second we extend the time period from 1997 to 2007. However, we should now control for labor-sending country's factors since we get four recipient countries: Romania, Albania and two additional recipient countries related to the Italian dataset: Bulgaria and Serbia. We now estimate equation (1.1) including the labor-sending country factors: an income variable ($Ln\ GDP_j$) and a variable measuring the political stability of the country ($Politica_Stability_j$).

The results are reported in Table 1.2. They are in line with those of Table 1.1.

In column (1), we estimate equation (1.1). All the estimates are statistically significant, except those related to the labor-sending country factors (income and political stability). This result complies with the empirical literature which does not find conclusive evidence regarding these factors. As noted above, their effects are ambiguous in sign. On the one hand, increasing GDP may lower emigration and the associated remittances. On the other hand, increasing GDP may encourage migrants to invest at home and, thus, to increase remittances. The effect of the political situation is also ambiguous. On the one hand, increasing political instability may discourage remittances to labor-sending country. On the other hand, increasing political instability may increase remittances to help family members' stayed at home. The estimates of our variables of interest are statistically significant. Migrant's education and bilateral distance have a positive influence on remittances received by SEE countries.

In column (2), we capture the labor-sending country factors with country fixed effects instead of income and political stability variables. Our results are broadly unchanged. Education and distance remain positive, meaning that remittances received by Southeastern countries may be seen as a loan repayment for the costs of migrant education and emigration.

As in Table 1.1, we check if our results are robust to endogeneity running from immigrants stocks to remittances. In column (3), we use the religious fractionalization of the

source country of remittances as the exclusion restriction The first-stage result shows that the estimate of the religious fractionalization variable (in log) is again positive and statistically highly significant (see bottom of Table 1.2). The large F-statistic indicates that this instrument provides a good fit in the first stage regression (column 3). Recall that this instrument is based on the idea that religious fractionalization of a country, leading to more tolerant and free societies, has no effect on remittances, other than its effect through an increase in the stock of immigrants. The two stage least squares estimates in column (3) produce results which are almost identical to the OLS estimates of column (2) with labor-sending country fixed effects. Note that here only the estimate of our variable of interest distance has inflated. In column (4), we introduce our second instrument, the linguistic diversity of the sourcecountry. Here, its estimate is not statistically significant but the Sargan overidentification test (with the p-value of 03.1) still supports the validity of the instruments. The overall results are still little affected and the positive effect of distance and distance on remittances is again in line with the loan repayment hypothesis.

Table 1.2: Bilateral remittances on the "comprehensive" dataset

	Dependent Variable: Ln (Remittance Flows)			
Column:	(1)	(2)	(3)	(4)
Method:	OLS	OLS	IV	IV
Ln (Migrant's Education)$_{ij}$	**0.36^{a}**	**0.32^{b}**	**0.33^{b}**	**0.33^{b}**
	(0.13)	(0.13)	(0.13)	(0.13)
Ln (Bilateral Distance)$_{ij}$	**0.77^{a}**	**0.73^{a}**	**1.18^{a}**	**1.09^{a}**
	(0.16)	(0.18)	(0.18)	(0.28)
Ln (Stock of Migrants)$_{ij}$	0.70^{a}	0.68^{a}	0.97^{a}	0.91^{a}
	(0.07)	(0.07)	(0.07)	(0.18)
Ln (Exchange Rate)$_{ij}$	-0.23^{a}	-0.13	-0.32^{b}	-0.28^{b}
	(0.09)	(0.10)	(0.14)	(0.13)
Ln (GDP)$_{i}$	0.74^{a}	0.71^{a}	0.51^{a}	0.55^{a}
	(0.07)	(0.08)	(0.12)	(0.13)
Ln (Unemployment Rate)$_{i}$	-0.54^{b}	-0.55^{b}	-0.68^{a}	-0.65^{a}
	(0.23)	(0.23)	(0.24)	(0.24)
(Old Immigration Country)$_{i}$ [A]	3.33^{a}	3.16^{a}	4.12^{a}	3.93^{a}
	(0.37)	(0.40)	(0.40)	(0.40)
(New Immigration Country)$_{i}$ [B]	5.14^{a}	4.91^{a}	5.69^{a}	5.53^{a}
	(0.38)	(0.38)	(0.58)	(0.58)
Ln (GDP)$_{j}$	0.10			
	(0.15)			
Ln (Political Stability)$_{j}$	-0.11			
	(0.59)			
Temporal Trend	0.49^{a}	0.47^{a}	0.49^{a}	0.49^{a}
	(0.04)	(0.04)	(0.04)	(0.04)
Obs. Nb.	238	250	250	250
Adj. R-squared	0.79	0.78	0.77	0.79
Labor-sending country fixed effects	No	Yes	Yes	Yes
Wald Statistic (Ho: A=B)	111.05	92.31	77.88	92.31
[p – value]	(0.00)	(0.00)	(0.00)	(0.00)
Coefficients on instrumental variables in first stage Dependant variable = Ln (Stock of Migrants)$_{ij}$				
Ln (Religious Fractionalization)$_{i}$			0.51^{a}	0.48^{a}
			(0.08)	(0.09)
Ln (Language Diversity)$_{i}$				0.10
				(0.06)
Partial R-squared			0.14	0.15
F-Statistic			36.32	14.89
[p – value]			(0.00)	(0.00)
Hansen J-Statistic				1.02
[p – value]				(0.31)

Notes: Heteroskedastic consistent standard errors in parentheses, with a and b denoting the significance at 1 and 5 level respectively. Constant is not reported. Instrumental variables in model (3) use the log of the religious fractionalization as an instrument. Column (4) adds the log of the linguistic diversity as an additional instrument. The first stage also includes other explanatory variables included in the second stage.

1.6. Conclusion

Whereas literature concentrates mainly on the impact of remittances on economic development, the present contribution analyzes its determinants. In this first part, we reconsider this old question first to take account of recent shifting patterns of migration and second to try to discriminate among alternative theories of remittances. Two main theoretical motivations are at hand: individualistic motives and family arrangements motives. We find some support for the latter motivations and notably for the loan repayment hypothesis. Migrants send back remittances to reimburse family for migration costs and investments in human capital. Thus, we find that education and geographic distance from source to recipient countries positively influence remittances. However, this does not preclude the existence of other familial motives (for instance insurance) or individualistic motives (for instance altruism).

These results imply first that liquidity constraints matter and second that remittances of highly educated migrants may compensate for the brain drain effect. This latter result is all the more important since, for instance, one-quarter of total Romanian immigrants are highly skilled immigrants. However, the education effect may not be generalized to all recipient countries. SEE countries are recent emigrant countries. In the future, with longer duration of migration, skilled immigrants, earning higher wages abroad, will be more likely to reunite with their (immediate) family (Faini, 2007). As a result, they would probably decrease their remittances. This expectation could prove wrong as long as the loan to cover the emigration costs is provided by the extended family (Ilahi and Jafarey, 1999).

1.7. References (Part 1)

Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat S. and R. Wacziarg, "Fractionalization", *Journal of Economic Growth*, 8, 2003, 115-94.

Anderson, J. and E. van Wincoop, "Gravity With Gravitas: A Solution to the Border Puzzle", *American Economic Review*, 93, 2003, 170-92.

Aydas, O.T., Neyapti, B. and K. Metin-Ozcan, "Determinants of Worker Remittances: the Case of Turkey", *Emerging Markets Finance and Trade*, 41(3), 2005, 53-69.

Azam, J.P. and F. Gubert, "The Impact of Remittances on their Recipients in Africa", *Revue Économique*, 56(6), 2005, 1331-58.

Becker, G., "A Theory of Social Interactions", *Journal of Political Economy*, 82(6), 1974, 1063-93.

Bernheim, D., Shleifer, A. and L. Summers, "The Strategic Bequest Motive", *Journal of Political Economy*, 93(6), 1985, 1045-76.

Alesina A., Devleeschauwer A., Easterly W., Kurlat S., Wacziarg R., (2003), « Fractionalization », *Journal of Economic Growth*, vol. 8, n° 2, pp. 155-194.

Anderson J., van Wincoop E., (2003), « Gravity with Gravitas : A Solution to the Border Puzzle », *American Economic Review*, vol. 93, n° 1, pp.170-192.

Aydas O.T., Metin-Ozcan K., Neyapti B., (2005), « Determinants of Worker Remittances : the Case of Turkey », *Emerging Markets Finance and Trade*, vol. 41, n° 3, pp. 53-69.

Azam J.P., Gubert F., (2005), « Those in Kayes : The Impact of Remittances on their Recipients in Africa », *Revue Economique*, vol. 56, n° 6, pp. 1331-1358.

Becker G., (1974), « A Theory of Social Interactions », *Journal of Political Economy*, vol. 82, n° 6, pp. 1063-93.

Bernheim D., Shleifer A., Summers L., (1985), « The Strategic Bequest Motive », *Journal of Political Economy*, vol. 93, n° 6, pp. 1045-1076.

Buch C., Kuchulenz A., (2004), « Worker Remittances and Capital Flows to Developing Countries », *Discussion Paper*, n° 04-31, Centre for European Economic Research.

Cox D., (1987), « Motives for Private Income Transfers », *Journal of Political Economy*, vol. 95, n° 3, pp. 508-46.

Cox D., Eser, Z., Jimenez E., (1988), « Motives for Private Transfers over the Life Cycle: an Analytical Framework and Evidence for Peru », *Journal of Development Economics*, vol. 55, pp. 57-70.

Cox D., Jimenez E., (1992), « Social Security and Private Transfers in a Developing Country: the Case of Peru », *World Bank Economic Review*, vol. 6, n° 1, pp. 155-169.

de la Brière, B., Sadoulet, E., de Janvry, A., Lambert S., (2002), « The Roles of Destination, Gender, and Household Composition in Explaining Remittances: an Analysis for the Dominican Sierra », *Journal of Development Economics*, vol. 68, pp. 309-328.

Docquier F., Lohest O., Marfouk A., (2007a), « What determines Migrants' Destination Choice ? », *Mimeo*, Université Catholique de Louvain.

Docquier F., Lohest O., Marfouk A., (2007b), « Brain Drain in Developing Countries », *World Bank Economic Review*, vol. 21, n° 2, pp. 193-218

Docquier F., Marfouk A., (2006), « International Migration by Educational Attainment (1990-2000) », *in* Ozden C., Schiff M., eds, *International Migration, Economic Development and Policy*, World Bank and Palgrave Macmillan, New York, pp. 151-200.

Elbadawi I., Rocha R., (1992), « Determinants of Expatriate Workers' Remittances in North America and Europe », *Policy Research Working Paper*, n° 1038, World Bank.

El-Sakka M., McNabb R., (1999), « The Macroeconomic Determinants of Emigrant Remittances », *World Development*, vol. 27, n° 8, pp. 1493-1502.

Faini R., (2007), « Remittances and the Brain Drain : Do More Skilled Migrants remit More ? », *World Bank Economic Review*, vol. 21, n° 2, pp. 177-191.

Freeman R.B., (2006), « People Flows in Globalization », *Journal of Economic Perspectives*, vol. 20, n° 2, pp. 145-170.

Freund C., Spatafora N., (2008), « Remittances, Transaction Costs, Determinants and Informality », *Journal of Development Economics*, vol. 86, n° 2, pp. 356-366.

Harisson A., Britton T., Swanson A., (2004), *Working Abroad : The Benefits flowing from Nationals working in Other Economies*, Report of the OECD Round Table on Sustainable Development.

Hernandez-Coss R., (2004), « The U.S.-Mexico Remittance Corridor : Lessons on Shifting from Informal to Formal Remittance Systems », Financial Sector, World Bank.

Hernandez-Coss R., (2006), « The Impact of Remittances : Observations in Remitting and Receiving Countries », *Discussion Paper*, prepared for the G24 XXIII Technical Group Meeting.

Hoddinott J., (1994), « A Model of Migration and Remittances applied to Western Kenya », *Oxford Economic Papers*, vol. 46, n° 3, pp. 459-476.

Horton S., Rodriguez E., (1994), « International Return Migration and Remittances in the Philippines », *in* O'Connor D., Farsakh L., eds, *Development Strategy, Employment and Migration. Country Experiences*, OECD Development Centre, Paris.

Ilahi N., Jafarey S., (1999), « Guestworker Migration, Remittances and the Extended Family : Evidence from Pakistan », *Journal of Development Economics*, vol. 58, n° 2, pp. 485-512.

Jimenez-Martin S., Jorgensen N., Labeaga J.M., (2007), « The Volume and Geography of Remittances in the EU », European Commission.

Johnson G., Whitelaw W., (1974), « Urban-Rural Income Transfers in Kenya : An Estimated Remittances Function », *Economic Development and Cultural Change*, vol. 22, n° 3, pp. 473-479.

Karafolas S., (1998), « Migrant Remittances in Greece and Portugal. Distribution by Country of Provenance and the Role of the Banking Presence », *International Migration*, vol. 36, n° 3, pp. 357-380.

Korovilas J., (1999), « The Albanian Economy in Transition : The Role of Remittances and Pyramid Investment Schemes », *Post-Communist Economies*, vol. 11, n° 3, pp. 399-415.

Laferrère A., Wolff F.C., (2006), « Microeconomic Models of Family Transfers », *in* Kolm S.C., Mercier Ythier J., eds, *Handbook on the Economics of Giving, Altruism and Reciprocity*, North-Holland, Elsevier, vol. 2, pp. 889-969.

Leon-Ledesma M., Piracha M., (2004), « International Migration and the Role of Remittances in Eastern Europe », *International Migration*, vol. 42, n° 4, pp. 65-83.

Lianos T., (1997), « Factors Determining Migrant Remittances : the Case of Greece », *International Migration Review*, vol. 31, n° 1, pp. 72-87.

Lucas R.E.B., Stark O., (1985), « Motivation to remit : Evidence from Botswana », *Journal of Political Economy*, vol. 93, n° 5, pp. 901-918.

Lueth E., Ruiz-Arranz M., (2008), « Determinants of Bilateral Remittance Flows », *The B.E. Journal of Macroeconomics*, vol. 8, n° 1.

Melitz J., (2008), « Language and Foreign Trade », *European Economic Review*, vol. 52, n° 4, pp. 667-699.

OECD, (2006a), *Employment Outlook*.

OECD, (2006b), *International Migration Outlook*, SOPEMI.

Poirine B., (1997), « A Theory of Remittances as an Implicit Family Loan Arrangement », *World Development*, vol. 25, n° 4, pp. 589-611.

Rapoport H., Docquier F., (2006), « The Economics of Migrants' Remittances », *in* Mercier-Ythier J., Kolm S.C., eds, *Handbook on the Economics of Giving, Altruism and Reciprocity*, Elsevier-North Holland, pp. 1135-1198.

Ratha D., (2005), « Workers' Remittances : An Important and Stable Source of External Development Finance », *in* Mainbo S., Ratha D., *Remittances : Development Impact and Future Prospects*, , World Bank, Washington DC, pp. 19-52.

Ratha D., Shaw W., (2007), « South-South Migration and Remittances », Development Prospects Group, World Bank.

Rodriguez E. and S. Horton, "International Return Migration and Remittances in the Philippines", Working paper, 1995.

Rosenzweig M.R., (1988), « Risk, Implicit Contracts and the Family in Low Income Countries », *Economic Journal*, vol. 98, n° 393, pp. 1148-1170.

Schiopu I., Siegfried N., (2006), « Determinants of Workers' Remittances. Evidence from the European Neighbouring Region », *Working Paper Series*, n° 688, European Central Bank.

Staiger D., Stock J., (1997), « Instrumental Variables Regression with Weak Instruments », *Econometrica*, vol. 65, n° 3, pp. 557-586.

Stark O., (1995), *Altruism and Beyond*, Oxford, Basil Blackwell.

Straubhaar T., (1986), « The Determinants of Workers' Remittances : The Case of Turkey », *Weltwirshaftliches Archiv*, vol. 122, pp. 728-740.

Straubhaar T., Vadean F., (2005), « Les transferts de fonds des émigrés et leur rôle dans le développement », *in* OCDE, *Migrations, transferts de fonds et développement*, Editions OCDE, Paris, pp. 13-41.

Swamy G., (1981), « International Migrant Workers' Remittances : Issues and Prospects », *Staff Working Paper*, n° 481, World Bank, Washington DC.

Vargas-Silva, C. and P. Huang, “Macroeconomic Determinants of Workers' Remittances: Host vs. Home Country's Economic Conditions”, Working Paper, 2005.

White H., (1980), « A Heteroskedasticity-Consitent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity », *Econometrica*, vol. 48, n° 4, pp. 817-838.

Woodruff C., Zenteno R., (2007), « Migration Networks and Microenterprises in Mexico », *Journal of Development Economics*, vol. 82, n° 2, pp. 509-528.

1.8. Appendix

A. Summary statistics and variable definitions

Table 1.3. Data and variable definitions

Bilateral remittances$_{ij}$	Various sources (see below).
Migrant's education$_{ij}$	Share of highly educated immigrants of country *j* in the total number of *j*'s immigrants in a given country *i*. Source: OECD *Foreign-Born and Expatriates*.
Bilateral distance$_{ij}$	Distance in kilometers between the largest cities of the two countries *i* and *j*. Source: CEPII.
Stock of immigrants$_{ij}$	Come from OECD *Foreign-Born and Expatriates*. Updated in 2005
Exchange rate$_{ij}$	Country *j*'s currency per unit of foreign currency. Quarterly frequency. Source: *International Financial Statistics* (IMF).
GDP	Gross Domestic Product of country i or j. Come from the *Vienna Institute for International Economic Studies* (WIIW).Vienna Institute f. . Quarterly frequency.
Unemployment rate$_{i}$	Extracted from *OECD Stat Web Browse*, except for Turkey (IMF). Quarterly frequency.
Old immigration country$_{i}$	= 1 if the sending country is Austria, Belgium, France, Germany, the Netherlands, Switzerland or the United Kingdom, and 0 otherwise.
New immigration country$_{i}$	= 1 if the sending country is Greece, Ireland, Italy, Portugal, Spain or Turkey, and 0 otherwise.
Political stability$_{i}$	Come from the World Bank Governance Indicators 2005.
Religious Fractionalization	Taken from Alesina et al. (2003).
Language Diversity	Come from Melitz (2008).

