

How has internal migration in Albania affected the receipt of transfers from kinship members?

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Abstract

Kinship networks play an important role providing economic, social and emotional support in everyday life. Internal migration may put these networks at risk. Effects of migration on private transfers are primarily studied looking at the migrant and the family left behind. In this paper we investigate how the relocation of entire households affects the receipt of inter-household transfers from kinship members. Will the composition of received transfers change? Or, will the sending relatives be different?

We use data from a unique survey in Tirana (Albania), to investigate financial, good, and service transfers received by migrant households. By looking at frequency of transfers before and after migration, we check whether the structure of transfers changes and whether friends have superseded family as important sending partners.

Our empirical analysis shows that migration has significantly changed the type of transfers received while it has also affected the transfer network. We find that households receive fewer transfers than before migration, but that financial transfers increase. Friends become increasingly more important after migration, substituting for transfers from siblings and other relatives.

Keywords: internal migration, kinship, Albania, family solidarity, inter-household transfers

JEL classifications: D10, J10, J61, R20, R23

1. Introduction

The present study examines the impact of internal migration on transfers received from kinship members for the specific case of internal migrant households living in peri-urban areas of the capital of Albania, Tirana. We analyse how internal migration has affected the frequency of receiving financial transfers, goods, and services from different members of the kinship network.

Kinship networks provide its members with continuous support both in every day life and for sudden or unforeseen events. Individuals in every society rely on such networks for getting economic, social and emotional support. They often see self-identification with such networks as a necessary means for gaining the additional security that these networks can offer. But, perhaps the most distinctive feature of such networks is that they are never stable. Over time their shape changes due to demographic, economic or social developments. Here we look at the effect that internal migration has on kinship networks. As migration relocates family members, splits families and exposes migrants to new people and different cultural practices, it is also likely to affect the kinship network and support received by its members.

We analyse the effect that internal migration and change in location have had on the transfer network and transfer mix. We focus in particular on transfers received by the household. By looking at transfers received we are able to control for a wide range of characteristics of the receiving household. We also check these results comparing them to transfers that the same households give to their kin members. Based on previous literature and Albania's particular migration dynamics, we test the following hypotheses: (1) After migration financial transfers became more important. (2) After migration, households supersede family members in their transfer network with non-relatives (such as friends, neighbours, etc).

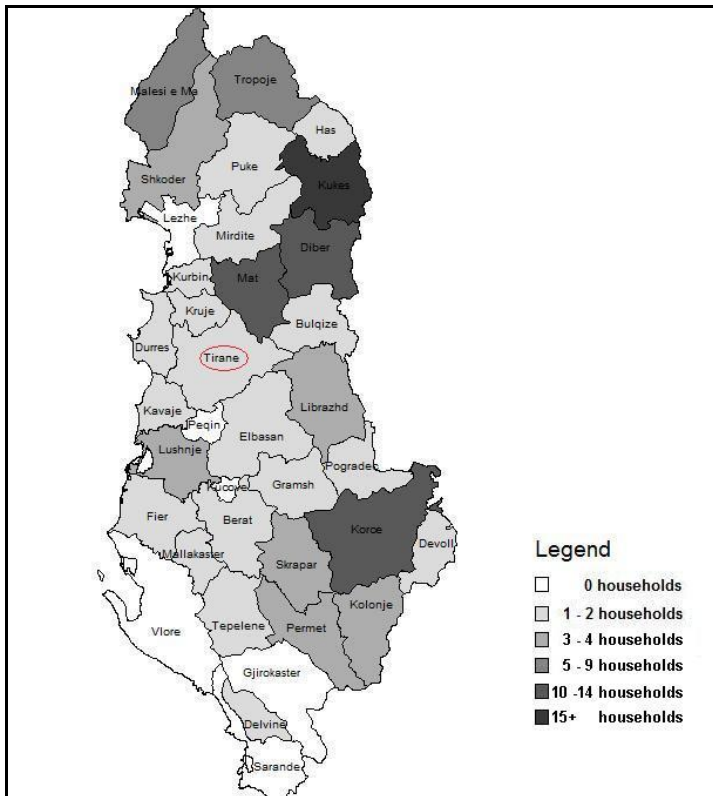
Between 1945-1990 internal migration in Albania was centrally controlled during the Communist regime. In fact, permanently relocating was not legally allowed (without prior permission) until 1993, although many people started moving a few years earlier already. With the fall of totalitarian regime in late 1990, the country faced severe social and economic challenges. The mass layoffs that followed the shut down of mines, plants, and inefficient state-owned enterprises created an immense pressure on the labour market. The agricultural land reform of 1991 authorized subdivision of former state-owned land to households based on equitable share basis (World Bank, 2006). In many areas, especially the mountainous ones, this land was insufficient, and moreover the process was accompanied by many difficulties and irregularities (World Bank, 2004).

Being left with few other possibilities, people from former industrial towns or remote villages started migrating either internationally (mainly towards the neighbouring countries, Italy or Greece), or internally (towards the main cities in the coastal area and Tirana). Official data show that almost one in three adults has migrated internally since birth (World Bank, 2007). Internal migrants first occupied former agricultural lands in the peri-urban areas of big cities, which soon developed into major settlements.

Internal migration in Albania is often characterised by relocation of the whole household. Unlike in other former Communist countries, migration is not circular and any future migration would mostly be to an

international destination. Earlier studies indicate that internal movers come from all socio-economic backgrounds (De Soto et al., 2002, Cila, 2006), and the main motivation behind the relocation seems to be economic, i.e. work-related (Carletto et al., 2004). Our qualitative interviews also show that often whole families and even villages relocated to the same area, for environmental, employment or education reasons.