Table 1.4. Summary statistics (Romanian dataset)

	Nb. of obs	Mean	Standard devation	Min	Max
Ln (Bilateral remittances)$_{ij}$	190	17.14	1.39	14.40	20.44
Ln (Migrant's education)$_{ij}$	160	-1.47	0.58	-2.81	-0.61
Ln (Bilateral distance)$_{ij}$	190	7.55	0.66	6.09	8.95
Ln (Stock of Immigrants)$_{ij}$	172	9.96	1.23	7.93	11.84
Ln (Exchange Rate)$_{ij}$	190	1.13	0.44	-0.50	1.86
Ln (GDP)$_{i}$	190	27.07	1.70	22.07	30.27
Ln (Unemployment Rate)$_{i}$	190	1.84	0.32	1.05	2.43
Old Immigration Country$_{i}$	190	0.44	0.49	0	1
New Immigration Country$_{i}$	190	0.37	0.48	0	1
Ln (Religious Fractionalization)$_{I}$	190	-1.03	0.85	-5.31	-0.19
Ln (Language Diversity)$_{i}$	190	-1.76	1.14	-3.92	-0.36

Table 1.5. Percentage of Romanian migrants with tertiary education, 2006

Country	%
Austria	13
Belgium	35
Canada	54
France	25
Germany	18
Greece	15
Ireland	23
Italy	10
Portugal	17
Spain	13
Switzerland	50
United Kingdom	47
United States	38

Source: Authors' computation on the OECD database, *Foreign-Born and Expatriates 2005*.

Table 1.6. Summary statistics (comprehensive dataset)

	Nb. Of obs	Mean	Standard deviation	Min	Max
Ln (Bilateral Remittances)$_{ij}$	300	16.46	2.28	9.22	21.7
Ln (Migrant's Education)$_{ij}$	254	-1.60	0.59	-2.81	-0.59
Ln (Bilateral Distance)$_{ij}$	300	7.46	0.79	5.04	9.66
Ln (Stock of Immigrants)$_{ij}$	266	9.77	1.69	4.94	12.90
Ln (Exchange Rate)$_{ij}$	300	1.71	1.48	-0.78	5.22
Ln (GDP)$_{i}$	300	27.19	1.58	22.07	30.27
Ln (Unemployment Rate)$_{i}$	296	1.90	0.41	0.75	3.58
Old Immigration Country$_{i}$	292	0.38	0.48	0	1
New Immigration Country$_{i}$	292	0.45	0.49	0	1
Ln (GDP)$_{j}$	300	24.74	1.04	22.93	25.52
Political Stability$_{j}$	288	0.02	0.23	-0.77	0.43
Ln (Religious Fractionalization)	300	-1.02	0.74	-5.31	0.19
Ln (Language Diversity)	300	-1.83	1.03	-3.92	-0.36

B. Bilateral remittances data

Three sources:

A. Romanian Source (National Bank of Romania).

Data are collected via (i) banks reports for amounts received in banks accounts, (ii) reports of the money transfer companies such as Western Union and Money Gram and (iii) reports of the National Post Office for amounts sent via postal orders. We identify recorded flows to Romania from 17 source countries: Austria, Belgium, Canada, Cyprus, France, Germany, Greece, Ireland, Israel, Italy, the Netherlands, Portugal, Spain, Switzerland, Turkey, the United Kingdom and the United States. Data are on a quarterly frequency and we cover 2005,

2006 and 2007. Before 2005, only global information on remittances is available. It should be noted that for Cyprus, we cover 2005 and 2007. For Israel, we cover 2005, 2006 and the two quarters of 2007. For Turkey, we cover 2005. Thus, we get a potential of 190 observations.

Summary statistics	Nb. of obs	Mean	Standard deviation	Min	Max
Bilateral Remittances	190	8.30e+07	1.52e+08	1801925	7.58e+08

B. Albanian Source (National Bank of Albania)

We identify recorded flows to Albania from 17 source countries: Argentina, Australia, Austria, Belgium, Canada, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Italy, the Netherlands, Norway, Saudi Arabia, Switzerland, the United Kingdom and the United States. Data are on a quarterly frequency and we cover 2006. Thus, we get 68 (= 17*4) observations.

Summary statistics	Nb. of obs	Mean	Standard deviation	Min	Max
Bilateral Remittances	68	1.72e+07	3.94e+07	10147	1.44e+08

C. Italian Source (National Bank of Italy)

We identify recorded flows from Italy to 3 destination countries: Romania, Bulgaria and Serbia.

- For Romania, data are on a monthly frequency. We cover 1997 to 2006 and the first six months of 2007. Thus, we get 126 (= 10*12 + 6) observations.
- For Bulgaria, data are on a monthly frequency. We cover 2005, 2006 and the first six months of 2007. Thus, we get 30 (= 2*12 + 6) observations.
- For Serbia, data are on a monthly frequency and for the first six months of 2007. Thus, we get 6 observations.

In sum, we get 162 (= 126 + 30 + 6) observations.

Summary statistics	Nb. of obs	Mean	Standard deviation	Min	Max
Bilateral Remittances	162	1.79e+08	2.98e+08	245931	1.18e+09

Part 2. The microeconomic motives of remittances and their implications

2.1. Remittances and transfer motives

2.1.1. Introduction

While remittances are an important source of external financing for developing countries,[35] they also provide a significant share of the disposable income for many households and they play a vital role for their recipients in poor countries. For instance, Cox *et al.* (1998) find that 25% of the Peruvian households benefit from remittances and these transfers amount to 22% of their incomes. Given their magnitude, their implications on the recipients and *in fine* their potential effect on development, economists have paid a growing attention to these private transfers from abroad during the last twenty years. From a microeconomic perspective, previous studies on remittances have focused on the two following aspects.

On the one hand, some papers have attempted to understand why migrants remit a portion of their earnings to their family members left in the labor-sending country. From a theoretical viewpoint, several motives have been suggested to explain these transfers (see Rapoport and Docquier, 2006). A first motive deals with altruistic feelings, meaning that migrants care of those left behind. According to the second motivation, there is an exchange when the migrants remit for services provided by the recipients at home (Lucas and Stark, 1985). Another motive for remitting money stems from familial interactions. This may take the form of an insurance contract that protects its members against shocks (Rosenzweig, 1988), or remittances may be seen as a loan repayment for the costs of migrant education and emigration (Poirine, 1997).

On the other hand, some studies have focused on the consequences of these transfers on the recipient households. A first issue deals with poverty alleviation. Adams (2006) finds that remittances have a large impact on reducing the depth and severity of poverty in Ghana[36]. A

[35] Remittances are more than twice as large as official aid and exceed, for some countries, the volume of foreign direct investment (Ratha, 2005). For instance, remittances to Albania are estimated to $1.2 billion in 2005, while foreign direct investment are estimated to $0.2 billion.

[36] Results from household surveys are less clear concerning the effect of remittances on income inequality (see Taylor and Wyatt, 1996; Rodriguez, 1998).

second issue is about how these private transfers from abroad are spent or invested. Hildebrandt and McKenzie (2005) observe that children living in recipient households have a lower mortality rate and a higher birth weight in Mexico. Edwards and Ureta (2003) find a positive impact of remittances on school attendance and retention in El Salvador. Remittances facilitate housing investments in Nigeria (Osili, 2004) and generate larger investments among small enterprises in Mexico (Woodruff and Zenteno, 2007). A last concern is the role of remittances on labor market decisions. Remittances are associated with a decrease in the labor force participation of women and men in Nicaragua (Funkhauser, 1992), and Yang (2008) highlights a depressing effect of remittances on labor supply of children in the Philippines.

The theoretical models suggested so far in the economic literature allow deriving specific predictions to test the motives for remittances. Detailed information is needed to perform such tests and also to evaluate the implications of these transfers on their recipients, since characteristics like income of both the migrants and the household recipients, distance from family or the migrants' education are needed among other covariates. From an empirical perspective, there is no clear consensus so far on the underlying motives for remittances (see Rapoport and Docquier, 2006) and there is also no clear conclusion from the studies dealing with the consequences of remittances as there are multiple, interdependent effects. So, this means that understanding both the motives for remitting money and their implications on recipient households is still a challenging task.

The purpose of our contribution is to bring evidence on the motives of remittances and on their implications on the financial situation of the recipients in Albania. Unlike countries of Latin America for instance, it should be noted that studies on transfers from abroad in Eastern countries remain scarce. Specifically, we draw on a rich data set collected by the World Bank among households over the period 2002-2004 to document the pattern of remittances in that country. For various reasons, the case of Albania is a very relevant one. First, the country is an area of particularly high migration flows. According to the World Bank (2008), the stock of emigrants expressed as percentage of population is estimated to 27.5%. Secondly, Albania is characterized by a high uncertainty in terms of income due to the transformation from the communist system towards a market economy, meaning that additional sources of income like remittances should have a strong impact both on households and on the global economy.

The Albanian Living Standard Measurement Study (LSMS hereafter) is a panel, meaning that we are able to control for unobserved heterogeneity at the household level through the use of individual fixed effects. Another feature of the data is that in 2003, we have some

characteristics of respondents and all their adult children, living either in Albania or abroad, and information on remittances (if any) from the former category of children. Finally, there are subjective questions on the financial situation of the household. This detailed information offers a unique opportunity to bring new evidence to the motive issue.

We proceed in the following way in our empirical analysis. First, we describe the pattern of remittances in Albania. We show that the bulk of these transfers is made by adult children and that remittances are mainly related to food and basic necessities. We then focus on the determinants of the transfers and study whether they are affected by individual characteristics. Using random and fixed effects discrete choice models, we find that the probability of receiving a transfer is not really higher when the recipient is in a poor situation. Finally, we evidence a significantly positive effect of the transfer receipt on the financial situation. We correct the potential endogeneity bias of this covariate using two different methods. On the one hand, we treat the selection problem on the basis of observable characteristics and rely on a propensity score approach. On the other hand, when considering remittances from children, we instrument the receipt of transfer using the characteristics of the potential donor.

The remainder of the first section of Part 2 is organized as follows. In subsection 2, we present the data. The pattern of remittances in Albania is described in subsection 3. We investigate the motives of the transfers in subsection 4 and examine their implications on the financial situation of the recipient households in subsection 5. Finally, in subsection 6, we conclude this first section.

2.1.2. The LSMS Albanian data

We use data from the LSMS project conducted in Albania at the beginning of the 2000s. The survey was carried out by the Albanian Institute of Statistics with the technical and financial assistance of the World Bank[37]. The LSMS project is an international effort supported by the World Bank in order to improve the quality of household survey data for policy needs. It is thus a crucial tool in measuring poverty in developing countries.

Let us first describe the context of this ex-communist country along with the challenges faced in Albania during the transition to a market economy. Following the collapse of communism, Albania has pursued strong reforms towards a market economy. After a period of

[37] For further information on the Albanian LSMS survey, see the documentation of the World Bank available online: http://www.worldbank.org/lsms/index.htm.

erratic growth in the early 1990's, linked to economic transition and several political crises, the GDP has increased, 5% on average between 2000 and 2005. However, the GDP per inhabitant remains low, 2400 US$ in 2003. To date, living standards in Albania remain among the lowest in Europe and about one quarter of the Albanian population lives below the poverty line. The human development index (HDI) is lower than the average level observed in Eastern Europe, respectively 0.784 instead of 0.802.

However, the proximity of attracting neighboring countries like Italy and Greece offers some opportunities of migration. Albania has recently emerged from a repressive political regime, at a time when traveling to foreign countries was totally restricted. After a half-century of isolation, the desire of Albanians to leave their country has been rapidly increasing. Recent events like the fall in national income, inflation, high unemployment and poverty, combined with episodes of political instability, have strongly boosted migration flows. Albania is now, as a portion of the population, the largest emigration country in Europe. According to the OECD database on immigrants and expatriates, around 64.4% of Albanian migrants live in Greece and 25.4% in Italy[38].

As shown in Korovilas (1999), all these migrants have an important role in supporting the Albanian economy since a large proportion of their earnings is transferred back home. These transfers are larger than other aggregates like exports, foreign direct investment or foreign aid. Furthermore, inflows of remittances are increasing over time. Estimates of the National Bank of Albania indicate that remittances increased from 377.9 million US$ in 1994 to 1 billion US$ in 2004. Migrants' funds represent a key source of foreign exchange and thus influence significantly incomes of Albanian households.

In this study, we use the LSMS Albanian longitudinal data and consider three waves covering the period from 2002 to 2004. The 2002 LSMS survey was a nationally representative sample of households and individuals living in Albania. The sample was designed to be representative of urban and rural areas and it was composed of 3600 households. Four questionnaires were used in order to collect information: a household questionnaire, a diary recording household consumption, a community questionnaire and a price questionnaire. The focus in the following waves was only on the first instrument, *i.e.* the

[38] Conversely, only 6.3% of Albanian migrants live in the United States.

household questionnaire[39]. The sample sizes in 2003 and 2004 were approximately half of the original sample.

We now describe the main questions of interest for our study. Concerning remittances, information in wave 1 (2002) is available in the transfers and social assistance module. It should be noted that the definition of the transfer variables includes both remittances and transfers from family members living in Albania. However, as we know where the donor lives (in Albania, Greece, Italy, United States, etc.), we can isolate transfers from abroad. We also know the relationship between the donor and the head of the household (spouse, children, siblings, etc.). The amount of these inflows, either cash or in-kind, are reported in the questionnaire and there is also some information on the main reasons explaining why the donor has provided this assistance (for instance for purchase of food and basic necessities, investment, medical expenses, etc).

When turning to the second wave (2003), the corresponding information is in the migration module which is more detailed than in wave 1. In particular, there is an additional section on adult children living by their own, either in Albania or in a foreign country. For each adult child living abroad, we know whether the head of the household has received a remittance from this specific child and its amount (if any), and the questionnaire also includes the main uses of the transfer. We have also more detailed questions on possible remittances received from specific family members living abroad (like siblings, nephews, uncles, etc.). Finally, in 2004, the information is very similar to the one found in 2002 since there is a module on remittances and other sources of income. We know the relationship of each person remitting to the household and the head, the location of the remitter and the amount given. Unfortunately, there is no information in 2004 on the main uses of remittances.

To assess the consequences of remittances on Albanian recipient households, we use a set of questions related to the current financial situation which are included in the subjective module of the Albanian LSMS survey. The first one is about subjective satisfaction: “How satisfied are you with your current financial situation?”. Possible answers are “fully satisfied”, “rather satisfied”, “less than satisfied”, and “not at all satisfied”. The second question is about the current level of food consumption: “Would you consider the current level of food

[39] The diary for household consumption, the community questionnaire and the price questionnaire were not repeated in 2003 and 2004. Significant efforts were indeed made to reduce the length and complexity of the 2002 LSMS round. The second and third wave of the panel are a reduced version of the 2002 LSMS survey with some additional elements required for the panel, like details of people moving into and out of the household.

consumption of your family as…?". Possible answers are "more than adequate", "just adequate", "less than adequate". The last indicator is related to the existence of liquidity constraints: "If you wanted to, could your household afford to...?"[40]. Answers are given for each of the following items: "have friends or family for a drink or meal at least once a month", "pay for a week's annual holiday away from home", "replace worn out furniture", "buy new rather than second hand clothes", "eat meat, chicken or fish at least every second day", "keep your house adequately warm". We then construct an ordered indicator ranging from 0 to 6 measuring the number of items that the household was able to fulfill. A low value means that the household is severely constrained.

We construct two different samples from the LSMS samples. The first one is a merged sample using the 2002, 2003 and 2004 waves, each household being tracked over time. We then get an unbalanced sample of 5539 observations, with respectively 1889 households in 2002, 1842 in 2003 and 1808 in 2004. The main use of this sample is to study the receipt of transfers from all family members living outside Albania. As we have repeated information over time for these households, we will be able to control for unobserved heterogeneity at the household level through the use of fixed effects. For these households, the survey provides detailed characteristics on their demographic and socio-economic situation, including age, marital status, number of persons in the household, education, health status, position on the labor market, religion and living in an urban area among others.

Our second sample focuses more closely on adult children and concerns the 2003 wave. Indeed, the LSMS survey includes in 2003 a set of detailed questions on all the adult children of the head, either living in Albania or living in abroad. As we have also information about their potential transfers made to the household, we choose to construct a matched sample where each child (whatever the geographic location) is counted as one observation. This means that for a head with three adult children, our sample includes three child-parent pairs. This sample includes 2396 adult children, 1056 of them living in a foreign country. The main interest of this sample is to shed light on the intra-household allocation of transfers, since it indicates who is remitting within the sibship. Also, we are able to control for both the parent and the child characteristics in our regressions. For each of the different adult children, we have information about gender, age, marital status, level of education, whether they migrate with family in foreign countries, whether they live in Albania and whether they have sent money to the household.

[40] Note that this information about potential constraints is only in the 2003 and 2004 questionnaires.

2.1.3. The pattern of remittances in Albania

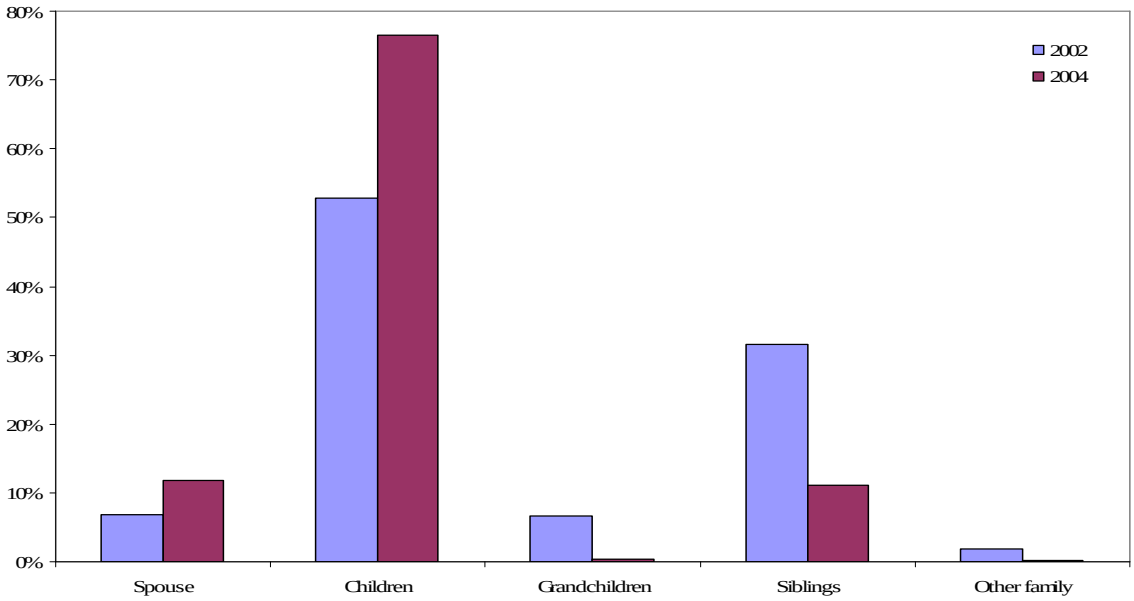
We begin with a description of the pattern of remittances in Albania. The LSMS survey allows us to explore some basic questions about the characteristics of donors and recipients. Who remits? Who receives? Where do the remitting persons live? How much is remitted? What is the main use of these remittances? In our empirical analysis, we make a difference between remittances from all persons (using the 2002-2003-2004 merged sample) and remittances from adult children (using the 2003 parent-child samples).