Figure 1. Origin districts of surveyed households



Source: Own compilation

This study is based on a unique household survey that was conducted in 2008 amongst internal migrant households living in peri-urban households in Tirana, covering different kinds of households (i.e. nuclear and extended families). Figure 1 below depicts a map of Albania on which the district of origin of the surveyed households are marked. It shows that migrant households come from nearly all districts, but especially from the Northern and Central mountainous areas (the darker areas on the map).

For many of these migrant households the impact of migration has been far from successful. Previous studies (e.g. Cila, 2005 and Hagen-Zanker & Azzarri, 2008) show that unemployment is very high, and while income may be higher for migrant households after migration, consumption is not (Hagen-Zanker & Azzarri, 2008). This shows that households are faced with volatile circumstances and may still be very much dependent on inter-family transfers. One would expect that after migration especially financial transfers would increase. Furthermore the composition of the network may have changed. Households may leave family members behind due to internal migration and many also have family that migrated internationally. At the same time households are exposed to a heterogeneous group of migrants coming from all parts of Albania and living in very condensed living conditions. This could lead to more exchange and interaction with non-kin than before.

In this paper we investigate the impact of migration on kinship networks and patterns of resource sharing (financial, goods and service transfers) among kinship members. The study is related both to the economic analysis of inter-household transfers and the impact of internal migration literature and follows in the footsteps of a few papers that combine the two research areas. Studies focusing on the impact of internal migration on transfers for complete family relocation are limited in number. This literature focuses mainly on demographic changes in the US in the mid 20th century. The present study analyses this issue much more thoroughly utilising both qualitative interviews and advanced econometric techniques. Furthermore we focus on a transition economy where the role of private transfers is much more important. Internal migration is high in Albania, poverty in peri-urban areas remains wide-spread and state support is low. This makes the investigation of private transfers and their development over time an interesting and relevant research question.

The remainder of this paper proceeds as follows: Section 2 reviews the relevant literature and gives the reasoning behind the hypotheses. Section 3 describes the data, gives some descriptive statistics and outlines the empirical methodology. Section 4 analyses the results, and we conclude in Section 5.

2. Literature Review

This paper considers the economic aspects of family solidarity. Utility of an individual (or the total household in our case) does not only depend on own consumption, but also on consumption of their family and kin members (Becker, 1974, Becker 1976). From this perspective, the degree of helping and resource sharing is a clear and measurable indicator of family solidarity, which can vary over different networks or over time. More specifically, economic relationships between kinship members may be characterized by transfers of money, goods, or services rendered. Bengtson & Roberts (1991) argue that helping and resource sharing is one of the most important aspects of family solidarity. Changes affecting the structures of kinship networks can consequently affect the patterns of resource sharing. People's mobility through migration (and especially rural-to-urban migration) is considered to be an important factor that influences kinship ties (Blumberg & Bell, 1959). Mulder and Cooke (2009), using data from Netherlands Kinship Panel Study show that location of other family members outside the household may impede households from moving (when other relatives live nearby the household), or trigger internal migration (when other relatives live far away).¹

Whether migration takes place at all is also influenced by the strength of kinship networks. The migration network literature shows how kinship networks help potential migrants to migrate and then help migrants to find employment, housing etc. at the destination (e.g. Goss & Lindquist 1995). Choldin (1973) also emphasizes chain migration and help given to kin to also migrate. Through chain migration social networks may be reproduced in the new community. An important consequence of internal migration is that it is usually accompanied by a placement within clusters of kin relatives coming from the same areas (see also Blumberg and Bell, 1959; Hendrix, 1975). This may lead to the preservations of certain relations and habits, and may even contribute to reinforce them. What is clear, is that the decision to migrate internally is both affected by the kinship networks and at the same time affects the relationships within the same networks.

Previous studies have shown that permanent internal migration has pervasive effects on families and kinship networks. Duke-Williams (2009) argues that mobility and migration are key drivers in changes in households. Peoples' mobility contributes to the separation of households and the creation of new households. Blumberg and Bell (1959) argue that rural to urban migration changes the structure of kinship relationships. These changes are a consequence of the "dysfunctionality of the urban setting for a kinship relationship" since urban settings are usually different from those of villages or small towns. The same authors further argue that in urban settings the importance of the family and kinship tends to decline, while the residual functions (i.e. visits) may stay intact on the other hand and may become even stronger. In

¹ A number of other papers in a recent special issue in *Population, Space and Place* also highlight the importance of residential location on family ties and support (see Mulder & Cooke, 2009).

contrast, other studies cited by Blumberg and Bell (1959), show that a good part of rural migrants receive help from friends or relatives when they first move to urban areas.

Litwak's 1960 study in New York concludes that mobility reduced face-to-face contact, but not "extended family identification", i.e. feeling close to the extended family. He finds that over time family contacts are still as likely as before, but that long-term residents are more likely to be in contact with neighbours or belonging to a club. Jitodai (1963) finds that at arrival rural migrants in Detroit have higher rates of contact with their kin, than urban migrants, possibly because rural migrants are followed by their family. Over time contact rates for rural migrants stay more or less stable and those for urban migrants increase, becoming similar to contact rates of natives and of rural migrants. Migration thus did not hinder migrants in keeping in touch with their kin. Wellman et al (1997) also looked at social networks in Toronto in the 1970s. Kinship ties were most likely to remain ten years after the original survey, also for households that moved, while some ties with neighbours were lost for the households that moved. Ruan et al. (1997) look at the changing structure of social networks in Tiajin, China and find that between 1986 and 1993 individuals named fewer kin members as personal ties, while friends became relatively more important. The authors attribute this to changing policies in China that allowed for more residential and occupational mobility, which has some similarities with Albania's situation after 1989.