Let us first focus on the transfer rate. More than one household over four has benefited from remittances over the last three years, the average proportion of recipients being equal to 27.6%. Note however that there are large differences over time. The transfer rate is similar in 2002 and 2004, respectively 23.3% and 24.2%, but it amounts to 35.1% in 2003. This is puzzling as there is no particular economic shock over the period, but recall that there are significant differences in the labeling of the questions measuring transfers in the survey. Both in 2002 and 2004, the head of the household is asked about any transfers received from other people (and has then to say whether the transfer has been made by a child, a parent, a sibling, etc), while in 2003 there are several questions indicating the receipt of a transfer for each category of potential senders (children, siblings, uncles, etc.). So, our results show that the measurement of remittances is highly sensitive to the design of the questionnaires.

As shown in Table 2.1, the bulk of remittances is made by adult children to the head of the household. Among all transfers made the proportion of transfers sent by children amounts to 62.6% in 2002, 59.7% in 2003 and even 74.9% in 2004. Remittances are also frequently made by siblings, about one transfer over four[41]. In Figure 1, we calculate the distribution of the total value of remittances by type of donor. Again, we note that much of the money is sent by adult children, around 53% of the total amounts in 2002 and 77% in 2004. Much money was sent by siblings in 2002 (about 30% of the total value) than in 2004 (about 10%).

[41] An interesting result of Table 2.1 is that in 2003, the proportion of transfers made by other family members is much higher than in 2002 and 2004 (respectively 10.8% instead of 2.3% and 1.5%). As previously discussed, this difference stems from the fact that there are more detailed questions on other family senders in 2003.

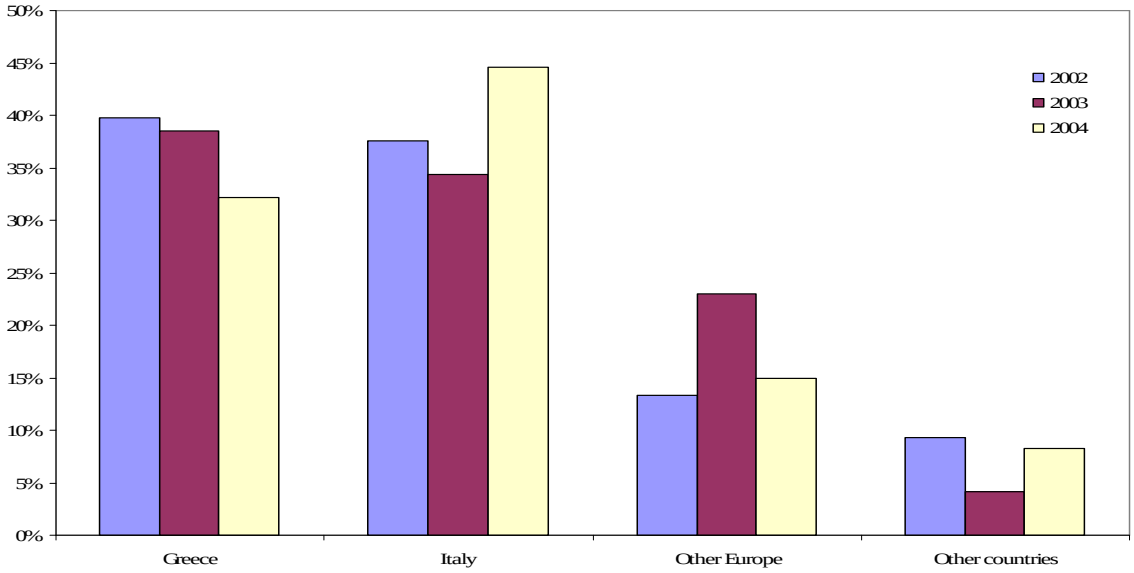
Figure 1. Distribution of the total amount of remittances, by type of donors



Source: LSMS Albania 2002, 2004.

We then perform the same calculations by location of donor using the 2002 and 2004 waves, the origin of the transfers made by all family members being not available in 2003. We evidence a very similar pattern for both years. Among all transfers made, about 42% of them come from Greece, 40% from Italy, 10% from other European countries and the rest from other countries (mainly from the United States). When considering the distribution of amounts, Figure 2 shows that Greece is the main origin of remittances to Albania in 2002 (about 40% of the total value), but Italy becomes in 2004 the first country (about 45% of the total value). We also describe in Figure 2 the origin of the total amount of remittances from adult children using the 2003 wave. More than 70% of the remittances come from Greece and Italy, and more than 20% of these flows are sent by adult children living in other European countries.

Figure 2. Distribution of the total amount of remittances, by location of donors

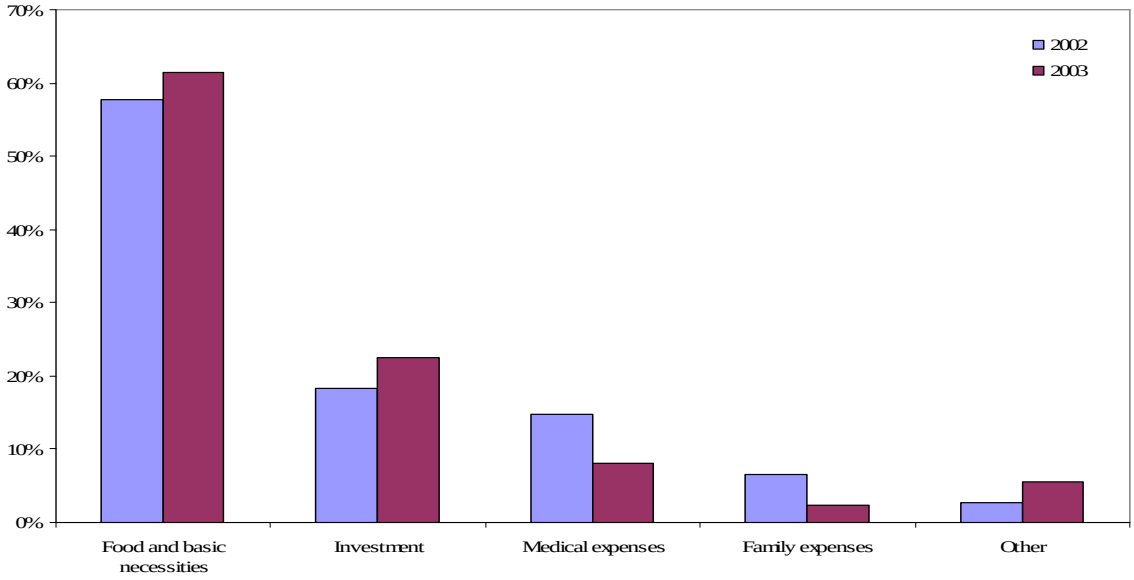


Source: LSMS Albania 2002, 2003, 2004.

Another useful information in the 2002 and 2003 questionnaires is related to the main uses of remittances by the recipient households. Answers have to be interpreted with caution as this is a self-reported information, but this gives some preliminary indications on the transfer motives. For instance, remittances related to basic necessities would be more in accordance with an altruistic explanation. In Figure 3, we first describe the proportion of transfers for the main uses described in the survey. When considering all transfers (2002 wave), we find that 58% of the remittances are claimed to supply for food and basic necessities, less than 20% are related to investment, and about 15% to medical expenses.

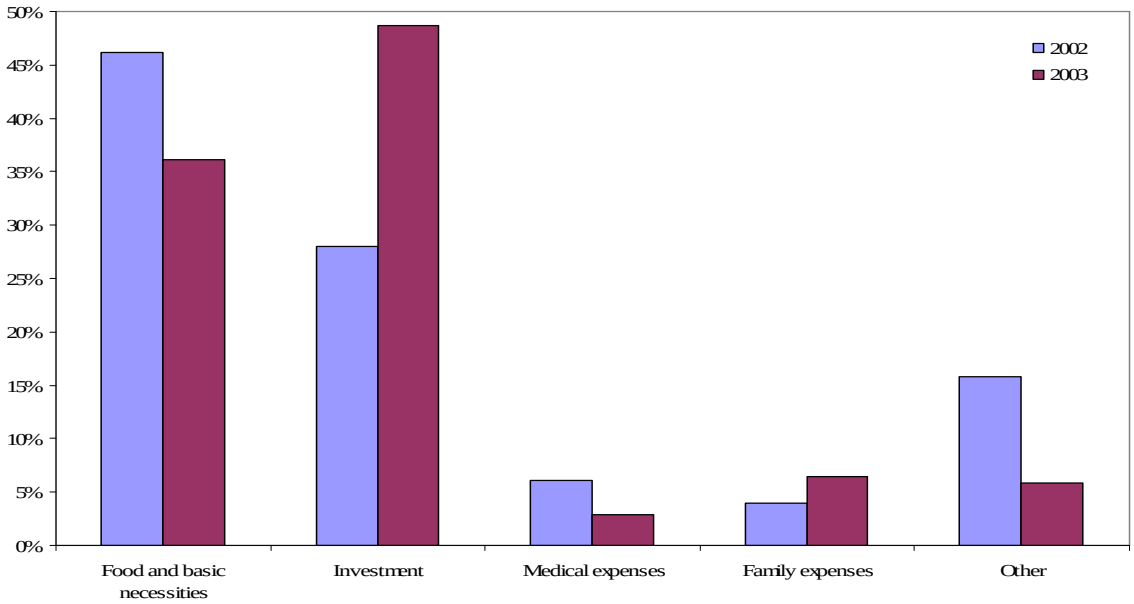
There are some differences when focusing on transfers made by non-coresident children only (2003 wave). Although most of the transfers are still related to food and basic necessities (more than 60%), we note that there are more remittances from children related to investment. Figure 4 indicates the distribution of the total amount of remittances by use of transfer. The main result is that among adult children, remittances are much higher on average when they serve an investment purpose. They represent about 20% of all transfers made in frequency, but they amount to about 50% of all the money transferred.

Figure 3. Self-reported use of the remittances



Source: LSMS Albania 2002, 2003.

Figure 4. Distribution of the total amount of remittances, by use of transfer



Source: LSMS Albania 2002, 2003.

So, these descriptive results suggest that there are both altruistic and exchange motivated transfers among Albanian households. On the one hand, all the remittances related to basic necessities are much more consistent with altruism, in the sense that they will alleviate poverty and depend on the financial situation of the recipient. On the other hand, large transfers which are invested by the recipients may be part of a family contract strategy or may be a loan repayment.

Finally, we describe the selected samples to study the pattern of remittances in Albania. In Table 2.1, we report the household's characteristics depending on whether they receive a transfer from abroad or not. On average, recipients are slightly older than non-recipients (53 years old instead of 50 in 2002), they live less frequently in couple, and their level of education is on average lower. For instance, 29.5% of the recipients have not completed primary school in 2002, while the same proportion is 21.6% among non-recipients. Recipients are also less likely to have a paid work, respectively 55.1% instead of 63.6% in 2002[42]. Another result is that recipient households are poorer on average. Using the 2002 wave, we note that the household's income of the recipients is 14.2% lower than that of non-recipients. Finally, we observe significant differences by religion and location. Recipients are less often Muslim and they live less frequently in an urban area.

[42] Very similar results are observed in 2003 and 2004 for the educational level and job status. For instance, the proportion of heads not having a job is 54.3% among recipients instead of 65.2% among non-recipients in 2004. A difference between the 2002 and 2003/2004 waves is related to health. Both in 2003 and 2004, recipients are more likely to be in poor health than non-recipients (respectively 16.5% instead of 12.5% in 2003, and 16.7% instead of 11.8% in 2004).

Table 2.1. Description of the samples

Variables		2002		2003		2004		All
		No transfer	Transfer	No transfer	Transfer	No transfer	Transfer	
Household's characteristics								
Head's age		49.902	53.045	50.078	54.490	51.548	55.927	51.619
Head's in couple		0.865	0.830	0.842	0.836	0.828	0.799	0.840
Number of persons in the household		4.549	4.442	4.489	3.853	4.565	3.710	4.383
Education	Incomplete primary	0.216	0.295	0.199	0.300	0.208	0.310	0.234
	Complete primary	0.365	0.381	0.383	0.352	0.369	0.386	0.371
	Secondary school	0.126	0.104	0.123	0.118	0.127	0.110	0.122
	Vocational	0.178	0.150	0.180	0.141	0.175	0.139	0.168
	University	0.115	0.070	0.116	0.088	0.121	0.055	0.105
Head in poor health		0.140	0.145	0.125	0.165	0.118	0.167	0.137
Head has a paid work		0.636	0.551	0.642	0.610	0.652	0.543	0.624
Household income in 2002 (log)		9.529	9.387	n.a.	n.a.	n.a.	n.a.	n.a.
Muslim		0.776	0.705	0.784	0.725	0.774	0.735	0.762
Urban area		0.517	0.483	0.531	0.460	0.532	0.427	0.507
Remittances								
Mean value of remittances		0.0	177200	0.0	n.a	0.0	112400	
Median value of remittances		0.0	100000	0.0	n.a.	0.0	80000	
Donor	Spouse	-	4.9	-	n.a.	-	7.6	-
	Children	-	62.6	-	59.7	-	74.9	-
	Grandchildren	-	5.8	-	2.3	-	1.2	-
	Siblings	-	24.4	-	27.3	-	14.9	-
	Other family	-	2.3	-	10.8	-	1.5	-
Source country	Greece	-	42.7	-	n.a.	-	41.9	-
	Italy	-	40.0	-	n.a.	-	39.2	-
	Other Europe	-	9.6	-	n.a.	-	12.7	-
	Other countries	-	7.7	-	n.a.	-	6.1	-
Number of observations		1448	441	1183	659	1370	438	5539
Proportion of donors		0.233		0.351		0.242		0.276

Source: LSMS Albania 2002, 2003 and 2004. n.a. means that the information is not available.

We now turn to the sample of non-coresident children in 2003, described in Table 2.2. The proportion of children living in Albania is 55.9% (1340/2396). There are significant differences in characteristics between children depending on their location. For instance, the proportion of daughters living in Albania is 64.2%, but 63.4% of emigrant children are sons. Emigrants are much younger than children living in Albania: 52.6% of the latter are above 35 years old, while the same proportion is only 30.2% among those who have migrated. Children living outside Albania are more educated on average[43]. Finally, 12% of children living in Albania have ever migrated and returned.

[43] The proportion of children having completed more than primary education is equal to 51.2% among those who live outside, but 41.8% among those who live in Albania.

Table 2.2. Description of the 2003 sample of non-coresident children

Variables		Children living in Albania	Children living outside Albania		
			No remittances	Remittances	All
Child's characteristics					
Sex	Male	35.8	50.5	73.9	63.4
	Female	64.2	49.5	26.1	36.6
Age	Less than 26	12.8	32.7	28.8	30.6
	26-35	34.6	35.0	42.7	39.2
	36-45	32.2	21.8	21.1	21.4
	More than 45	20.4	10.5	7.4	8.8
Education	Primary school	58.2	42.1	54.2	48.8
	Secondary school	20.3	30.6	25.7	27.9
	Vocational	12.2	13.8	14.0	13.9
	University	9.3	13.4	6.0	9.4
Country	Albania	100.0	0.0	0.0	0.0
	Greece	0.0	40.0	44.0	42.2
	Italy	0.0	36.5	35.2	35.8
	Other Europe	0.0	16.4	15.2	15.7
	Other countries	0.0	7.1	5.5	6.3
Ever migrated and returned (%)		12.0	-	-	-
Age when leaving parental home		23.2	23.3	23.6	23.4
Number of years since moving abroad		-	5.0	5.4	5.2
Lives with a spouse abroad (%)		0.0	76.3	60.1	67.4
Lives with children abroad (%)		0.0	62.7	49.6	55.5
Remittances					
Donor (%)		-	0.0	100.0	54.8
Mean value of remittances		-	0.0	131500	72100
Median value of remittances		-	0.0	50000	10000
Number of observations		1340	477	579	1056

Source: LSMS Albania 2003.

When comparing remitters and non-remitters, we find that the proportion of men is much larger in the former group than in the latter (73.9% instead of 50.5%). Remitters are slightly older, 43% of them between 26-35 years old compared to 35% among non-remitters. Children sending money are more likely to have completed only primary school, while high educated children make less often remittances. Two other interesting results concern the migration profile. On the one hand, the average number of years since migration is roughly the same for the two groups of adult children (about five years). On the other hand, children who send money are less likely to live with a spouse or with their children abroad.

2.1.4. The motives for remittances

A. *The role of the recipients' characteristics*

As the theoretical models of transfers lead to specific predictions concerning the role of explanatory variables like education or income (see Rapoport and Docquier, 2006), we first focus on the characteristics of the households who benefit from remittances. We begin with a cross-sectional econometric analysis using the 2002 wave, as there is an accurate measure of the household's income only in 2002.

Let $T^*_{i,02}$ be a latent variable measuring the propensity for a household i to receive a transfer in 2002. This indicator $T^*_{i,02}$ is expected to depend on a set of characteristics $X_{i,02}$, a vector of coefficients β_{02} and a residual $\varepsilon_{i,02}$, so that $T^*_{i,02} = \beta' X_{i,02} + \varepsilon_{i,02}$. By definition, we do not observe the latent transfer variable $T^*_{i,02}$, but the data provide information on the observed counterpart $T_{i,02}$. We have $T_{i,02} = 1$ when $T^*_{i,02} > 0$ and $T_{i,02} = 0$ otherwise. Assuming that the residual is normally distributed, the corresponding specification is a simple Probit model and we have $\Pr(T_{i,02} = 1) = \Phi(\beta' X_{i,02})$, where $\Phi(.)$ is the standard normal distribution. A second indicator for the transfer is given by its amount, which is equal to 0 when the child does not receive a transfer, and the econometric model is then a Tobit one.