With regard to the transfer mix, there are few existing studies. Cox, Jimenez and Okrasa (1996) compare family solidarity before and after transition (1987 vs. 1992) in Poland. They find the same incidence of financial transfers in real terms, despite a worse economic situation, so family solidarity is somewhat weaker. Vullnetari & King (2008) describe a growing trend of "care drain" in Albania, namely the effect migration of adult children has on their elderly parents. They depict a pattern of fewer visits (as they mainly refer to international migration) and less care, both by parents (care of the grandchildren) and children (care of their parents). Even though financial transfers from migrant children to parents rise in some instances, they do not make up for the shortfall in physical care. In short, family solidarity weakens as result of migration.

The literature on determinants of remittances focuses on financial family transfers between the migrant and the family left behind². The literature predicts that there are financial transfers from the migrant to the household and wider family left behind due to a wide range of motives ranging from altruism to self-interest. There could also be transfers to the migrant, as part of a co-insurance agreement, for example when the migrant is temporarily unemployed (see Stark, 1991). The remittances literature would predict that there are more financial transfers between the family members after the move than before, since migrants generally migrate in order to remit. Finally the exchange motive would predict a rise in services from the household left behind to the migrants (e.g. taking care of children left behind) simultaneously with a rise in financial transfers from the migrant to the household. Even though in Albania's case generally the whole

² Remittances are the money transfers that that migrants send to their families left behind.

household moves (Instat, 2004), the remittances literature has some relevance. The motives for financial transfers, for example supporting needy family members, may explain changes in transfer patterns.

In conclusion, we expect that internal migration influences the kinship networks and the resource transfers within these networks. Due to longer distances between household members and greater financial means due to migration, we expect the importance of financial transfers to grow and services to decrease. Furthermore, economic theories on the causes of migration and motivations to remit hypothesize that financial transfers increase after migration (Hypothesis 1). Even if whole households moved together and they are joined by more kinship members, we can expect that the new surroundings and acquaintances lead to weakening of existing kinship networks (Hypothesis 2).

3. Data and Methodology

3.1 Data

The survey was administered by the authors, with the assistance of a team of students from Tirana University in April 2008. We selected the sample from the four main neighbourhoods that were populated after 1990 and accommodate a large migrant population. Each of those neighbourhoods has a slightly different migrant population, for example households living in Bathore are more likely to come from the Northern mountainous areas of Albania and are more likely to live in extended families. The selected households were distributed across the areas according to the size of these areas and importance of migrant inflows for these areas, which means that almost half of the sample was collected in Bathore, as this is the biggest peri-urban area and also has the largest migrant population.

By absence of street names and accurate population registers, we quasi-randomised our sample by sub-dividing our selected areas into strata of around one km² using satellite maps and then randomly selecting houses in selected strata. The sub-sections were then assigned to interviewers, who also marked the exact location of interviewed households on the map. If the selected households did not fit the criteria of being an internal migrant household (11.48%), or refused to participate (25.68%), a neighbouring house was chosen. Our positive response rate is 74.32% and in total we interviewed 112 households. Table 1 below shows the number of households that were selected in each area.

We used two types of questionnaires. The main questionnaire has 137 questions ranging from information on the main households' demographics, education, employment, income, and migration history to the key section on family solidarity. A total of 26 households were also interviewed in semi-structured interviews using additional qualitative questions.³

In the main section on family solidarity, households are questioned in great detail about transfers between the main household and a random selection of extended family members and neighbours, who the main household is in regular contact with, both before and after the move. Households were first asked to list all relatives and friends with whom they were in contact with on a regular basis and then the interviewer randomly selected two relatives in each of five broad categories of relatives (i.e. parents, children, siblings, other relatives and friends) by choosing the first two relatives whose first name comes earlier in the alphabet. We then asked some basic demographic questions on all family and friends. Further questions on the socio-economic characteristics of the relative/ friend and on family solidarity were only asked about the selected relatives.

Households were questioned on the financial transfers, goods and services exchanged both in the last twelve months and before the move. In the latter case, households were divided broadly in those coming

³ Only Jessica Hagen-Zanker & Florian Tomini conducted interviews. All households questioned by them were asked whether they would be willing to also participate in an open-ended interview that was to be recorded, but not all households agreed. The qualitative interviews were thus based on a sub-section of the main sample.

before 1997 and those coming after this year.⁴ In order to get a similar basis of comparison, migrants moving before 1997 were asked about the transfers during the last 12 months before 1991, and those moving after 1997 about transfers during the last 12 months before 1997.⁵ Detailed questions were asked on the type/ amount of the transfer and the frequency for both before and after the move. In this paper we only make use of the data on the receipt of transfers because this allows us to have more control variables based on household information.

3.2 Descriptive Statistics

We first give a short description on the socio-economic characteristics of our sample by the neighbourhood the household lives in. Around 96% of the household heads sampled are male and about 90% are married and there are no significant differences per area. Table 1 below outlines further characteristics.