Both the Probit and Tobit estimates for the 2002 wave are reported in Panel A of Table 2.3. The different covariates introduced in the regression are related to the head and concern age, marital status, level of education, number of persons in the household, poor health, job status, household income, religion (being Muslim) and living in an urban area. It is important to note here that we are not able to control for the characteristics of the potential donors. When considering the probability of receiving money, we find that it is positively correlated with the age of the respondent. As older people usually need more support and have less resource, this could be the sign of altruism. Another explanation is that older respondents are more likely to have adult children living abroad, and these children are the main providers of remittances in Albania.

Table 2.3. Determinants of remittances

A. Wave 2002

Variables		(1) Probit model		(2) Tobit model	
		Coef	t-test (abs.)	coef	t-test (abs.)
Constant		-0.430	(1.51)	-6.647	(1.58)
Household's characteristics (recipient)					
Head's age		0.008***	(2.70)	0.114***	(2.73)
Head's in couple		-0.025	(0.25)	-0.280	(0.20)
Number of persons in the household		-0.017	(0.93)	-0.191	(0.71)
Education	Complete primary	-0.030	(0.32)	-0.299	(0.22)
(Ref: Incomplete)	Secondary school	-0.157	(1.21)	-1.913	(1.01)
	Vocational	-0.183	(1.59)	-2.668	(1.59)
	University	-0.389***	(2.78)	-5.548***	(2.70)
Head in poor health		-0.220**	(2.17)	-3.271**	(2.21)
Head has a paid work		-0.133*	(1.67)	-2.024*	(1.74)
Household income in 2002 (log)		-0.019	(0.91)	-0.279	(0.90)
Muslim		-0.243***	(3.27)	-3.402***	(3.13)
Urban area		-0.049	(0.65)	-0.907	(0.82)
Number of observations		1882		1882	
Log likelihood		-996.8		-2428.6	

B. Waves 2002, 2003 and 2004

Variables		(1) Random effects Probit model		(2) Fixed effects Logit model	
		coef	t-test (abs.)	coef	t-test (abs.)
Constant		-0.630**	(2.57)		
Household's characteristics (recipient)					
Head's age		0.013***	(4.46)	0.026	(0.53)
Head's in couple		0.263***	(2.81)	0.505	(1.60)
Number of persons in the household		-0.147***	(8.03)	-0.167**	(2.45)
Education	Complete primary	-0.109	(1.08)		
(Ref: Incomplete)	Secondary school	-0.162	(1.21)		
	Vocational	-0.288**	(2.39)		
	University	-0.597***	(4.18)		
Head in poor health		-0.019	(0.23)	0.195	(1.10)
Head has a paid work		-0.082	(1.17)	-0.089	(0.54)
Muslim		-0.213***	(2.68)		
Urban area		-0.254***	(3.36)		
Number of observations		5538		2105	
Number of families		1889		705	
Log likelihood		-2911.9		-765.3	

Source: LSMS Albania 2002, 2003, 2004.

Note: Significance levels are respectively 1% (***), 5% (**) and 10% (*).

Being married does not influence the probability to receive money. The coefficient is also insignificant for the number of persons[44]. While the different educational dummies have a negative influence, the estimate becomes significant only for the University grade. That high educated respondents benefit less frequently from remittances casts doubt on the loan repayment hypothesis. According to that motive, high educated individuals are more able to enforce loan repayment and thus they should receive more money. Furthermore, the migration costs are more likely to be supported by high educated family members staying in Albania. Nevertheless, it should be noted that the migration costs remain low in Albania, as the main countries of destination are Greece and Italy.

As shown in Table 2.3, the probability to be helped is lower when the donor has a paid job, although this effect is only significant at the 10 percent level. As this means that the head benefits from a regular source of resources, then this result is more consistent with altruism. It should be noted that a negative effect of the household's income on the transfer receipt is expected under that motive. Unfortunately, this is not really the case with the LSMS data. Although we evidence a negative relationship between the transfer value and the recipient's income, the corresponding estimate is absolutely not significant at any conventional level. So, it cannot be claimed that the donors strongly account for the recipient's economic situation before sending money. Another result against the altruistic explanation is that the transfer is reduced when the head is in poor health[45]. Finally, Muslim respondents are less likely to benefit from remittances, while there is no difference between households living in rural and urban locations.

As we have repeated information on both transfers and household's characteristics (2002, 2003, 2004), we are able to control for unobserved heterogeneity at the individual level. The model we estimate may be expressed as $T_{i,t}^{*} = \beta' X_{i,t} + \delta_i + \varepsilon_{i,t}$, where i and t as subscripts indicate respectively the respondent and the year of survey, and δ_i is an unobserved individual effect. These perturbations are supposed to be normally distributed, with mean 0 and variance σ_{δ}^{2}, and the error terms $\varepsilon_{i,t}$ are also supposed to be normally distributed with

[44] A difficulty here is that we do not have exact information on the number of other family members living abroad. On the one hand, altruistic transfers should increase with the number of persons living in Albania. On the other hand, when there are more people living in the household, this may also indicate that few family members have migrated, which reduces the opportunity to receive some money from abroad.

[45] Note that we get very similar effects of the different covariates both on the probability to receive a transfer and on the amount of remittances.

unitary variance. Under the assumption that the covariates are uncorrelated with the individual effects, the corresponding model is a random effects Probit model which is estimated using Gaussian quadrature techniques (Butler and Moffitt, 1982).

As shown in Panel B of Table 2.3 (column 1), we find that the probability of receipt is an increasing function of the head's age. Transfers are also more likely when the head lives in couple and when there are few persons living in the household. Note that these covariates were not significant when considering the 2002 wave only. At the same time, being in poor health and having a job are no longer significant in the regression. In fact, the main result of interest for the motivation analysis is that high educated respondents are less likely to receive transfers from abroad, which is against the loan repayment hypothesis. The difficulty here is that we are not able to add the household's income in the list of covariates here, which prevents us from testing the relevance of the altruistic model. Our estimates just show that transfers are less likely to be received by respondents living in urban area. The standard of living is usually lower in rural areas.

As a final step, we allow for the possibility that the individual unobserved effects are correlated with the different covariates. The appropriate specification is the fixed effect Logit model described in Chamberlain (1980). The sample is then restricted to respondents who have received a transfer during at least one year, but not over the whole period. All the characteristics of the respondent that do not vary over time (like education or religion) are dropped from the regression. The sample is then restricted to 705 respondents. As shown in Panel B of Table 2.3 (column 3), we find that the number of persons living in the household has a negative effect on the probability of being helped, while the other covariates are not significant. This casts doubt on an altruistic motive as the donor should take into account the situation of the recipient, meaning that remittances should depend on health and job status for instance.

B. Who is sending remittances among children?

In the above regressions, we were only able to control for the characteristics of the recipients of the transfers as we had no description of the different donors in the LSMS survey. This is undoubtedly a shortcoming as the transfer is expected to depend on both the donor and the recipient's characteristics under either altruism or exchange.[46] In what follows, we restrict our attention to the different transfers made by adult children to their parents in 2003 using a matched parent-child sample.

As we have several children in many families, note that we are now able to control for unobserved heterogeneity at the family level. We denote respectively by j and i as subscripts the child and the parent. Drawing on a latent variable specification, the probability for a child to send money is expressed as $T^*_{j,i} = \beta' X_{j,i} + \theta_i + \varepsilon_{j,i}$, where θ_i is an unobserved family effect and $\varepsilon_{j,i}$ a random perturbation. The family fixed effect is expected to pick up all the factors related to the parents that have previously influenced the migration of the children. We use the following covariates for the children, *i.e.* sex, age, rank within the sibship, having a spouse or children living abroad, level of education and duration of the migration. The selected parental characteristics are age, marital situation, number of adult children living outside, number of persons in the household, level of education, being in poor health, having a paid work, religion and rural-urban status.

Assuming that the family fixed effects are uncorrelated with the explanatory variables, the appropriate specification is a random effects Probit model. The sample comprises 1056 parent-child pairs (585 families) and the corresponding estimates are reported in column 1 of Table 2.4. Daughters living abroad are less likely to remit than sons (at the 1 percent level). The probability of making a transfer is an increasing function of the donor's age. Younger children are presumably less able to send money because of a less secure situation in the labor-receiving country. This would be consistent with the fact that the likelihood of remitting is also increasing with the duration of migration. Another interpretation of this result is that Albanian migrants keep a strong attachment to their country of origin.

[46] For instance, controlling only for the recipient's level of education without having information on the donor's socio-economic status is likely to lead to biased results. See the further discussion in Altonji *et al.* (1997).

Table 2.4. Determinants of remittances from adult children in 2003

Variables		(1) Random effects Probit model		(2) Random effects Tobit model		(3) Fixed effects Logit model	
		coef	t-test (abs.)	coef	t-test (abs.)	coef	t-test (abs.)
Constant		0.684	(0.86)	9.404***	(4.18)		
Child's characteristics (donor)							
Female		-0.720***	(4.94)	-3.571***	(7.69)	-1.780***	(4.72)
Age		0.045**	(2.54)	0.138***	(2.61)	0.128*	(1.84)
Rank within the sibship		0.150**	(2.27)	0.429**	(2.01)	0.336	(1.55)
Lives with a spouse abroad		-0.721***	(3.48)	-2.477***	(3.83)	-0.690	(1.35)
Lives with children abroad		-0.354*	(1.79)	-1.788***	(2.85)	-1.485***	(2.80)
Education	Secondary school	-0.302*	(1.82)	-1.217**	(2.31)	-0.896*	(1.87)
(Ref: Primary)	Vocational	-0.272	(1.40)	-0.754	(1.22)	-0.800	(1.58)
	University	-0.616**	(2.29)	-2.251***	(2.60)	-1.168	(1.42)
Duration of the migration		0.070***	(3.35)	0.305***	(4.83)	0.142**	(2.46)
Household's characteristics (recipient)							
Head's age		-0.013	(0.87)	-0.064	(1.45)		
Head's in couple		0.152	(0.68)	0.383	(0.61)		
Number of adult children living outside		-0.091	(1.48)	-0.105	(0.58)		
Number of persons in the household		-0.052	(1.06)	-0.199	(1.42)		
Education	Complete primary	0.230	(1.10)	0.666	(1.15)		
(Ref: Incomplete)	Secondary school	0.519	(1.49)	1.883*	(1.89)		
	Vocational	0.066	(0.24)	0.377	(0.48)		
	University	-0.288	(0.85)	-1.039	(1.08)		
Head in poor health		0.090	(0.44)	0.092	(0.16)		
Head has a paid work		-0.102	(0.49)	-0.684	(1.16)		
Household income in 2002 (log)		-0.720	(1.09)	-3.256*	(1.71)		
Muslim		-0.104	(0.57)	-0.135	(0.26)		
Urban area		-0.515***	(2.67)	-1.449***	(2.64)		
Number of observations		1056		1056		359	
Number of families		585		585		118	
Log likelihood		-620.0		-2555.9		-84.3	

Source: LSMS Albania 2003.

Note: Significance levels are respectively 1% (***), 5% (**) and 10% (*).

An important covariate in our context is education. According to our estimates, high educated children (especially when they have studied at University) are less likely to send money to their parents. According to the loan repayment motive, migrants are considered as borrowers and they have to send money to reimburse their family who has supported emigration costs and investment in human capital. A positive correlation between remittances and the migrant's education level is thus expected, meaning that the negative effect of the donor's education evidenced in Albania allows us to rule out that motivation. A last finding is the lower probability of remittances for the children who live either with their spouse or with their children in the labor-receiving country. Such migrants are clearly less likely to return to their country of origin and they have also fewer resources to send to their parents.

A striking feature is that the characteristics of the parents hardly affect the probability of receiving money. However, with respect to the results discussed before in Table 2.3, it should be noted that we now only focus on the transfers made by children to their parents.[47] According to Table 2.4, we find that parents living in a urban area are less likely to receive remittances. This could be evidence of altruistically motivated transfers, as poverty is mainly rural Albania. As we do have a good measure of the respondent's resources in 2003, we control for the level of household income in 2002 in the regression. While the corresponding coefficient is not significant with the Probit specification, we evidence a negative correlation between the amount of transfers and the recipient's income when estimating the random effects Tobit model (column 2, Table 2.4).

That less well-off parents receive more money from abroad is a priori more consistent with altruism than with exchange. Nevertheless, if children were really taking into account the well-being of their parents, then they should allow send more money to their parents when the latter do not have a job or are in poor health. This is clearly not the case according to the Albanian data, which suggests that children are not so strongly altruistic. At the same time, because they live in a distant country, it could be that the children have only an imperfect knowledge of the economic situation of their parents.

As a final step, we estimate a fixed effects Logit model. It indicates the probability that a child sends money to the parent among families in which at least one adult child living

[47] The use of matched samples remains scarce in the literature on remittances, an interesting exception being Osili (2007). As we introduce both the characteristics of the child and the parent in the regression, we have also estimated the random effects Probit model with the parental variables only. Again, we do not find that the characteristics of the parent influence the receipt of a transfer.

abroad, but not all, makes a transfer. The number of observations is hence reduced to 359 (118 families), and parental characteristics are no longer included as they do not vary among the children of a given sibship. The corresponding estimates are in column 3 of Table 4. With respect to the random effects specification, we find very similar results although a few covariates are no longer significant.[48] The main effects are that the probability of sending money is higher for daughters than for sons, it is reduced when the migrant child lives with children abroad and it is an increasing function of the time spent in the labor-receiving country. Also, we still evidence a negative correlation between remittances and education, but the relationship is hardly significant at conventional level.

2.1.5. Conclusion

To summarize, our different results from panel data and parent-child matched samples do not provide unambiguous evidence in favor of a specific motive of remittances in Albania. The main conclusion is that our estimates are here not consistent with the loan repayment model, but it remains much more difficult to claim that remittances are either altruistically or exchange motivated in Albania. This stems from several difficulties pointed out in the remittances literature (Rapoport and Docquier, 2006). On the one hand, it is uneasy to discriminate between competing theories of remittances as different models may be characterized by similar predictions. On the other hand, there may be some heterogeneity in the transfer motives within the population. Some migrants may send money because of altruism while the transfers from other migrants are part of an exchange, and a given migrant may have several motivations depending on who is the recipient.[49]

It is finally interesting to compare these findings with our previous estimates derived from macroeconomic data, which were in favor of the loan repayment hypothesis. While it could be argued there that both the macroeconomic and microeconomic estimates are not consistent, this is definitely not the case since we have considered two different countries, respectively Romania and Albania. For the sake of robustness, we have attempted to conduct an additional macroeconomic analysis for Albania using bilateral data collected for 2006, following exactly the same methodology. All the details and estimates are described in Duval (2009, appendix

[48] But recall that the number of observations is strongly reduced when estimating the conditional Logit model.

[49] For instance, a migrant may send money to poor parents because of altruistic considerations and to siblings as part of an exchange if the latter supervise the various investments made by the migrant in his country of origin.

1.2, pp. 58-62). Contrary to the situation observed in Romania, the amount of remittances is negatively correlated with the level of education of the migrants (at the 10 percent level), while the coefficient associated to distance is positive. An additional conclusion of our empirical analysis is thus that localization matters, migrants from Romania and Albania being characterized by different transfer motivations.

2.2. Remittances and financial situation

2.2.1. The effect of remittances on the recipient's financial situation

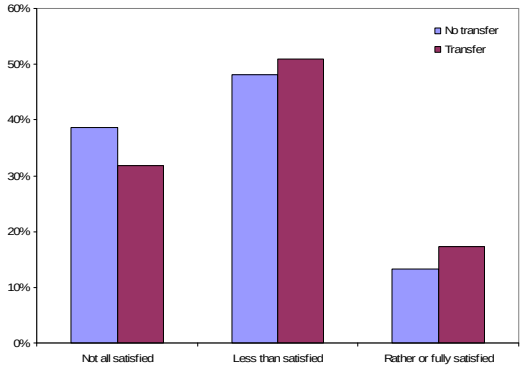
Since we cannot really understand the motives of migrants who send money to their family, we now focus on the impact of these transfers on the recipients. Note that this issue is not so disconnected from the motivation analysis. For instance, under altruism, one would expect that transfers strongly improve the economic situation of the recipients (especially as they should be in a needy position). Conversely, under exchange, transfers should primarily be invested and only part of the transfers should benefit the Albanian recipients.

Our analysis is based on three indicators related to the subjective financial satisfaction, the adequateness of the current level of food consumption, and expenditures the household can afford to. We describe in Figure 5 the relationship between these indicators and the receipt of a transfer. We first consider all the transfers received by the households over the 2002-2004 period (Panel A). The proportion of respondents being not satisfied at all amounts to 39% among the non-recipients, while it is equal to 32% among those who have benefited from remittances. At the same time, those who have received a transfer are more likely to be satisfied (17% instead of 13%). In a similar way, recipients claim more often that their level of consumption is just or more than adequate than non-recipients (64% instead of 56%). Finally, those who receive remittances are less likely to be liquidity constrained.

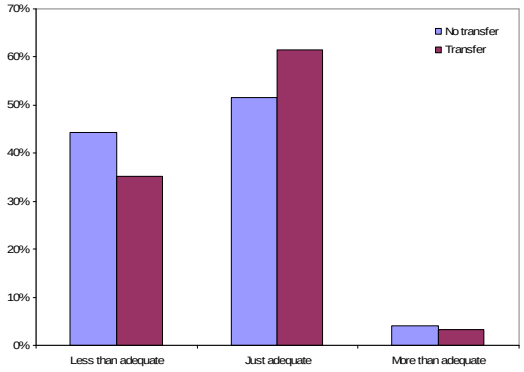
Figure 5. Receipt of remittances and financial situation

A. All remittances (2002, 2003, 2004)

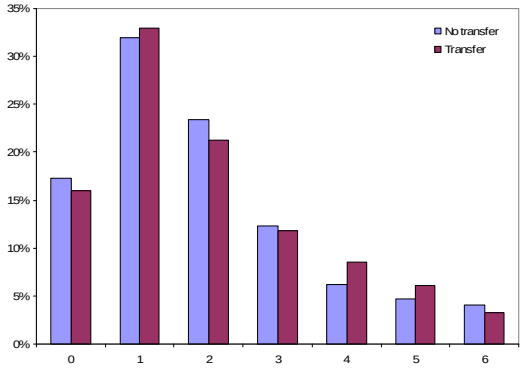
Current financial satisfaction



Adequate level of food consumption

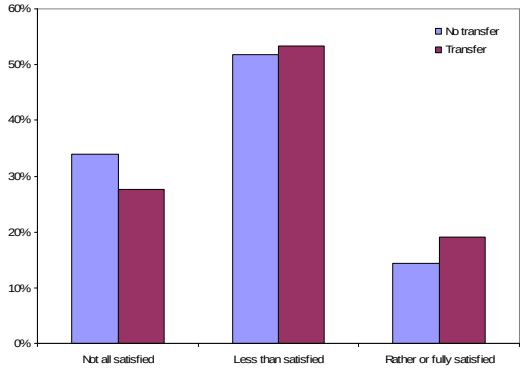


Number of expenditures the household can afford to

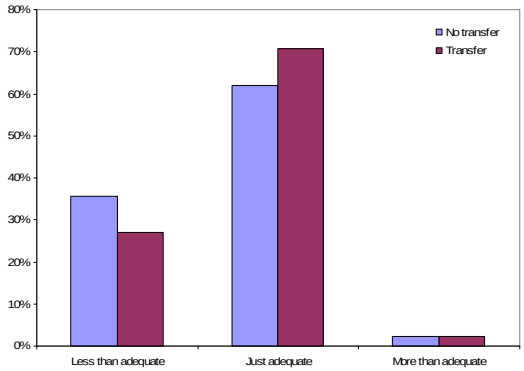


B. Remittances from adult children (2003)

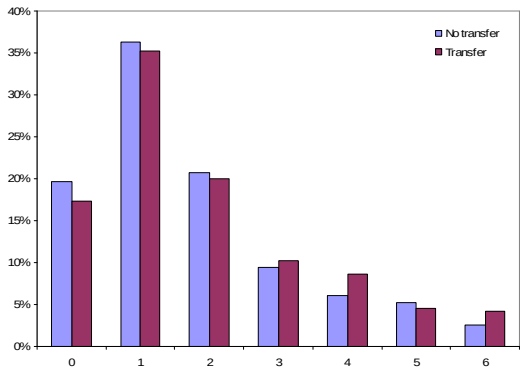
Current financial satisfaction



Adequate level of food consumption



Number of expenditures the household can afford to



Source. LSMS Albania 2002, 2003, 2004

Very similar results hold when focusing on the transfers made by adult children using the 2003 wave (Panel B, Figure 4). For the various economic indicators, we find that respondents are in a better financial position when receiving remittances and the improvement of their situation is significant. For instance, 36% of the respondents who are not financially helped by their migrant children claim that their current level of food consumption is less than adequate, while the proportion is 27% among those who receive remittances. Albeit preliminary, these findings suggest that transfers bring a large contribution to the recipients' situation. We further investigate this issue using an econometric analysis.

A. Transfers from all migrants

We focus here on the various remittances sent by all migrants to the respondents and study the determinants of the financial situation using the longitudinal data over the period 2002-2004. To explain the various outcomes, we introduce the following characteristics related to the respondent, i.e. gender, age, marital status, number of persons in the household, educational attainment, health status, having a job, religion and rural-urban status. We also introduce in the regression a dummy variable which is equal to 1 when the respondent receives a transfer from abroad and to 0 otherwise. As our different indicators of financial situation are given by ordered variables, we turn to random effect ordered Probit models as we have repeated information over time for each respondent.

The different results are reported in Panel A of Table 2.5. For the three outcomes, we evidence a better financial situation for respondents living in couple, having achieved high education, being in good health and having a job. All these results are in accordance with expectations. For instance, a high level of education is associated to a higher level of permanent income, meaning that people should have more resources to devote to their own consumption. While the number of persons in the household is negatively correlated with both the satisfaction with financial situation and the adequateness of the current level of food consumption, it does not significantly affect the number of expenditures the household can afford to. A similar pattern is observed when the respondent lives in an urban area.[50]

[50] This result may be more surprising as poverty is essentially rural in Albania. An explanation is that in rural areas, households may rely on subsistence agricultural activities to fulfill their own needs.

Table 2.5. Determinants of financial situation, with exogenous remittances

A. Random effect ordered Probit estimates

Characteristics of the head		(1A) Satisfaction with financial situation		(2A) Adequate level of food consumption		(3A) Expenditures the household can afford to	
		coef	t-test (abs.)	coef	t-test (abs.)	coef	t-test (abs.)
Female		0.198*	(1.94)	0.090	(0.90)	0.105	(0.87)
Age		0.026*	(1.89)	-0.001	(0.09)	0.035**	(2.12)
Age² (/100)		-0.007	(0.57)	0.015	(1.17)	-0.020	(1.33)
In couple		0.422***	(4.22)	0.201**	(2.04)	0.231**	(2.01)
Number of persons in the household		-0.032**	(2.07)	-0.028*	(1.84)	0.026	(1.35)
Education	Complete primary	0.157*	(1.78)	0.178**	(2.09)	0.164	(1.60)
(Ref: Incomplete)	Secondary school	0.534***	(4.62)	0.548***	(4.91)	0.779***	(5.79)
	Vocational	0.540***	(5.18)	0.451***	(4.49)	0.654***	(5.36)
	University	1.183***	(9.73)	1.143***	(9.73)	1.635***	(11.49)
Head in poor health		-0.560***	(7.91)	-0.398***	(5.52)	-0.606***	(7.27)
Head has a paid work		0.407***	(6.92)	0.348***	(5.81)	0.276***	(3.79)
Muslim		-0.116*	(1.70)	-0.097	(1.48)	-0.167**	(2.11)
Urban area		-0.172***	(2.68)	-0.216***	(3.47)	0.095	(1.28)
Receipt of remittances		0.194***	(4.01)	0.254***	(5.09)	0.070	(1.26)
Log likelihood		-4809.8		-4038.8		-5653.3	

B. Fixed effect ordered Probit estimates

Characteristics of the head	(1B) Satisfaction with financial situation		(2B) Adequate level of food consumption		(3B) Expenditures the household can afford to	
	coef	t-test (abs.)	coef	t-test (abs.)	coef	t-test (abs.)
Age	0.321**	(2.36)	0.539***	(3.62)	1.849***	(12.56)
Age² (/100)	-0.145	(1.14)	-0.165	(1.20)	-0.066	(0.48)
Number of persons in the household	0.103*	(1.92)	-0.040	(0.67)	-0.392***	(6.38)
Head in poor health	-0.408***	(2.84)	-0.222	(1.45)	-0.523***	(3.71)
Head has a paid work	0.496***	(3.96)	0.524***	(3.66)	0.465***	(3.87)
Receipt of remittances	0.215**	(2.20)	0.528***	(4.70)	0.853***	(9.70)

Source : LSMS Albania 2002, 2003, 2004.

Note: (1A), (1B) and (1C) are random effect Ordered Probit estimates, (1B), (2B) and (3B) are estimates from fixed effect ordered Probit models estimated through a minimum distance estimator. Significance levels are respectively 1% (***), 5% (**) and 10% (*).

A result of interest for our study is that the receipt of respondents makes respondents more satisfied about their current financial situation. The coefficient associated to the transfer is positive and significant at the 1 percent level. A similar result holds for the adequateness of the current level of food consumption. However, there is no significant correlation between remittances and the number of expenditures the household can afford, although the coefficient remains positive. That the receipt of remittances improves the satisfaction with current financial situation and consumption seems consistent with our results from the motivation analysis, as they suggest that migrants were more likely to support households in a poor economic situation and needing financial support. Remittances dramatically improve the situation of those left behind, especially as poverty is substantial in Albania.

As the individual unobserved effects may be correlated with the characteristics of the respondents, we have also estimated a fixed effect ordered Probit regression. A difficulty here is that there is no direct approach to estimate such model. We thus proceed in the following way. Assuming that the ordered financial indicator F may take values from 1 to K, we estimate a set of conditional Logit models by grouping adjacent outcomes for the dependent variables F^k (with $k = 1,...K$) such that $F^k = 1$ if $F^k > k$ and $F^k = 0$ otherwise. For each F^k, we get a consistent estimate β^k of β using the fixed effects Logit estimator.

We then rely on a Classical Minimum Distance estimator to get a restricted estimator for β from the various β^k. Specifically, we solve $\min_\delta \left(\hat{\vartheta} - H\beta\right)'\hat{V}^{-1}\left(\hat{\vartheta} - H\beta\right)$, where $\hat{V}$ is a weighting positive definite matrix and ϑ is the unrestricted vector $\vartheta = (\beta^{1'},...,\beta^{K-1'})'$. The mapping from ϑ to β is linear, with $\vartheta = H\beta$. The solution is $\hat{\beta} = \left(H'\hat{V}^{-1}H\right)^{-1}\left(H'\hat{V}^{-1}\hat{\vartheta}\right)$ and the asymptotic covariance matrix is given by $V\left(\hat{\beta}\right) = \left(H'\hat{V}^{-1}H\right)^{-1}$. Results from the fixed effects ordered Probit model are in Panel B of Table 2.5[51].

In what follows, we restrict our attention to the role of remittances. For the three financial outcomes under consideration (current income satisfaction, consumption satisfaction and number of expenditures the household can afford to), we get a positive coefficient for the transfer dummy. So, our findings suggest that remittances significantly improve the financial situation of their recipients. Nevertheless, as shown in Dimova and Wolff (2008), a difficulty here is that remittances are unlikely to be exogenous. Indeed, the migrant's decision to transfer resources to the family living in Albania is itself expected to depend on the recipient's

[51] Again, the education variable is no longer in the regression as it does not vary over time.

economic status, meaning that the coefficient associated to the remittances variables in the various ordered regressions is likely to be biased under the exogeneity assumption.

When using the longitudinal sample, we are only able to control for the respondent's characteristics in the ordered regressions. It thus seems difficult, and even unlikely, to rely on an instrumental variable approach to correct the endogeneity bias[52]. As the receipt of remittances from abroad is like a treatment (recipients being the treated group and non-recipients the control group), we consider an alternative strategy based on the propensity score matching estimator as this method is expected to reduce the bias in the estimation of treatment effects with observational data sets (see Becker and Ichino, 2002). For that purpose, the comparison of outcomes between recipients and non-recipients has to be performed using treated and control subjects who are as similar as possible. The pre-treatment characteristics of each respondent are summarized into a single-index variable, the so-called propensity score. The extent to which this bias is reduced depends on the quality of the control variables on which the propensity score is computed and the matching performed[53].

We proceed in the following way with the Albanian data. We first estimate a Probit model to explain the probability for each respondent to receive at least one transfer from abroad over the period 2002-2004, *i.e.* the treatment T. The list of covariates X introduced in the regression includes age (with a quadratic profile), marital status, number of persons in the household, educational attainment (four dummies), being in poor health, work status, religion and urban-rural status. We then compute the propensity score $\Pr(T=1|X)=E(T|X)$. Finally, we estimate the causal effect of the receipt of transfers on the respondent's financial situation using a Kernel matching estimator (Heckman *et al.*, 1998). The average effect of the treatment on the treated is given by $ATT=E(F_1-F_0|T=1)$, F_1 and F_0 being the outcomes in the situations of respectively treatment (receipt of remittances) and no treatment[54].

[52] To implement an IV estimation, one would need a variable strongly correlated with the remittances variable, but having no impact on the financial situation of the respondent.

[53] Note that there is no bias when the exposure to treatment can be considered to be purely random among respondents who have the same value of the propensity score. However, this does not eliminate the bias generated by unobservable factors.

[54] When implementing the propensity score matching analysis, we check the relevance of the balancing property (the means of each explanatory variable should not differ between treated and control units after the matching). Results from the various Probit regressions estimated to compute the propensity score are available upon request.

We report in Table 2.6 the results of the propensity score analysis for our various financial outcomes. Let us focus here on the matching estimates when all remittances over the period 2002-2004 are taken into account. Under the exogeneity assumption (unmatched estimate), we find that the difference in satisfaction with financial situation between the treated and the control groups is equal to 0.105, but the ATT estimate amounts to 0.131 and is significant at the 1 percent level. Similar results are observed for the adequateness of the level of food consumption (the unmachted difference is 0.084 while the ATT estimate is 0.102), and for the number of expenditures the household can afford to. The unmatched estimator is equal to 0.062 and not statistically significant, but it is more than three times higher (0.221) with the propensity score matching analysis and significant at the 1 percent level.

Table 2.6. Propensity score estimates of the effect of remittances on financial satisfaction

Outcome	Treated	Controls	Difference	t-test (abs.)
All remittances (2002-2003-2004)				
Satisfaction with financial situation				
Unmatched	0.852	0.748	0.105	(5.12)
ATT	0.852	0.721	0.131	(6.11)
Adequate level of food consumption				
Unmatched	0.680	0.596	0.084	(4.97)
ATT	0.680	0.577	0.102	(5.96)
Expenditures the household can afford to				
Unmatched	1.954	1.893	0.062	(1.09)
ATT	1.954	1.733	0.221	(3.63)
Remittances from adult children (2003)				
Satisfaction with financial situation				
Unmatched	0.914	0.804	0.109	(2.63)
ATT	0.918	0.796	0.122	(2.66)
Adequate level of food consumption				
Unmatched	0.753	0.667	0.086	(2.77)
ATT	0.752	0.647	0.106	(3.05)
Expenditures the household can afford to				
Unmatched	1.877	1.717	0.160	(1.66)
ATT	1.892	1.554	0.338	(3.20)

Source : LSMS Albania 2002, 2003, 2004.
Significance levels are respectively 1% (***), 5% (**) and 10% (*).

So, according to the Albanian data, we can argue that remittances have a causal, positive effect on the financial position of the recipients. Nevertheless, it should be noted that the propensity score matching analysis does not allow to control for selection bias due to unobservables, meaning that our results have to be interpreted with cautious.

B. The case of remittances sent by adult children

We now extend our investigations to the case of remittances sent by adult children in 2003, the matched child-parent sample offering some opportunities to apply an IV estimator. As a preliminary step, we investigate the household characteristics that influence our three financial indicators (income satisfaction, adequateness of consumption and possible expenditures) using standard ordered Probit models. The different explanatory variables are gender, age, marital status, number of persons in the household, level of education, being in poor health, having a job, religion and rural-urban status. We also include the exogenous receipt of remittances in the various regressions whose results are in Panel A of Table 2.7.

According to the data, satisfaction with current financial situation is higher when the respondent is highly educated, has a job and is in good health. Similar findings holds for the adequateness of food consumption and expenditures the household can afford to. Our main result is the positive effect of the remittances dummy, which is significant at the 1 percent level for the three outcomes. As expected, those who benefit from transfers sent by their adult children living abroad are more likely to be in a better off position. Note that this finding was expected, given the previous positive effect evidenced for all transfers from abroad and the crucial role of children in supporting the Albanian households.

To control for the potential selection of poorer households in the program (*i.e.* receipt of remittances), we first apply the propensity score matching analysis on the parent-child sample. When considering the unmatched sample, the differences between the treated and the control groups are respectively equal to 0.109 for satisfaction with current financial situation, 0.086 for adequateness of food consumption and 0.160 for number of potential expenditures (see Table 2.6). Once properly matched, the corresponding values for the ATT estimate are respectively equal to 0.122, 0.106 and 0.338, all significant at the 1 percent level[55]. So, the positive impact of transfers on living standard remains once we control for selection due to observable characteristics.

[55] Note that we get very similar results when considering either all the transfers from abroad or only transfers from adult sibling. For instance, the ATT estimate is equal to 0.122 when using the 2003 parent-child sample, while it amounts to 0.131 when considering the longitudinal sample with all transfers. The difference is larger when considering the number of expenditures the household can afford to, the ATT estimate being higher with remittances from adult children.

Table 2.7. The impact on remittances from adult children on satisfaction

A. With exogenous receipt of remittances

Characteristics of the head		(1A) Satisfaction with financial situation		(2A) Adequate level of food consumption		(3A) Expenditures the household can afford to	
		coef	t-test (abs.)	coef	t-test (abs.)	coef	t-test (abs.)
Female		-0.076	(0.39)	0.107	(0.50)	0.032	(0.15)
Age		-0.051	(1.37)	-0.036	(0.81)	0.046	(1.26)
Age² (/100)		0.039	(1.34)	0.036	(1.04)	-0.036	(1.23)
In couple		0.109	(0.59)	0.360*	(1.74)	0.140	(0.67)
Number of persons in the household		-0.021	(0.87)	-0.016	(0.54)	-0.004	(0.18)
Education	Complete primary	0.066	(0.66)	0.024	(0.22)	0.022	(0.24)
(Ref: Incomplete)	Secondary school	0.183	(0.96)	-0.075	(0.39)	0.469***	(2.92)
	Vocational	0.216*	(1.91)	0.219	(1.61)	0.150	(1.32)
	University	0.551***	(3.42)	0.782***	(4.14)	0.714***	(4.66)
Head in poor health		-0.392***	(4.14)	-0.358***	(3.40)	-0.494***	(5.16)
Head has a paid work		0.243***	(2.61)	0.295***	(2.78)	0.267***	(2.87)
Muslim		-0.238***	(2.89)	-0.132	(1.45)	-0.049	(0.63)
Urban area		-0.021	(0.24)	-0.149	(1.51)	0.251***	(2.92)
Receipt of remittances		0.233***	(3.13)	0.266***	(3.24)	0.214***	(3.17)
Log likelihood		-986.50		-677.34		-1634.01	

B. With endogenous receipt of remittances

Characteristics of the head		(1B) Satisfaction with financial situation		(2B) Adequate level of food consumption		(3B) Expenditures the household can afford to	
		coef	t-test (abs.)	coef	t-test (abs.)	coef	t-test (abs.)
Female		-0.066	(0.35)	0.113	(0.53)	0.031	(0.15)
Age		-0.045	(1.20)	-0.030	(0.67)	0.046	(1.26)
Age² (/100)		0.034	(1.17)	0.031	(0.88)	-0.035	(1.22)
In couple		0.104	(0.57)	0.353*	(1.74)	0.142	(0.70)
Number of persons in the household		-0.014	(0.59)	-0.010	(0.33)	-0.004	(0.18)
Education	Complete primary	0.041	(0.41)	0.001	(0.01)	0.019	(0.21)
(Ref: Incomplete)	Secondary school	0.149	(0.78)	-0.100	(0.53)	0.468***	(2.92)
	Vocational	0.224**	(1.99)	0.227*	(1.67)	0.151	(1.33)
	University	0.573***	(3.47)	0.800***	(4.20)	0.715***	(4.67)
Head in poor health		-0.399***	(4.22)	-0.364***	(3.48)	-0.497***	(5.19)
Head has a paid work		0.257***	(2.72)	0.308***	(2.88)	0.270***	(2.92)
Muslim		-0.234***	(2.85)	-0.128	(1.41)	-0.052	(0.74)
Urban area		0.042	(0.46)	-0.088	(0.78)	0.252***	(2.92)
Receipt of remittances		0.569**	(2.44)	0.572**	(2.08)	0.224***	(3.11)
Coefficient of correlation		-0.228	(1.49)	-0.207	(1.14)	-0.007	(0.44)
Log likelihood		-1610.24		-1301.36		-2258.88	

Source: LSMS Albania 2003.