Table 1. Household characteristics in the sampled areas

Area	5 Maji	Bathore	Selite	Senatorium	Total
Age household head	53.53	49.6	50	52.75	50.93
Education household head	11.37	10.4	10.93	11.65	10.92
Household head Muslim	0.74*	0.89	0.89	0.90	0.87
Household head Coastal origin	0.05	0.02*	0.25***	0.00	0.08
Household head Central origin	0.63**	0.09***	0.61***	0.45	0.38
Household head North Central origin	0.11	0.22**	0.04*	0.10	0.13
Household head Mountain origin	0.21*	0.67***	0.11***	0.45	0.41
Household is extended family	0.21	0.33**	0.11*	0.15	0.22
Household arrived before 1997	0.37	0.49	0.32	0.45	0.42
Number of household members	4.74	5.87***	4.32**	4.35	5.02
<i>Number of observations</i>	<i>19</i>	<i>45</i>	<i>28</i>	<i>20</i>	<i>112</i>
Income/ capita	16872.81	8049.93***	20053.09***	14325	13764.94
<i>Number of observations</i>	<i>19</i>	<i>42</i>	<i>27</i>	<i>20</i>	<i>108</i>

Stars indicate whether the mean for each group is significantly different from the total mean (* significant at 10%; ** significant at 5%; *** significant at 1%)

Household heads are on average 51 years old and have on average 11 years of education (; however there are no significant differences between areas. Most household heads are Muslim, but significantly fewer in 5 Maji, a more recent peri-urban area. We see that household from Coastal origins are significantly strongly represented in Selite, and household from Central origins in 5 Maji and Selite. Both are underrepresented in Bathore, where household are significantly more likely to come from North Central and especially the mountain areas. Most households we interviewed are nuclear families, but households in Bathore are significantly more likely to live in extended families. Consequently they also have significantly more family members per household. Households in Bathore have the significantly lowest income per capita

⁴ 1997 was chosen both as a chronological milestone and because the turmoil that followed the collapse of the financial pyramids led to an increase in numbers of especially poor migrants to peri-urban areas of large cities.

⁵ Recalling transfers in the past is tricky at best. Therefore to enable recall, we asked households to give us transfer patterns for a memorable year in the past, either 1990 if the household moved before 1997 or 1997 if the household moved after 1997. 1997 is memorable because of the pyramid savings scheme crisis and 1991 is memorable because it is the year that the Communist system collapsed.

and households in Selite are significantly richer. More households arrived before 1997 in Bathore and Senatorium (these were the areas that were first settled), but the difference is not significant.

We also look at the level of individual kin the household exchanges with. Kin members are classed into broad categories and we compare whether household has received transfers from these kin. Not all kin the household named, and that was selected, exchanged transfers with the household, as can be seen in Table 1 in Annex 1.⁶ We ask the question on the receipt of transfers for the past 12 months and for the situation before migration took place. We analyse three types of transfers: Financial transfers, goods and services.

Table 2 compares transfers by the likelihood of receiving transfers from different kinds of kin.

Table 2. Transfer likelihood from different kin

Type of kin the hh receives transfers from	Parents & parents in law	Children	Siblings	Relatives	Friends	Total
Hh received financial transfer before migration	0.09	0.19**	0.11	0.11	0.13	0.11
Hh received financial transfer in past 12 months	0.19	0.07***	0.18	0.16	0.19	0.17
Hh received goods before migration	0.21	0.26	0.21	0.21	0.33**	0.22
Hh received goods in past 12 months	0.33	0.25	0.27	0.28	0.26	0.28
Hh received services before migration	0.3	0.44**	0.31	0.29	0.4	0.31
Hh received services in past 12 months	0.31	0.19*	0.28	0.25	0.27	0.27
<i>Number of observations</i>	<i>71-86</i>	<i>22-34</i>	<i>196-216</i>	<i>107-126</i>	<i>24-106</i>	<i>1064</i>

Stars indicate whether the mean for each group is significantly different from the total mean (* significant at 10%; ** significant at 5%; *** significant at 1%)

Before migration households were significantly more likely to receive money from their children, while households are significantly less likely to have received money from children in the past 12 months. This can not only be due to children growing up, since households were also significantly more likely to receive money from their children before the move and since we also had quite a varied age range of household heads. Households are also significantly more likely to have received services from their children before the move, whereas we see the opposite pattern in the past 12 months.⁷ In the past households were significantly more likely to receive goods from friends and after migration households seem to receive more financial transfers from friends, compared to other relatives (not significant). So far, the descriptive statistics do not show a clear network change or change in the transfer mix.

Table 3 below shows the transfer frequency from different types of kin. There are no significant differences in the frequency of financial transfers received from different kin members (except for services) for both before and after migration. It is noteworthy however that the average number of financial transfers

⁶ Furthermore these questions were not always completed even for the selected relatives.

⁷ We excluded relatives from the before migration analysis that were part of the same household as the current household head in the past so that the extremely high transfers that tend to be exchanged within the same household do not bias our results.

has increased from 0.34 to 0.6 transfers received per relative. There are also no significant differences for good transfers. However, it is interesting that the average good transfer received from children after migration (2.56 goods per child) is much higher than before (0.7).

Table 3. Transfer frequency from different types of kin

Type of kin the hh receives transfers from	Parents & parents in law	Children	Siblings	Relatives	Friends	Total
Frequency financial transfer before migration	0.29	0	0.25	0.66	0.04	0.34
Frequency financial transfer in past 12 months	0.5	0.17	0.68	0.42	0.92	0.6
Frequency goods transfer before migration	3.26	0.7	3.5	2.18	2.36	2.89
Frequency goods transfer in past 12 months	3.16	2.56	2.39	1.62	1.26	2.18
Frequency services transfer from before migration	11.26	14.38	10.88*	4.79***	7.93	9.11
Frequency services transfer in past 12 months	8.81*	12.89***	7.08	3.35***	6.73	6.65
<i>Number of observations</i>	<i>61-151</i>	<i>18-54</i>	<i>182-407</i>	<i>110-235</i>	<i>25-132</i>	<i>397-987</i>

Stars indicate whether the mean for each group is significantly different from the total mean (* significant at 10%; ** significant at 5%; *** significant at 1%)

For services we see that both before and after migration other relatives are the least important givers of services. Before migration households received significantly more services from siblings and after migration households received significantly more services from parents and children. While services remain by far the most frequent transfer received, a lower average number of services are exchanged after migration (6.65 down from 9.11 services per relative).

3.3 Methodology

We want to test the determinants of inter-household transfers and also analyse the impact of migration on transfer patterns. For this we consider frequency of receiving monetary, goods, and service before migration and in the last 12 months before the survey was administered, i.e. after migration⁸.

We pool the data from before and after migration, accounting for when the transfer takes place with the migration dummy. To achieve this we use the same variables for before and after migration. When applicable, the variable is adjusted to the period before migration (e.g. age, number of children etc.).

As the transfers occur within a defined limit of time, and the probabilities of consecutive transfers are not dependent on each other, we assume that the distribution of transfers' frequencies follows the Poisson distribution. Consequently, the count rate would be calculated as:

$$\mu_i = E(y_i) = \exp(x_i\beta) \quad (1)$$

⁸ For our analysis we only consider the receipt of monetary, goods, or service transfers as we are primarily interested in the household factors driving such transfers both before and after migration, and our survey focuses primarily on the characteristics of the interviewed migrant households (less information is collected on the selected relatives). Giving of transfers, reproduced in Table 9 of Annex 4, gives similar results, indicating that giving and receiving follow the same patterns after migration.

where, μ_i is the expected value of the model dependent on a vectors of covariates, β is a vector of estimated coefficients, and x_i includes characteristics of receiving household and sending relative. The probability of observing a specific count is:

$$\Pr(Y_i = y_i) = \frac{e^{-\mu_i} \mu_i^{y_i}}{y_i!}, \quad y = 1, 2, 3, \dots, n \quad (2)$$

where, for the i^{th} count, y_i is the count.

However, our data show some particularities that do not satisfy this distribution. We notice over-dispersion (variance is greater than mean), and also suspect an excess of “zero” values. We suspect that this excess is a result of two main reasons:

1. Random heterogeneity in frequencies of received transfers. In other words, households ‘face’ the same probability of receiving zero or any other frequency of transfers, but some households receive more zero or ‘low count’ transfers, and others receive more ‘high count’ transfers due to idiosyncratic factors or a random bias.

2. Some households are systematically not receiving transfers because of their characteristics. For example, respondents may have had limited contact with their relatives in the last 12 months before the move.

The standard Poisson model therefore does not satisfy the features of our data. In order to investigate what drives the over-dispersion in our data, we extensively compare different count models. We compare the “negative binomial regression model” (NBRM) to the “zero inflated Poisson” (ZIP) and “zero inflated negative binomial regression” (ZINBR) which use a two stage approach. In the first stage zero and non-zero outcomes are modelled, and in the second stage the remaining counts are modelled according to the standard Poisson (ZIP) or to the negative binomial (ZINBR). Technical details of both these models are discussed in Appendix 1.

We calculate and compare the predicted values of NBRM, ZIP and ZINBR models in Annex 3. Further tests, partially reproduced in Annex 3, confirm that a simple Poisson model is inappropriate in this context, having far less accurate predictions than the other models discussed. For all types of transfers, the ZIP model performs better than the standard Poisson, but the predictions are less accurate than NBRM and ZINB. This indicates that transfers “suffer” mostly from an idiosyncratic and random bias rather than inflated zeros. In fact, NBRM and ZINB perform similarly in predicting the probability of counts, providing less evidence on the ‘inflated zero’ distortion. We therefore choose to discuss the results of NBRM as the model that explains the hidden heterogeneity in the transfers’ counts best. For comparative purposes, the results for all combined transfers using NBRM and ZINB are reproduced in Table 8 in Annex 4. In fact the

results from ZINB regressions for separate transfers are very close to the NBRM results.⁹ The NBRM accounts for heterogeneity among count outcomes. The predicted count probability is:

$$\Pr(Y = y_i) = \frac{\Gamma(y_i + \phi)}{\Gamma(\phi) y_i!} \left(\frac{\phi}{\mu_i + \phi} \right)^\phi \left(\frac{\mu}{\mu_i + \phi} \right)^{y_i}, \quad y = 1, 2, 3, \dots, n \quad (3)$$

where, the variance in the predicted counts is increased through a parameter ϕ^{-1} accounting for the suspected (over)dispersion (see also Freese and Long, 2001).

In order to check how the support from different members of the network has changed before and after migration we estimate NBRM models separately for before and after migration. Differences between coefficients are then checked for significance using seemingly unrelated estimation (see also Weesie, 2000).