Note: (1A), (1B) and (1C) are Ordered Probit estimates, (1B), (2B) and (3B) are estimates from a simultaneous model comprising one ordered Probit equation for the financial outcome with endogenous receipt of remittances and one Probit equation for the receipt of remittances.

To assess the robustness of our findings, we finally turn to an IV estimator which allows us to control both for observables and unobservables. The idea is as follows. On the one hand, the household's economic situation is expected to depend on the respondent's characteristics and on the transfer variable. On the other hand, the endogenous transfer variable will be affected by both the respondent and the donor's characteristics. So, this means that the child's characteristics will be used as instrumental variables as they will directly impact the decision to send money to the parents, while they should not directly affect the household situation (but they should have an indirect effect through the transfer).

To take the potential endogeneity of the transfer variable, we proceed in the following way. We estimate a simultaneous, recursive model which comprises one ordered Probit equation related to the economic outcome of the household and one Probit equation related to the receipt of remittances. The crucial issue here is that we assume a bivariate normal distribution for the residuals of each equation. The corresponding log-likelihood function includes terms that are bivariate normally distributed and the model is estimating by a full information maximum likelihood method. Results are in Panel B of Table 2.7.[56]

Once endogeneity is properly taken into account, we still find a positive impact of the remittances variables on the various economic indicators under considerations. Both for satisfaction with current situation and adequateness of food consumption, the endogenous transfer estimate is now about twice higher than under the exogeneity assumption. However, the transfer coefficient in the number of affordable expenditures equation does not really change when estimating the recursive specification. In all equations, the receipt of remittances is significant at the 1 percent level. So, our different findings using selection techniques both on observables and unobservables appear robust and they show that in Albania, remittances from adult children have a causal effect on the economic situation of their recipients.

As they stand, these results provide mixed evidence on the motivation of remittances. That the receipt of transfers improves the adequateness of food consumption or the number of affordable expenditures indicates that remittances are mostly related to the most basic needs of the households living in Albania. A situation where the donors make transfers to poor, liquidity constrained recipients is consistent with altruism. At the same time, the numerous transfers made by the adult migrant children suggest that they are particularly involved in the everyday life of their parents (and more generally of all the family members left in Albania).

[56] In our presentation, we only focus on the determinants of the household economic situation. Detailed results of the recursive models (included estimates related to the transfer receipt) are available upon request.

This could be interpreted as an intention to return home later, especially for those who live alone in the labor-receiving country.

This suggests that the motivations for the children to send money to their parents may be part of an exchange, in the sense that the transfers made today to the family will be helpful for the donors once being back in Albania. This exchange is definitely not like a loan repayment, since the migrants do not strictly reimburse their education and migration costs, which is again in accordance with estimates from bilateral data in that country (see Duval, 2009). Unfortunately, the data do not allow us to further test the assumption of exchange-motivated transfers. For that purpose, one would need panel data covering a longer period of time, in order to get more information on the transfers and on return migration. Also, more detailed data are needed to understand how the money from remittances is used by their recipients.

2.2.2. Income expectations: Do remittances matter?

2.2.2.1. Introduction

Income expectations of households play a central role in many economic fields. They will for instance influence decisions on consumption, savings, portfolio choice, labor supply, schooling or fertility. Despite the importance and implications of financial expectations, the empirical literature on this issue remains rather scarce, especially in developing and transition countries where such information is rarely available. Previous micro-econometric studies on income expectations have essentially focused on the two following aspects.

On the one hand, some papers have investigated how agents were forming their income expectations. While it is commonly assumed that income expectations are rational, Das and van Soest (1999) focus on expectations formation by comparing expected and realized changes in financial situation using panel data on Dutch households. They show that the hypothesis of rational expectations is rejected in the Netherlands. Nicholson and Souleles (2001) also reject the assumption of rational expectations in the United States using data on income expectations of medical students over a 25 year time period. On the other hand, several studies have examined the impact of income expectations on economic individual decisions. In Italy, Guiso *et alii* (1996) find that expectation of future borrowing constraints induces individuals to keep a lower proportion of their wealth in the form of risky assets.

In this section, we use subjective information about past, current and future financial situation in Albania using longitudinal data to study the dynamics of income changes. Our analysis then draws on the two influential contributions of Das and van Soest (1997, 1999), whose primary interest was to understand household income growth in the Netherlands using subjective information[57]. However, with respect to these authors, we focus more closely on the role of the composition of household resources and especially remittances on income expectations. In the context of a less developed country where incomes are much lower, it seems worthwhile to know more about the influence of past changes in financial situation on current expectations and the role of private transfers from abroad.

For various reasons, the case of Albania is a very relevant one. Indeed, Albania is characterized by a high uncertainty in terms of income due to the transformation from the communist system towards a market economy. The particularities of Albania are a combination of extreme poverty and lack of job opportunities, with high rate of emigration. In that context, remittances are a crucial source of income for households (Mansoor and Quillin, 2006). These transfers are then expected to strongly influence household expectations, and in turn economic decisions like consumption, savings, schooling or fertility among others. To the best of our knowledge, our analysis is the first one to account for the potential role of remittances on financial expectations. We also contribute to the scarce existing literature on household financial perceptions in developing or eastern countries, in particular Ravallion and Lokshin (2002) and Senik (2004) in Russia, Kingdon and Knight (2007) in South Africa and Gunatilaka and Knight (2007) in China.

For our empirical analysis, we use again the Living Standard Measurement Study (LSMS hereafter) conducted in Albania from 2002 to 2004. The high quality of these longitudinal data is unprecedented for this transition country. It includes numerous questions on objective covariates like education, religion, employment, migration or remittances, and on subjective perceptions of financial situation. In particular, for the three waves, respondents indicate their satisfaction with respect to their current situation and also expectations and realized changes

[57] Using the Dutch Socio-Economic panel, Das and van Soest (1997, 1999) provide estimates of expected changes in income and estimates of a dynamic panel model on income growth. . Their main results are that i) respondents are more likely to expect an income decrease than an income increase, ii) realizations are substantially better than expectations, and iii) income change expectations strongly depend on income changes in the past. For further evidence on subjective income expectations, see Dominitz and Manski (1997).

in financial situation. The LSMS survey offers then a unique opportunity to study dynamic aspects of income satisfaction in Albania along with the influence of remittances.

Using subjective information on income changes requires some explanations as such data have been subject to controversial debates among economists. Until recently, subjective questions were rarely used. Many economists were skeptical about the empirical content of subjective data, with problems concerning psychological mechanisms, interactions with the surveyor, formulation of the questions or difficulty to interpret the answers among other things[58]. The situation is really different nowadays, with a rapid growth in the use of subjective data. Furthermore, economists have shown that subjective questions were indeed reliable and useful (see for instance Di Tella and MacCulloch, 2006, Frey and Stutzer, 2002): subjective data explain not only individual decisions, but also choices of public policies.

To study the dynamics in income changes in Albania using the LSMS data, we proceed in the following way. Firstly, we investigate the household characteristics that influence income expectations over time. We focus in particular on the receipt of remittances and on past changes in financial situation experienced by respondents. In a second step, we compare realizations and expectations in financial situation to know whether Albanian households underestimate or overestimate their future income growth. In so doing, we provide a test of the assumption of rational expectations in Albania.

The use of panel data allows us to control for unobserved heterogeneity at the individual level in our econometric analysis. We turn to random effects and fixed effects ordered Probit models to explain self-reported financial satisfaction. Our main findings are that financial expectations are strongly affected by realized changes in the past and that the receipt of remittances matters. Those who have benefited from foreign transfers have on average better financial expectations. Finally, we observe that Albanian households tend to significantly overestimate their future financial situation.

The remainder of this section 2.2.2 is organized as follows. We first provide background on economic and migratory situation in Albania and describe the LSMS data. Second, we describe statistics on the current, past and future financial situation of the households. Third, we present our econometric strategy and investigate the role of individual characteristics on expected changes in financial situation using ordered models. Forth, we compare expectations with realizations. Finally, we conclude.

[58] On the methodological aspects of using subjective data and their advantages and drawbacks, see Senik (2005).

2.2.2.2. LSMS Albanian data and subjective questions

The foreign transfers are expected to influence income expectations. To test this conjecture, we use the LSMS Albanian longitudinal data and focus on the first three waves of this panel, from 2002 to 2004 (see Part 2, Section 1, Subsection 2).

The sizes of the Albanian samples are respectively 1782 households in 2002 (7973 individuals), 2155 households in 2003 (8110 individuals) and 1797 households in 2004 (8025 individuals). In what follows, we focus on changes over time in subjective information on income expectations and remittances at the household level. For that purpose, we construct a sample where we follow the head of each household over the three waves. After deleting missing values, we finally get a balanced panel comprising 4878 observations for the period 2002-2004, corresponding to 1626 households.[59]

Let us now describe in more detail the main questions of interest for our study. In the three waves, we rely on the three following subjective questions, respectively related to satisfaction with current, past and future financial situation:

A. 'How satisfied are you with your current financial situation?'. Possible answers are 'fully satisfied', 'rather satisfied', 'less than satisfied', 'not at all satisfied'.

B. 'Do you feel that your financial situation in the past 12 months has…?'. Possible answers are 'improved a lot', 'somewhat improved', 'remained the same', 'somewhat deteriorated', 'deteriorated a lot'.[60]

C. 'Do you think that in the next 12 months your financial situation will be…?'. Possible answers are similar to those of question B.

As they stand, these questions are easy to understand for respondents, and they are also clear and well formulated. As explained by Das and van Soest (1997, 1999) which use very similar questions, respondents have the same concepts in mind while answering to the questions A, B, and C. Since these questions have been asked at each wave of the panel, it is then possible to study changes in income over time and to compare expectations in one year to realizations the next year. Finally, it should be noted that we have information on the current monthly household income only in 2002. We thus turn to a proxy variable given by

[59] We choose to rely on a balanced panel instead of an unbalanced one because we are interested in comparing answers given to expectations and realized changes. We thus need information given in t on expectations about t+1, and then in t+1 on realization since t.

[60] However, note that the question in 2002 is about realized changes since last three years, while answers are about realized changes since last 12 months in 2003 and 2004.

the self-reported position of the respondent on a 10-step ladder where on the bottom (step 1) stand the poorest people and on the highest step (step 10) stand the rich.

Concerning remittances, data are available in the transfers and social assistance module in 2002. Information on transfers includes remittances and transfers of family living in Albania. We know who is the donor related to the head of the household (spouse, children, siblings, etc.) and also where the donor lives (Albania or Greece, Italy, United States, etc.). Transfers are then remittances when the donor lives abroad. Amounts of these flows, both for cash and in-kind transfers, are also given. In 2003, information is in the migration module which includes an additional subsection about children living away. We have then data on transfer receipt (but not on amount of remittances) from all the children, nephews, parents, and siblings. Finally, a module on remittances and other incomes is again in the 2004 questionnaire, with similar information to 2002.

To the best of our knowledge, these detailed subjective questions allow us to study for the first time the dynamics of income satisfaction in the context of a developing country and to assess whether Albanian households are pessimistic or optimistic with respect to their expectations in income changes. As we have panel data, we are able to control for unobserved heterogeneity at the household level through the use of random and fixed effects when studying income expectations and the role of remittances.

2.2.2.3. Descriptive statistics on income satisfaction

Let us first describe the pattern of satisfaction with current financial situation among Albanian households. According to Table 2.8, we find that around 85% of the respondents feel not really satisfied (either ‘less than satisfied’ or ‘not satisfied at all’). This proportion is slightly decreasing over the period. It was equal to 86.4% in 2002, 84.7% in 2003 and 83.8% in 2004. At the same time, we evidence a change in the intensity of dissatisfaction over the period. Among unsatisfied respondents, 45.6% of them were not at all satisfied in 2002, 42.5% in 2003, and only 38.5% in 2004. Conversely, the percentage of respondents being rather or fully satisfied increases over the three years, from 13.7% in 2002 to 16.2% in 2004. A plausible explanation is undoubtedly related to economic growth, as annual GDP growth from 3% to 6% between 2002 and 2004 according to the World Bank.

This pattern seems rather consistent with answers given to realized changes since last 12 months. Over the period, respondents report more frequently that their financial situation has

remained the same. This proportion increases over the period, since it was 46.9% in 2002, but 56.9% in 2003 and 58.7% in 2004.[61] In 2003 and 2004, around 20% of the respondents claim that their situation has been either 'somewhat improved' or 'improved' a lot since last years. At the same time, the percentage of respondents reporting that their situation has deteriorated (either 'somewhat' or 'a lot') is slightly higher, 22.8% in 2003 and 21.7% in 2004. On average, the situation has deteriorated a lot for about 7% of respondents.

Table 2.8. Subjective information on current, past and future financial situation

Variables	2002			2003			2004		
	T=0	T>0	All	T=0	T>0	All	T=0	T>0	All
Satisfaction with current financial situation									
Fully satisfied	2.3	1.3	2.1	1.6	1.0	1.4	1.1	0.8	1.0
Rather satisfied	10.7	14.4	11.6	11.3	18.3	13.8	14.3	18.2	15.2
Less than satisfied	46.3	49.5	47.0	47.4	51.0	48.7	51.3	51.8	51.5
Not at all satisfied	40.7	34.8	39.4	39.6	29.7	36.0	33.3	29.2	32.3
Realized change since last 12 months									
Improved a lot	2.9	0.8	2.4	1.0	1.4	1.1	0.2	1.6	0.6
Somewhat improved	23.5	32.1	25.5	14.7	27.1	19.2	18.2	22.0	19.1
Remained the same	46.7	47.6	46.9	59.1	53.1	56.9	58.9	57.8	58.7
Somewhat deteriorated	18.5	13.4	17.3	18.1	13.5	16.4	15.0	13.7	14.7
Deteriorated a lot	8.5	6.2	8.0	7.2	5.0	6.4	7.7	4.9	7.0
Expected change in next 12 months									
Improved a lot	1.3	1.2	1.3	1.1	0.8	1.0	0.2	0.6	0.3
Somewhat improved	30.6	37.8	32.3	26.1	39.8	31.2	22.9	29.9	24.5
Remained the same	53.9	51.6	53.3	58.5	50.2	55.4	64.7	60.2	63.6
Somewhat deteriorated	10.1	7.3	9.5	9.8	7.2	8.8	7.8	5.7	7.3
Deteriorated a lot	4.1	2.1	3.6	4.6	2.0	3.7	4.5	3.6	4.3

Source: LSMS Albania 2002-2003-2004.

Finally, we investigate the pattern of expected changes on financial situation in next 12 months. As shown in Table 2.8, many respondents expect that their financial situation will remain unchanged: 53.3% in 2002, 55.4% in 2003 and 63.6% in 2004. This is line with the findings of Das and van Soest (1997) in the Netherlands, these authors showing that about one-half of the households do not expect any change in terms of current income. In Albania, households seem rather optimistic about the future. In 2002 and 2003, more than 30% of them believe that their financial situation will be improved, either 'somewhat' or 'a lot', but this proportion is lower in 2004 (24.8%). For comparison, about 12% of respondents believe that their situation will deteriorate in the next 12 months (most often 'somewhat deteriorated').

[61] In 2002, the question was about realized changes since the last three years. This may be an explanation of the differences observed between 2002 and 2003/2004.

When introducing remittances into the analysis, results reported in Table 2.8 indicate that the receipt of transfers from abroad is positively related with income satisfaction. For the various years, respondents are more likely to be 'rather' of 'fully' satisfied when they benefit from remittances: 15.7% instead of 13.0% in 2002, 19.3% instead of 12.9% in 2003, and 19% instead of 15.4% in 2004. At the same time, the proportion of respondents being not satisfied at all is strongly reduced among recipients.

As remittances bring additional, not necessarily expected, resources to the households, they should also have a positive effect on realized change since last 12 months. The LSMS data show that this is indeed the case, since improved realized changes (either 'somewhat' or 'a lot') are much more frequent among recipients than among non-recipients: 32.9% instead of 26.4% in 2002, 28.5% instead of 15.7% in 2003, 23.6% instead of 18.4% in 2004. Finally, we also observe a positive correlation between the receipt of transfers and expectations. Respondents who have received money from other family members living in foreign countries are on average much more optimistic about their financial situation in the future[62].

As people having experienced negative shocks over the last year may be more pessimistic about their future situation, we describe in Table 2.9 income expectations in the next 12 months conditional on realized changes since the last 12 months. According to the data, the proportions of respondents claiming that their situation has not changed over the last 12 months and that their situation will remain the same during the 12 next months are roughly similar, respectively 53.7% and 57.4%.

Table 2.9. Expected financial situation conditional on realized change

Self-assessed change since last 12 months (between *t*-1 and *t*)	Expected change on financial situation (between *t* and *t*+1)					
	Improved a lot	Somewhat improved	Remaining the same	Somewhat deteriorated	Deteriorated a lot	Total
Improved a lot	0.5	0.4	0.4	0.0	0.0	1.4
Somewhat improved	0.2	15.0	7.1	0.2	0.0	22.5
Remaining the same	0.1	11.4	39.5	2.6	0.2	53.7
Somewhat deteriorated	0.0	2.2	8.6	4.2	0.7	15.7
Deteriorated a lot	0.0	0.3	1.8	1.4	3.0	6.6
Total	0.8	29.4	57.4	8.5	3.9	100.0

Source: LSMS Albania 2002-2003-2004.

[62] For instance, in 2004, 30.5% of transfer recipients were expecting their financial situation to improve a lot or somewhat in the next 12 months, but this proportion was only equal to 23.1% among non-recipients.