While we have quite a varied range of control variables, our survey does not provide us with information on household income or wealth in the past. We are aware that these kind of economic indicators are important in explaining differences in transfer patterns, therefore we have controlled for it using the present income as a proxy for past incomes. The results are given in Annex 4.

4. Empirical Results

We use two types of analyses in order to answer whether transfer patterns between extended family members have changed as a result of the move. We first analyse the open-ended qualitative interviews and draw first conclusions from the respondents' opinions. We then analyse the quantitative data using an econometric analysis comparing the results to the hypotheses and conclusions from the qualitative analysis.

4.1 Qualitative analysis

The open-ended questions are first coded into groups with similar responses for the 19 open-ended questions that we asked. We count how often respondents answered in a similar way and draw conclusions here based on the frequency of certain answers. Annex 2 gives an overview of the questions asked, coding and number of observations for each type of response.

Even if families are separated by physical distance, many claim that their relationship was not negatively affected by this. Many of the interviewed households claimed that they meet their families more frequently than before (8 households). Half of the interviewed households (13) also claimed that their relationship to other family members did not change, with about the same number of households citing an improvement or a worsening of their relationships. While some families talked about relationships and lives having become more distant and separate, other respondent explain how the separation itself has made them closer:

⁹ The results of estimated ZINB models show, as we suspected (see reasons explained in the methodology section), that we may have some additional zeros added because of not being in the same district or because of having an extended family. However, the improvement to the overall predicted values is not essential and statistical tests show that both models are comparable. ZINB results for monetary, goods and service transfers are available on request from authors.

“My father often goes to visit them. He has a lot of nostalgia.”

“Yes my relationship with them didn’t change. The distance can’t change the affection we have for each other.”

Many households also feel much closer to their families because they shared the experience of moving. Most families moved together with their nuclear, extended family or even the whole village (10 households say this explicitly). This means that their whole solidarity network is replicated in the city. For example one household head explained:

“All our neighbours are blood-related; it’s the same big family... All our neighbours here were neighbours there.”

Another household told a similar story:

“The village of K., around 16 houses, has moved together to this place. The entire block belongs to the S. family.... The strongest relations we keep with our neighbourhood, the S. families. We are all brothers or cousins up to the fourth degree. We have very good relations.”

There are about an equal number of households that claim that they have more/ fewer friends or contacts with neighbours. Many households are thus still exchanging with the same people.

While family relationships thus often remained close, the type of transfers exchanged between household members changed. Despite the high unemployment which almost all respondents name as their greatest problem, in general households benefited financially from the move (see also Hagen-Zanker & Azzarri, 2008). We see that financial transfers are becoming more important. This allows them to give and receive more financial transfers (3 out of 5 households say they receive more financial transfers). At the same time less help is needed, than in an agricultural setting (4 out of 5 households say that they receive less services). Many respondents pointed out this shift from services to financial transfers:

“To be realistic, if I would have to help everyone I would have to give up my day of work, so the help is more limited to monetary terms and not physical anymore.”

“At that time you needed some help to work the land. Now you need more financial help.”

“Yes with money now and in the past with work.”

One respondent even declared that financial solidarity replaces social solidarity to some extent:

“Economic relations are better now. Affective relationships are less good. When you get a bit richer you grow apart a bit.”

The exchange of goods exchange of goods remains in between financial and service transfers. We see that certain kinds of good transfers, i.e. food products, have become less important. This is because households now grow and collect less food than in rural areas and are therefore less able to give food products, as these respondents explain:

“Here we buy all things in shops. There is no reason to ask your neighbour for something because the shop is there. Before it was different, we exchanged more goods.”

“We help each other less because now we don’t own agricultural land, so we have fewer products to help each other.”

“Yes, there [referring to village of origin] the people can help more than here because they have cows, grow vegetables etc.”

Even though migration seem to have some small effects on the relatives that households choose to exchange transfer with, a preferences for known relatives remain mostly unchallenged. Furthermore financial transfers are now more important than in the past.

4.2 Econometric results

Table 4 below gives the results from the NBRM for financial, goods and services received. Table 8 in Annex 4 gives the regression results for all transfers combined. We pool the data from before and after migration, accounting for when the transfer takes place with the migration dummy. To achieve this we use the same variables for before and after migration.

The tests at the bottom of Table 4, and in Annex 3 measure whether the NBRM model is the appropriate model to use in this context. The results in Annex 3 show what the actual and predicted mean count for all transfers is for each of the models and the difference (how much the prediction diverges from the actual count). The Pearson test is a chi-squared test of independence and also indicates how close the predicted count is to the actual count. We see that generally the NBRM model is one of the models that predicts the best. In Table 4, the likelihood ratio Chi-bar squared statistic allows us to see if the NBRM should be used instead of standard Poisson. The very low values of the probability suggest over-dispersion, and therefore the use of NBRM is appropriate.

Our variable of interest “transfer after migration”, which is a dummy variable that is one for the observations after migration, is highly significant for all transfers combined (see Table 8) and the separate transfers. Below we discuss the different types of transfers.

Table 4. Results from NBRM: Frequency of receiving transfer

	<i>Financial transfers</i>		<i>Good transfers</i>		<i>Service transfers</i>	
	Coef.	st. error	Coef.	st. error	Coef.	st. error
<i>Main regression</i>						
Transfer after migration	1.01***	0.32	-1.08***	0.26	-1.00***	0.28
Relative parent	0.05	0.61	1.28**	0.54	-1.09*	0.6
Relative child	-0.51	0.86	2.10***	0.64	0.48	0.67
Relative sibling	0.25	0.41	0.73*	0.37	-0.81*	0.42
Relative other	-0.26	0.47	0.02	0.38	-1.83***	0.45
Age hhh (now/ before migration)	-0.03**	0.01	-0.02*	0.01	-0.01	0.01
Gender hh head	1.35**	0.64	-0.91	0.64	-0.27	0.82
Education years hhh	-0.04	0.06	0.08**	0.03	0.08*	0.05
Hhh's religion Muslim	1.00*	0.52	0.99**	0.43	0.28	0.48
Hhh's origin Central	-0.65	0.54	0.5	0.44	0.91*	0.5
Hhh's origin North-Central	-0.24	0.61	0.32	0.53	0.57	0.58
Hhh's origin Mountain	-0.73	0.54	-0.5	0.47	0.25	0.51
Hh extended family (now/ before migration)	0.37	0.29	-0.60**	0.27	-0.61**	0.28
Number of children hh (now/ before migration)	-0.15	0.15	-0.06	0.12	0.35***	0.13
Years since migration	-0.06*	0.04	0.05**	0.02	0.01	0.03
Age relative/ friend (now/ before migration)	0.02	0.01	0	0.01	-0.01	0.01
Gender relative/ friend	-1.30***	0.29	-0.06	0.26	0.34	0.27
Education years relative/ friend	0.07	0.05	0	0.04	-0.09**	0.04
Hh & relative/ friend same religion	-0.58	0.58	0.13	0.52	-0.37	0.65
Hh & relative/ friend live in same district (now/ before migration)	1.15***	0.32	0.26	0.29	1.17***	0.29
Constant	-2.19	1.66	0.25	1.33	2.84*	1.51
Ln alpha	2.18***	0.13	2.16***	0.08	2.36***	0.07
Number of observations	882		880		877	
Log pseudo likelihood	-613.47		-1564.72		-1128.67	
P- value Chi ²	0.00		0.00		0.00	
Pseudo R ²	0.0628		0.0198		0.0323	
LR Chibar ²	1276.72		150000		6017.65	
P-value Chibar ²	0.00		0.00		0.00	

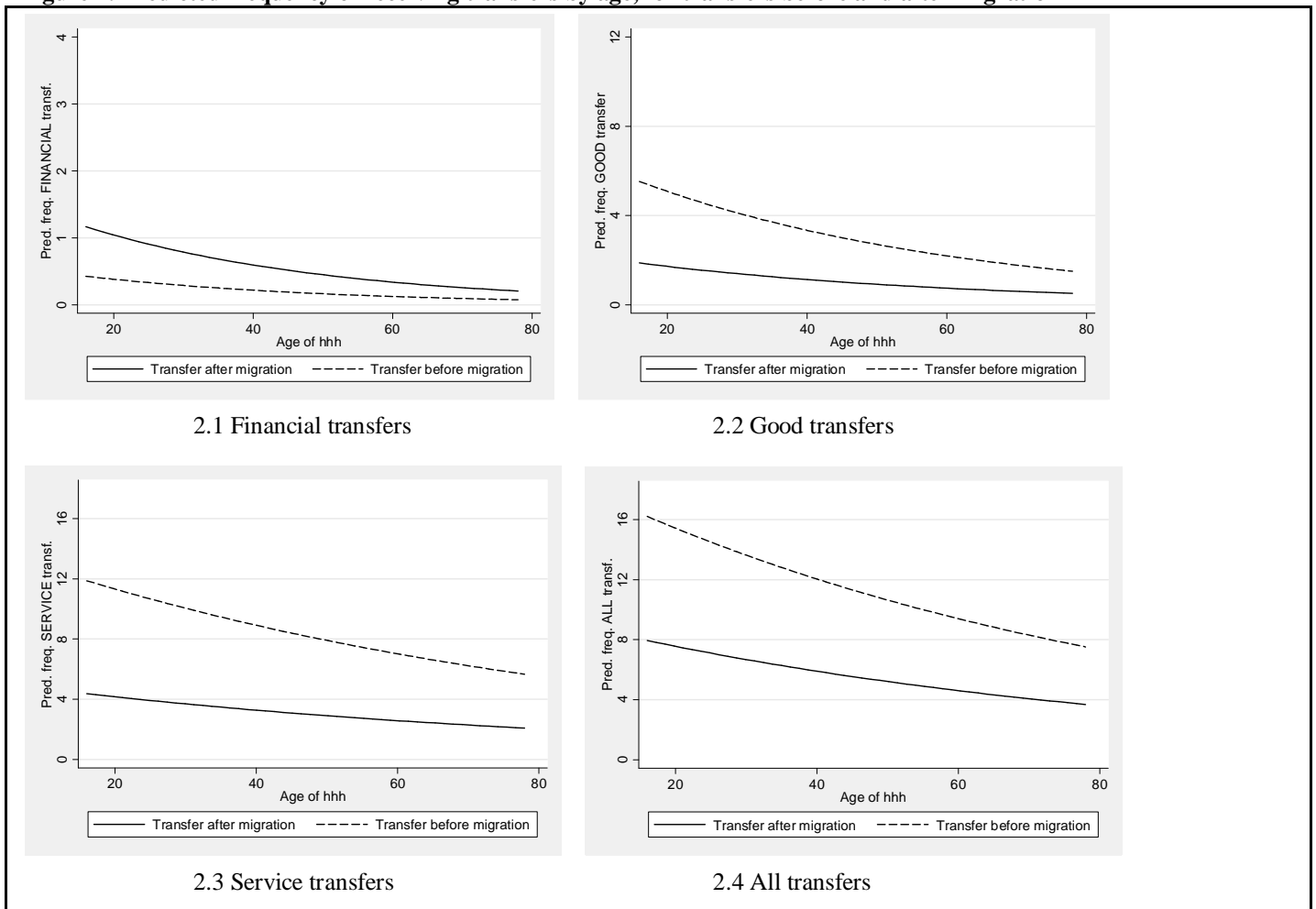
Note: Frequency of transfers refers to the number of times the transfer has been received in the past 12 months/ before migration
 “Transfer after migration” is a dummy variable that is one for the observations for the period after migration
 Base for relatives (friends), religion (all other religions), household origin (Coast)
 * significant at 10%; ** significant at 5%; *** significant at 1%