A first result is that many households give similar answers to realized and expected changes (62.2%). This means that expectations most often reproduce experienced changes. For instance, among those who expect in *t* their situation not to change in *t*+1, 68.8% of them report no change in their financial situation between *t*-1 and *t*.[63] A second result is that respondents are rather confident about the future with respect to realized changes. While 11.6% of them have expectations that are worse than realized changes, 26% of Albanian households have expected changes that are better than realized changes.[64]

These descriptive statistics suggest that expectations on income changes depend on past changes in income. Households having experienced an improvement of their financial situation also expect a better situation in the future. Nevertheless, it also matters to control for household characteristics in order to better understand the relationship between realized and expected income changes. Before turning to the econometric analysis, we now describe the different explanatory variables that we will introduce in our regressions.

According to Table 2.10, there are much more male (87.5%) than female (12.5%) respondents and the mean number of persons per household is around 4.3. The mean age for the head is slightly above 50 years. On average, the head has completed more than 8 years of education. Concerning employment status, the proportion of farm workers slightly decreases over the period, from 28.7% in 2002 to about 27% in 2003 and 2004. Substantial variations are evidenced among the self-employed (9.7% in 2002, 17.5% in 2003, 13.7% in 2004). In the sample, respondents are more often of Muslim religion (76.8%) and about one-half of the interviewees live in an urban area (51.2%). The self-reported position on the income ladder increases over the three-years period time (from 3.7 to 4.2).

[63] Among those whose situation is expected to deteriorate a lot in next 12 months, 76.9% of them claim that their situation has deteriorated a lot since last 12 months.

[64] Among this group of more optimistic respondents, 11.4% of households report an unchanged satisfaction since last year and an expectation of a somewhat improved situation.

Table 2.10. Descriptive statistics of the sample

Variables	2002			2003			2004		
	T=0	T>0	All	T=0	T>0	All	T=0	T>0	All
Head: Female	0.097	0.219	0.125	0.109	0.154	0.125	0.102	0.199	0.125
Head: Age	49.998	53.949	50.907	50.532	54.346	51.907	51.653	56.933	52.907
Nb of persons in the household	4.529	4.324	4.482	4.485	3.840	4.252	4.539	3.642	4.326
Head: Married	1.357	1.503	1.391	1.363	1.427	1.386	1.376	1.464	1.397
Head: Years of education	8.856	7.824	8.619	8.942	8.044	8.619	8.898	7.723	8.619
Head: Non-farm work	0.332	0.217	0.306	0.292	0.247	0.276	0.325	0.194	0.294
Head: Farm work	0.278	0.318	0.287	0.259	0.288	0.269	0.252	0.329	0.271
Head: Self-employed	0.111	0.051	0.097	0.188	0.150	0.175	0.151	0.093	0.137
Muslim	0.784	0.717	0.768	0.791	0.727	0.768	0.781	0.728	0.768
Urban	0.518	0.495	0.512	0.538	0.466	0.512	0.533	0.446	0.512
Monthly household income (ln)	9.553	9.415	9.521			-			-
Position on income ladder	3.726	3.807	3.745	4.039	4.413	4.174	4.177	4.329	4.213
Receipt of remittances	0.000	1.000	0.230	0.000	1.000	0.360	0.000	1.000	0.237
Annual amount of remittances (ln)	0.000	11.350	2.611	-	-	-	-	-	-
Number of observations	1252	374	1626	1040	586	1626	1240	386	1626

Source: LSMS Albania 2002-2003-2004.

As shown in Table 2.10, the proportion of households receiving remittances is much higher in 2003 (36%) than in 2002 and 2004 (24%). This is undoubtedly due to the different way of measuring remittances in the survey for that year, with more detailed questions. Interestingly, we note some significant differences between recipients and non-recipients. In particular, remittances are more frequently reported by women and married respondents, while the reverse pattern holds for education and non-farm workers. This is due to the fact that high-educated individuals are more likely to emigrate, which increases the probability for the head still living in Albania to be helped.

2.2.2.4. Econometric analysis of expected changes

We now investigate the factors that influence expected changes in financial situation, which are measured through the use of an ordered categorical variable. We define by S the subjective measure of expectations. We have $S=1$ when the financial situation in the next 12 months will be 'deteriorated a lot', $S=2$ when 'somewhat deteriorated', $S=3$ when 'remaining the same', $S=4$ when 'somewhat improved' or 'improved a lot'. We choose to group these two outcomes as very few households believe that their situation will improve a lot (less than 0.7%).

We suppose that there exists a latent variable S^* associated to these financial expectations. Given the different possibilities, we assume that $S^* \leq \mu_1$ when $S=1$, $\mu_1 < S^* \leq \mu_2$ when

$S=2$, $\mu_2 < S^* \leq \mu_3$ when $S=3$, and $\mu_3 < S^*$ when $S=4$. The latent indicator S^* is expected to depend on a set of individual characteristics X, a vector of coefficients β and a residual. Since we have repeated information (2002, 2003, 2004) on financial expectations for each individual, we are able to account for unobserved heterogeneity at the individual level in the following way:

$$S_{it}^* = \beta' X_{it} + \delta_i + \varepsilon_{it} \tag{1}$$

where i and t as subscripts refer respectively to the respondent and to the year of survey. In (1), δ_i is an unobserved individual effect. These perturbations are supposed to be normally distributed, with mean 0 and variance σ_δ^2. The error terms ε_{it} are also supposed to follow a normal distribution with mean 0 and unitary variance. Under the assumption that the covariates are uncorrelated with the individual effects, the corresponding model is a random effects ordered Probit model and the different threshold levels μ_j have to be estimated jointly with the vector of coefficients β.

The contribution to the likelihood function for an individual i observed during the three periods can be expressed as:

$$\Pr(S_{i02}, S_{i03}, S_{i04}) = \int_{-\infty}^{+\infty} \left(\Phi(\mu_{j+1} - \beta' X_{it}) - \Phi(\mu_j - \beta' X_{it})\right) \phi(\delta_i) d\delta_i \tag{2}$$

where $\phi(\delta_i)$ is the density of $N(0, \sigma_{\delta_i}^2)$. The likelihood function for the above model involves multivariate normal integrals, so that the random effect ordered Probit model has to be estimated using numerical approximations and Gaussian quadrature techniques[65].

As we have additional information on the observed income and amount of remittances only in 2002, we first estimate a standard ordered Probit regression for that year. The sample is then restricted to 1434 households and estimates are reported in Table 2.11. The regression includes the following characteristics of the head of the household, i.e. gender, age, number of persons in household, marital situation, years of education, dummy variables related to occupation, religion (a dummy when the head is Muslim) and rural-urban status. We also control for the log of the monthly household income.

[65] See Butler and Moffitt (1982) for further details. As the Albanian panel includes only three waves, note that we are not able to estimate a dynamic ordered Probit model as in Das and van Soest (1999).

As shown in column (1), there is no difference between women and men about financial expectations. Marital status and number of persons in the household are also not significant in the regression. Age of the head is characterized by a U-shaped profile, with a minimum at 45 years. We also account for years of education and evidence a positive impact on expectations. Education is highly correlated with permanent wealth, and those with more education undoubtedly face more income opportunities in the future. Finally, Muslim households are on average more optimistic about their financial expectations, while living in urban areas tend to influence negatively these expectations. This result is a little bit surprising as poverty is essentially rural in Albania.

We now turn to variables related to the economic situation of the head. First, we add three controls related to the labor market status, i.e. non-farm work, farm work and self-employed (not working being the reference category). While having a farm work does not influence the subjective outcome, we find that being self-employed and to a lesser extent non-farm worker (at the 10 percent level) make individuals more optimistic about their financial expectations. Not surprisingly, we find a significant positive impact of income (measured at the household level) on expectations. Those who are richer today are significantly more optimistic about their future.

Table 2.11. Ordered Probit estimates of the expected change (in 2002) on financial situation

Variables	(1)	(2)	(3)	(4)
Head: Female	0.176	0.091	0.078	-0.047
	(1.28)	(0.65)	(0.55)	(0.32)
Head: Age	-0.042***	-0.046***	-0.046***	-0.046***
	(2.59)	(2.85)	(2.86)	(2.70)
Head: Age² (/100)	0.046***	0.049***	0.049***	0.044***
	(2.92)	(3.12)	(3.13)	(2.68)
Nb of persons in the household	0.000	0.004	0.004	0.032*
	(0.02)	(0.23)	(0.20)	(1.65)
Head: Married	-0.057	-0.039	-0.036	0.018
	(1.27)	(0.87)	(0.78)	(0.38)
Head: Years of education	0.097***	0.094***	0.094***	0.124***
	(3.40)	(3.29)	(3.26)	(4.14)
Head: Years of education² (/100)	-0.004**	-0.004**	-0.004**	-0.006***
	(2.38)	(2.21)	(2.18)	(3.61)
Head: Non-farm work	0.162*	0.176**	0.177**	0.001
	(1.92)	(2.09)	(2.10)	(0.01)
Head: Farm work	0.125	0.125	0.126	0.030
	(1.41)	(1.40)	(1.41)	(0.32)
Head: Self-employed	0.457***	0.491***	0.492***	0.246**
	(3.92)	(4.19)	(4.20)	(1.99)
Monthly household income (ln)	0.160***	0.163***	0.163***	0.093***
	(7.22)	(7.32)	(7.32)	(4.00)
Receipt of remittances		0.316***		
		(4.30)		
Annual amount of remittances (ln)			0.030***	0.017**
			(4.68)	(2.57)
Muslim	0.177**	0.193***	0.193***	0.179**
	(2.47)	(2.68)	(2.68)	(2.39)
Urban	-0.470***	-0.478***	-0.476***	-0.284***
	(5.89)	(5.97)	(5.95)	(3.37)
Financial situation improved in the last 12 months				0.961***
				(11.78)
Financial situation deteriorated in the last 12 months				-0.922***
				(11.38)
Number of observations	1434	1434	1434	1434
Log likelihood	-1421.8	-1412.5	-1410.8	-1223.8

Source: LSMS Albania 2002.

Note: Ordered Probit estimates. Absolute values of t statistics are in parentheses. Significance levels are respectively equal to 1% (***), 5% (**) and 10% (*). Each regression also includes a set of threshold parameters.

In columns (2) and (3), we analyze whether remittances influence or not the subjective appreciation of households. We introduce in column (2) a dummy variable that is equal to one when the household has received remittances during the last year. Since we control for household income in the regression, this means that the variable associated to remittances does not pick up a pure income effect. We find that the composition of family resources has an effect per se on financial expectations in Albania. Having received remittances from abroad makes respondents more optimistic about their future situation. In column (3), we replace the dummy transfer variable by the annual amount of remittances and find again a positive estimate for that covariate, significant at the 1 percent level.

In column (4), we finally add the subjective answers to realized changes. We introduce two dummy variables in the regression, respectively for improved situation and deteriorated situation since the last 12 months. We find that past changes strongly matter to understand expectations.[66] On the one hand, those who have experienced an improvement of their financial situation since last year expect an improved financial situation in the next 12 months. On the other hand, households whose financial situation has deteriorated are quite pessimistic and report more often that their financial situation will be deteriorated in the future. The corresponding estimates are substantial, which suggests a strong inertia between past changes and expectations for households.[67] A last comment is that including past changes in the regression does not affect the positive influence of remittances on expectations.

In order to control for unobserved heterogeneity at the individual level, we now extend this analysis using the three waves (4182 observations, 1394 households). We explain expectations on financial situation using random effects ordered Probit models. We drop from the regressions household income and amount of remittances, this information being available only in 2002, and add instead as covariate the self-reported position on income ladder. As shown in Table 2.12, we note that the inclusion of random effects does not really affect our previous findings based on the 2002 wave.

As shown in column (1), gender differences are again not significant. More educated heads, Muslim respondents and those who live in a rural area are more often optimistic about their financial situation in the next 12 months. Also, we again note that households whose

[66] We also note that the other estimates in (4) are not really affected when accounting for past changes.

[67] That those who experienced an improvement of their situation are more optimistic about their expected changes while those who experienced a decrease are pessimistic is perfectly consistent with the results of Das and van Soest (1997), who also point out the strong influence on realized changes on expectations.

financial situation has improved during the last 12 months are more likely to be optimistic, while a deterioration in the last 12 months makes respondents more pessimistic about their future. Two differences are nevertheless worth mentioning. First, being married has now a negatively significant effect on expectations. It is certainly more difficult for married people to migrate, which would worsen expectations. Second, we now find a negative coefficient for non-farm workers.

Table 2.12. Ordered Probit estimates of the expected change on financial situation (random effects and fixed effects regressions)

Variables	(1)	(2)	(3)
Head: Female	0.095	0.058	
	(1.00)	(0.61)	
Head: Age	-0.030***	-0.032***	-0.289
	(2.64)	(2.82)	(1.54)
Head: Age² (/100)	0.024**	0.026**	0.047
	(2.25)	(2.37)	(0.27)
Nb of persons in the household	0.020	0.026**	0.062
	(1.57)	(2.08)	(0.74)
Head: Married	-0.034	-0.023	
	(1.09)	(0.75)	
Head: Years of education	0.057***	0.055***	
	(2.86)	(2.76)	
Head: Years of education² (/100)	-0.003***	-0.003**	
	(2.71)	(2.52)	
Head: Non-farm work	-0.119**	-0.115**	
	(2.07)	(2.00)	
Head: Farm work	0.011	0.011	
	(0.18)	(0.19)	
Head: Self-employed	-0.101	-0.093	
	(1.44)	(1.33)	
Income ladder (1: poor – 10: rich)	0.187***	0.185***	0.308***
	(12.26)	(12.11)	(6.92)
Receipt of remittances		0.171***	0.205
		(3.67)	(1.60)
Muslim	0.099**	0.105**	
	(1.96)	(2.08)	
Urban	-0.222***	-0.216***	
	(4.11)	(4.01)	
Financial situation improved in the last 12 months	0.934***	0.924***	1.167***
	(16.86)	(16.65)	(9.14)
Financial situation deteriorated in the last 12 months	-0.883***	-0.878***	-0.903***
	(16.46)	(16.37)	(7.12)
Number of observations	4182	4182	4182
Log likelihood	-3441.1	-3434.4	

Source: LSMS Albania 2002.

Note: (1), (2) and (3) are random effects Ordered Probit estimates, (4) are fixed effect ordered estimates. Absolute values of t statistics are in parentheses. Significance levels are respectively equal to 1% (***), 5% (**) and 10% (*). Regressions (1), (2) and (3) also include a set of threshold parameters.

The self-reported position on the income ladder is positively correlated with financial expectations. A difficulty is that this covariate is also a subjective outcome, so that it may be contaminated by the optimistic/pessimistic view of the household on future income. However, it still remains a good proxy of the household current economic status. In column (2), we introduce an additional explanatory variable related to the receipt of remittances. We find that respondents have a more optimistic view on their future financial situation when they benefit from such private transfers.[68] It thus seems that the composition of household income matters when understanding expectations on financial situation.

We have also attempted to account for fixed effects in the ordered Probit regressions. This specification would indeed be more appropriate if the individual unobserved effects are correlated with the characteristics of the household. As there is no direct approach to estimate a fixed effect ordered Probit model, we proceed in the following way.

First, we estimate a set of conditional Logit models by grouping adjacent outcomes related to financial expectations. We define two dependent variables So^j such that $So^1 = 1$ if $S > 2$ and $So^1 = 0$ otherwise (corresponding to situations remaining the same or improved) and $So^2 = 1$ if $S > 3$ and $So^2 = 0$ otherwise (improved situations). For each So^j, we get a consistent estimate β^j of β using the conditional Logit estimator (Chamberlain, 1980). Secondly, we rely on a Classical Minimum Distance estimator to get a restricted estimator for β from β^1 and β^2. Specifically, we solve $\min_\delta \left(\hat{\vartheta} - H\beta\right)'\hat{V}^{-1}\left(\hat{\vartheta} - H\beta\right)$, where $\hat{V}$ is a weighting positive definite matrix and ϑ is the unrestricted vector $\vartheta = (\beta^{1\prime}, \beta^{2\prime})'$. The mapping from ϑ to β is linear, with $\vartheta = H\beta$. The solution $\hat{\beta}$ is $\hat{\beta} = \left(H'\hat{V}^{-1}H\right)^{-1}\left(H'\hat{V}^{-1}\hat{\vartheta}\right)$ and the corresponding asymptotic covariance matrix is given by $V\left(\hat{\beta}\right) = \left(H'\hat{V}^{-1}H\right)^{-1}$.

Results of the fixed effects model are in column (3) of Table 5. By definition, all the covariates that are time invariant at the individual level (like gender, education, religion, etc.) are excluded from the regression.[69] With respect to the random effects specification, age and number of persons in the household are no longer significant. Changes in situation over the last 12 months strongly influence expectations. Respondents are more optimistic when their financial situation has improved in the past, while they are more pessimistic about the future

[68] The significantly positive effect of remittances still holds (and it is in fact slightly larger) when excluding the self-reported position on income ladder from the regression.

[69] We also choose to exclude the occupational dummies because of limited variation over time.

when they have already experienced negative shocks. Expectations are an increasing function of the position on income ladder. Finally, we obtain a positive value associated to the receipt of remittances. However, the coefficient is now significant only at the 11 percent level.

A question worth is to know whether the dummy associated to the receipt of transfers can really be considered as exogenous. Endogeneity may stem from measurement errors, simultaneity, or omitted variables (unobserved heterogeneity). Clearly, as shown by the data, it remains difficult to measure private transfers since their magnitude strongly depends on the questions asked in the survey. Nevertheless, measurement errors are certainly not a more important problem for remittances than for other variables, including perceptions about the future financial situation. Concerning simultaneity, it seems hard to believe that expectations would increase remittances, while remittances are on a priori grounds an additional source of resources that is likely to improve expectations. Finally, the omitted variables bias is removed since we control for unobserved heterogeneity through the inclusion of fixed effects at the individual level when turning to the minimum distance estimator.[70]

2.2.2.5. Understanding differences in realized and expected changes

The use of longitudinal data with information on both expectations and realized changes allows us to know whether households overestimate or underestimate ex ante their future income growth. We proceed in the following way. Using the 2002 and 2003 waves, we obtain information on income expectations respectively about 2003 and 2004. Then, using the 2003 and 2004 waves, we can compare these expectations with realized changes over the last 12 months, respectively between 2002 and 2003 using the 2003 wave and between 2003 and 2004 using the 2004 wave. Results of the comparison are in Table 2.13.

According to the LSMS data, 32.9% (31.8+1.1) of the respondents expect an improvement (either ‘a lot’ or ‘somewhat’) of their financial situation between t and t+1. However, only 21.2% (20.3+0.9) of them claim that their realized situation has indeed improved (either ‘somewhat’ or ‘a lot’) during the last 12 months. Clearly, these findings suggest that households tend to substantially overestimate their income changes, meaning that they are too optimistic. Interestingly, the proportions of expectations and realizations ‘remaining the same’

[70] A difficulty could stem from a state dependence in the provision of remittances over time. If remittances in t depend on transfers made in t-1, then past remittances could influence current expectations. Nevertheless, we have only three waves, so that we cannot estimate a dynamic Probit model.

are very similar, respectively 54.4% and 57.6%. The difference between the two variables is hence linked to deteriorated situations. While only 12.7% of the respondents were expecting a deterioration of their situation, 21.3% of households in Albania consider that their situation has indeed deteriorated since last 12 months.

Table 2.13. Comparison between realized and expected changes in financial situation

Self-assessed change since last 12 months (between *t* and *t*+1)	Expected change in financial situation (between *t* and *t*+1)					
	Improved a lot	Somewhat improved	Remaining the same	Somewhat deteriorated	Deteriorated a lot	Total
Improved a lot	0.2	0.4	0.2	0.0	0.0	0.9
Somewhat improved	0.4	10.3	8.2	1.1	0.3	20.3
Remaining the same	0.4	16.4	34.1	5.1	1.6	57.6
Somewhat deteriorated	0.0	3.6	8.6	2.0	1.0	15.2
Deteriorated a lot	0.0	1.1	3.3	1.0	0.8	6.1
Total	1.1	31.8	54.4	9.1	3.6	100.0

Source: LSMS Albania 2002-2003-2004.

Whatever their initial expectations, respondents most often have the feeling that their situation has not changed over the last 12 months. Among those who were expecting a somewhat improved situation, 51.6% of them believe that their situation has in fact not changed (and only 32.4% of them claim that their situation has indeed improved). Among those who were expecting a somewhat deteriorated situation, we find that only 22% feel that their situation is indeed worse than last year, the situation remaining unchanged for 56% of the respondents. It thus appears that more optimistic individuals are in fact too optimistic, while more pessimistic individuals are in fact too pessimistic.

As suggested in Das and van Soest (1999), having information both on realized and expected changes for a same period makes possible to test the assumption of rational expectations. Let $S^*_{t/t+1}$ be the latent variable associated to expectations on financial situation in the next 12 months at date *t*, and let $R^*_{t+1/t}$ be the latent variable measuring realized changes since last 12 months at date *t*+1. Realized changes may be expressed in the following way, i.e. $R^*_{t+1/t} = \delta S^*_{t/t+1} + \rho_t + \varepsilon_t$, where ρ_t are year-specific variables and ε_t is a residual normally distributed. Under the assumption of rational expectations, then the linear constraint $\delta = 1$ should hold. A difficulty to assess the relevance of this restriction is that we never observe the latent variables $S^*_{t/t+1}$ and $R^*_{t+1/t}$.

We thus choose to proceed in the following way to get a confidence interval for δ. First, we express the observed outcomes $S_{t/t+1}$ and $R_{t+1/t}$ as function of household covariates and estimate the corresponding regressions using random effects ordered Probit models[71]. Then, we compute the linear fitted values of both latent variables for each observation of the sample, i.e. $S^*_{t/t+1}$ and $R^*_{t+1/t}$. As a final step, we estimate $R^*_{t+1/t}$ as a function of $S^*_{t/t+1}$ and a dummy variable for 2003 using OLS, with clustering at the individual level.

According to the Albanian LSMS data, we find a value of 0.558 for the parameter δ, with a standard error of 0.026. At the 95 percent level, the corresponding confidence interval is [0.507; 0.609], meaning that the constraint $\delta = 1$ is clearly rejected. Interpretation of this result is simply that Albanian households do not have rational expectations. Interestingly, Das and van Soest (2003, p. 423, Table 8) reach very similar conclusions in the Netherlands over the period 1984-1988. Using a slightly different procedure based on maximum likelihood estimation, these authors find a value of 0.54 for the parameter δ.

Finally, we try to understand differences between realizations and predictions related to changes in financial situation and investigate the role of individual characteristics on these deviations. Let $D_{t/t+1}$ be a measure of these deviations for a given time period, such that $D_{t/t+1} = S_{t/t+1} - R_{t+1/t}$. When $D_{t/t+1}$ is strictly positive, this means that Albanian households tend to overestimate their future income, while underestimation of future income holds when $D_{t/t+1} < 0$. According to the data, this variable takes values ranging from -3 to 3, but large underestimations or overestimations of income changes are not very frequent[72]. We then consider only three cases for $D_{t/t+1}$, i.e. $D_{t/t+1} < 0$ (17.9%), $D_{t/t+1} = 0$ (47.3%) and $D_{t/t+1} > 0$ (34.8%). We rely on ordered Probit models to explain deviations between realizations and predictions.

In column (1) of Table 2.14, we report the estimates from an ordered Probit model using changes in income between 2002 and 2003. While we use a restricted sample of 1430 observations, this allows us to control for household income in the regression. A striking feature is that very few coefficients are significant and the receipt of remittances does not

[71] In these regressions, we control for gender, age, number of persons in the household, marital status, education, occupation, receipt of remittances, religion and urban/rural status, but we choose to exclude the subjective income scale (this does not affect our conclusions). The corresponding sample comprises 2773 observations.

[72] For instance, the variable measuring deviations between expectations and realizations is equal to -3 for 0.3% of the respondents, -2 for 2.9% of them, +2 for 7.3% of them and +3 for 1.1% of them.

influence the dependent variable. In fact, only two sets of covariates have an impact on the difference between realizations and expectations. First, Muslim respondents are more likely to overestimate their changes in financial situation. Secondly, deviations between realized and expected changes depend on past changes. While the deviation tends to be higher with a financial situation improved in the last 12 months, the gap is reduced when people have experienced a deterioration of their financial in the last 12 months.

In columns (2) and (3), we combine information for the periods 2002-2003 and 2003-2004 and we then estimate random effect ordered Probit models to control for unobserved heterogeneity at the individual level. This has little impact on our previous results. We now observed that the squared term associated to years of education is negative (at the 10 percent level), while the deviation between expectations and realizations is higher in urban than in rural areas. Nevertheless, the most influential variables remain income changes in the past. Those whose income has fallen have a larger propensity of underestimation, while those whose income has increased have a larger propensity of overestimation.

Finally, we turn to a fixed effect ordered specification using the minimum distance estimator previously described[73]. The corresponding estimates are in column (4) of Table 13. Two comments are in order. First, we still evidence a strong effect of past changes in income. Households whose income has fallen are too pessimistic, while those whose income has increased tend to be too optimistic (since they overestimate more often their future financial situation). Second, the difference between expectations and realizations is now increasing with the self-reported position on income ladder and with the receipt of remittances, albeit this effect remains hardly significant (at the 5.4 percent level).[74]

An interpretation of our findings is that respondents attach too much importance to their past changes in financial situation. For instance, those who have experienced a negative shock in income become too pessimistic at the next period, probably because they fear living again the same bad experience. Our fixed effects estimates also suggest that people receiving transfers from foreign countries tend to overestimate their future financial situation. Several explanations may come to mind. First, recipients may anticipate that they will receive more

[73] As we have three values for the dependent variable measuring deviations between expectations and realizations, we estimate two conditional Logit models (one for null or positive values for deviation, one for strictly positive values) and combine the two set of estimates to form only one vector of coefficients.

[74] We have also estimated the fixed effects model without the self-reported income ladder. In that case, we find a coefficient of 0.360 for the receipt of remittances, with a t-value of 2.03.

inflows at the next period[75]. Secondly, among households involved in farming activities, remittances may be viewed as a less uncertain form of resources and make them more optimistic. Finally, remittances may be invested in other activities. Such investments are of course expected to generate additional resources, but there also may be some substantial (unexpected) delay before receiving benefits from these investment decisions.

Table 2.14. Estimates of difference between expected and realized changes in financial situation

Variables	(1)	(2)	(3)	(4)
Head: Female	0.015	-0.032	-0.032	
	(0.11)	(0.31)	(0.31)	
Head: Age	-0.008	-0.020	-0.020	0.095
	(0.49)	(1.62)	(1.62)	(0.26)
Head: Age² (/100)	0.007	0.015	0.015	-0.130
	(0.43)	(1.32)	(1.33)	(0.36)
Nb of persons in the household	0.015	0.004	0.004	-0.132
	(0.81)	(0.27)	(0.27)	(1.33)
Head: Married	0.003	0.013	0.014	
	(0.06)	(0.39)	(0.40)	
Head: Years of education	0.025	0.022	0.022	
	(0.86)	(1.03)	(1.03)	
Head: Years of education² (/100)	-0.003	-0.002*	-0.002*	
	(1.61)	(1.86)	(1.87)	
Head: Non-farm work	0.019	-0.098	-0.099	
	(0.23)	(1.56)	(1.57)	
Head: Farm work	0.024	0.029	0.029	
	(0.27)	(0.45)	(0.44)	
Head: Self-employed	0.114	-0.052	-0.055	
	(0.99)	(0.69)	(0.72)	
Monthly household income (ln)	0.002			
	(0.07)			
Income ladder (1: poor – 10: rich)			0.003	0.202***
			(0.21)	(3.43)
Receipt of remittances	-0.010	0.043	0.042	0.343*
	(0.14)	(0.86)	(0.85)	(1.93)
Muslim	0.248***	0.233***	0.233***	
	(3.47)	(4.34)	(4.34)	
Urban	0.039	0.121**	0.121**	
	(0.49)	(2.08)	(2.06)	
Financial situation improved in the last 12 months	0.287***	0.323***	0.318***	1.969***
	(3.90)	(5.37)	(4.94)	(9.41)
Financial situation deteriorated in the last 12 months	-0.379***	-0.321***	-0.318***	-2.359***
	(4.99)	(5.25)	(5.05)	(8.87)
Number of observations	1430	2773	2773	2773
Log likelihood	-1444.5	-2794.1	-2794.1	

Source: LSMS Albania 2002-2003.

Note: (1) are ordered Probit estimates for 2002, (2) and (3) are random effects Ordered Probit estimates, (4) are fixed effect ordered estimates. Absolute values of t statistics are in parentheses. Significance levels are respectively equal to 1% (***), 5% (**) and 10% (*). Regressions (1), (2) and (3) also include a set of two threshold parameters.

[75] This could for instance occur if remittances are a signal of successful migrations or if migrants have to reimburse the migration costs through remittances during several years.

2.2.2.6. Conclusions

While economic theories related to the study of household behavior assign a central role to income expectations, empirical evidence on this issue remains rather scarce, especially in the context of less developed countries where household income is usually subject to more uncertainty. This contribution adds empirical evidence on income expectations in Albania using subjective information on income changes and panel data over the period 2002-2004, with a focus on the role of remittances. Our main conclusions are as follows.

First, expectations on financial situation in Albania are not only affected by the current level of income, but also by past changes in income. A similar result was found in the Netherlands by Das and van Soest (1997, 1999). Secondly, the composition of household income matters. We find that the receipt of remittances has a positive influence on the subjective appreciation of households about their future financial situation. Thirdly, when comparing realized changes and income expectations over the same time period, we evidence that Albanian households do not have rational expectations. Those whose income has fallen in the past have a larger propensity of underestimation, while those whose income has increased have a larger propensity of overestimation. Finally, respondents receiving transfers from foreign countries tend to slightly overestimate their future financial situation. Nevertheless, it should be kept in mind that our fixed effects estimates associated to remittances are hardly significant. Undoubtedly, it would be useful to have more detailed information on incomes and on transfer amounts[76].

As they stand, our results have strong macroeconomic implications. From an empirical viewpoint, it would be of interest to further analyze the complex interplay between economic growth in Albania and the fact that households are on average optimistic about their future financial situation. Also, the role of remittances and their positive effects on well-being deserve further attention. Recipients may for instance be more optimistic about their future because migrants will have more skills and abilities when coming back in Albania or because remittances are invested in local activities and will generate additional resources for the households. All these issues are left for future research.

[76] When turning to the longitudinal analysis, we are only able to control for the receipt of transfers as transfer amounts are not available in 2003 and 2004. Clearly, receiving large amounts of remittances should have a positive effect on expectations about financial situation.

2.2.3. References (Part 2)

Adams R.H., (2006), « Remittances and Poverty in Ghana », *World Bank Policy Research Working Paper*, n° 3838.

Altonji J.G., Hayashi F., Kotlikoff L.J., (1997), « Parental Altruism and Inter Vivos Transfers : Theory and Evidence », *Journal of Political Economy*, vol. 105, n° 5, pp. 1121-1166.

Azam J.P., Gubert F., (2005), « Those in Kayes : The Impact of Remittances on their Recipients in Africa », *Revue Economique*, vol. 56, n° 6, pp. 1331-1358.

Butler J.S., Moffitt R., (1982), « A Computationally Efficient Quadrature Procedure for the One-Factor Multinomial Probit Model », *Econometrica*, vol. 50, n° 3, pp.761-764.

Cox D., Eser Z., Jimenez E., (1998), « Motive for Private Transfers over the Life-Cycle: An Analytical Framework and Evidence for Peru », *Journal of Development Economics*, vol. 55, n° 1, pp. 57-80.

Das M., van Soest A., (1997), « Expected and Realized Income Changes : Evidence from the Dutch Socio-Economic Panel », *Journal of Economic Behavior and Organization*, vol. 32, n° 1, pp. 137-154.

Das M., van Soest A., (1999), « A Panel Data Model for Subjective Information on Household Income Growth », *Journal of Economic Behavior and Organization*, vol. 40, n° 4, pp. 409-426.

Dimova R., Wolff F.C., (2008), « Are Private Transfers Poverty and Inequality reducing ? Household Level Evidence from Bulgaria », *Journal of Comparative Economics*, vol. 36, n° 4, pp. 584-598.

Di Tella R., MacCulloch R., (2006), « Some Uses of Happiness Data in Economics », *Journal of Economic Perspectives*, vol. 20, n° 1, pp. 25-46.

Dominitz, J., Manski C., (1997), « Using Expectations Data to study Subjective Income Expectations », *Journal of the American Statistical Association*, vol. 92, pp. 855-867.

Duval L., (2009), « Déterminants et implications des transferts migratoires à destination des pays en développement », Thèse de doctorat en Sciences Economiques, Université de Nantes.

Edwards C.A., Ureta M., (2003), « International Migration, Remittances and Schooling : Evidence from El Salvador », *Journal of Development Economics*, vol. 72, n° 2, pp. 429-461.

Guiso L., Jappelli T., Terlizzese D., (1996), « Income Risk, Borrowing Constraints, and Portfolio Choice », *American Economic Review*, vol. 86, n° 1, pp. 158-172.

Gunatilaka R., Knight J., (2007), « Great Expectations ? The Subjective Well-Being of Rural-Urban Migrants in China », *Mimeo*, University of Oxford.

Heckman J.J., Ichimura H., Smith J., Todd P., (1998), « Characterizing Selection Bias using Experimental Data », *Econometrica*, vol. 66, n° 5, pp. 1017-1098.

King R., Mai N., Schwandner-Sievers S., (2005), *The New Albanian Migration*, Sussex Academic Press, Brighton.

Kingdon G., Knight J., (2007), « Community, Comparisons and Subjective Well-Being in a Divided Society », *Journal of Economic Behavior and Organization*, vol. 64, n° 1, pp. 69-90.

Korovilas J., (1999), « The Albanian Economy in Transition : The Role of Remittances and Pyramid Investment Schemes », *Post-Communist Economies*, vol. 11, n° 3, pp. 399-415.

Lucas R.E.B., Stark O., (1985), « Motivation to remit : Evidence from Botswana », *Journal of Political Economy*, vol. 93, n° 5, pp. 901-918.

Lusardi A., (1997), « Precautionary Saving and Subjective Earnings Variance », *Economics Letters*, vol. 57, n° 3, pp. 319–326.

Mansoor A., Quillin B., (2006), *Migration and Remittances: Eastern Europe and the Former Soviet Union*, World Bank.

Nicholson S., Souleles N., (2001), « Physician Income Expectations and Specialty Choice », *NBER Working Paper*, n° 8536.

Osili U.O., (2004), « Migrants and Housing Investment : Theory and Evidence from Nigeria », *Economic Development and Cultural Change*, vol. 52, n° 4, pp. 821-850.

Osili U.O., (2007), « Remittances and Savings from International Migration : Theory and Evidence using a Matched Sample », *Journal of Development Economics*, vol. 83, n° 2, pp. 446-465.

Poirine B., (1997), « A Theory of Remittances as an Implicit Family Loan Arrangement », *World Development*, vol. 25, n° 4, pp. 589-611.

Rapoport H., Docquier F., (2006), « The Economics of Migrants' Remittances », *in* Mercier-Ythier J., Kolm S.C., eds, *Handbook on the Economics of Giving, Altruism and Reciprocity*, Elsevier-North Holland, pp. 1135-1198.

Ratha D., (2005), « Workers' Remittances : An Important and Stable Source of External Development Finance », *in* Mainbo S., Ratha D., *Remittances : Development Impact and Future Prospects*, , World Bank, Washington DC, pp. 19-52.

Ravallion M., Lokshin M., (2002), « Self-Rated Economic Welfare in Russia », *European Economic Review*, vol. 46, n° 8, pp. 1453-1473.

Rosenzweig M.R., (1988), « Risk, Implicit Contracts and the Family in Low Income Countries », *Economic Journal*, vol. 98, n° 393, pp. 1148-1170.

Senik C., (2004), « When Information dominates Comparison. Learning from Russian Subjective Panel Data », *Journal of Public Economics*, vol. 88, n° 9-10, pp. 2099-2133.

Senik C., (2005), « What can we learn from Subjective Data? The Case of Income and Well-Being », *Journal of Economic Surveys*, vol. 19, n° 1, pp. 43-63.

Taylor J.E., Wyatt T.J., (1996), « The Shadow Value of Migrant Remittances, Income and Inequality in the Household-Farm Economy », *Journal of Development Studies*, vol. 32, n° 6, pp. 899-912.

Woodruff C., Zenteno R., (2007), « Migration Networks and Microenterprises in Mexico », *Journal of Development Economics*, vol. 82, n° 2, pp. 509-528.

World Bank (2008), *The Migration and Remittances Factbook 2008*.

Yang D., (2003), « Remittances and Human Capital Investment: Child Schooling and Child Labour in the Origin Households of Overseas Filipino Workers », *Working Paper*, Harvard University.