For receiving financial transfers, the variable of interest “transfer after migration” has a strong significant effect, indicating that financial transfers have become more frequent after migration and confirming the qualitative analysis and Hypothesis 1. This means that for a given transfer partner and all other parameters being equal, financial transfers are received 0.3 more frequently by an average household after migration.¹⁰ Figure 2.1 shows the predicted frequencies of financial transfers by age, for those transfers before and for those transfers after migration. The figure confirms that financial transfers are more frequent

¹⁰ Marginal effects are not reproduced here and can be requested from the authors.

after migration, at all ages. The difference is especially large for younger household heads, who seem to be getting more frequent financial transfers on average.

Figure 2. Predicted frequency of receiving transfers by age, for transfers before and after migration



Source: Own compilation

The “relative” variables show that friends give money more frequently than parents, children, or other relatives, but less frequently than siblings. However, this effect is not significant for any of the relatives.

The dummy variable, “gender of household head”, has a positive effect on the transfers received (female headed households receive more frequently) and “gender of relative” has a negative effect (women relatives gives less frequently). This does not necessarily show that women tend to give less frequently, but rather that transfers may be explained by the particular situation of the households. Most of the female headed households happen to be in financial difficulties either because of the loss of the main breadwinner (i.e. widow headed households) or are in vulnerable situation due to the informal and unstable labour market.¹¹ Households that moved before 1997 seem to receive monetary transfers less frequently than others. This can be explained by the “relative success” that these households have in financial terms due to more stable and better paid jobs (see Hagen-Zanker & Azzarri, 2008). Most other control variables are significant and the coefficients have the expected signs.

¹¹ Albanian society preserves patriarchal norms where the men are always declared as the head of the household, and therefore male headed households make up for most of our sample.

Coming to goods, the variable of interest “transfer after migration” is highly significant and negative. More specifically, for a given transfer partner and all other parameters being equal, an average household after migration receives 1.9 less frequent good transfers. Based on the informal interviews it appears that this pattern is driven by changes in the nature of goods that are exchanged. Before migration, the goods that were exchanged consisted mainly of food and agricultural products, which are exchanged repeatedly. After migration, food is exchanged less frequently as people grow less of it in peri-urban areas. However, people now exchange gifts on special occasions, like birthdays, maybe due to changing cultural practices and more financial wealth from migration. These kinds of transfers take place non-frequently. Figure 2.2 shows the predicted frequency of good transfers by age, for those transfers before and for those transfers after migration. The figure shows very clearly that good transfers are lower at all ages after migration. Interestingly, the difference in the predicted frequency between before and after migration is lower for older household heads.

Looking at the relatives that give goods to the household we see that family relatives are generally more important givers of goods than friends (not significant for “Relative other”). The variable “Education years of household head” has a positive and significant effect showing that the most educated (and therefore those with higher chance of success in the labour market) receive goods from their kin members more frequently. Extended family households receive goods less frequently since they have stronger links with persons within their own household (the survey only measures inter-households transfers).

Finally, for service transfers, the main variable of interest “transfer after migration” is strongly significant and negative. This means that for a given transfer partner and all other parameters being equal, there are 5.2 fewer service transfers received by a given household after migration. The results that less goods and services and more financial transfers are received by households confirm Hypothesis 1. These results are not surprising given our qualitative interviews: Relatives that are often also internal or international migrants are now much more able to give financially due to better-paid employment and have less time to spend on other transfers (such as services) due to increased distances and a different employment structure.

Figure 2.3 shows the predicted frequency of service transfers by age, for those transfers before and for those transfers after migration. It shows clearly that service transfers were higher before migration, at all ages. We see a slight decrease in the difference between “transfers before migration” and “transfer after migration” at higher ages, but to a much lesser extent than for financial transfers and goods. This might be explained by the fact that service transfers are probably much less affected by behavioural changes and that living close by (which we control for in the regression) affects the transfer of services much more.

Coming to relatives, we again see that all relatives (except children) are significantly less important than friends in terms of frequency of service transfers. Again we suspect this to be a consequence of migration and we confirm this by running models separately for before and after migration (see discussion below). Education of the household head again has a positive effect on frequency of services (confirming

the same trend we noticed for goods). The number of children also has a positive effect suggesting that most of services exchanged are also related to child minding activities. As expected living in the same district has a strong positive effect. This confirms previous studies (e.g. Mulder & van der Meer, 2009) that highlight the importance of geographical proximity for receiving service support. The other variables have the expected signs and are generally significant.

Of course transfers are not mutually exclusive; therefore we also include a NBRM regression that measures the probability of having a certain frequency of transfers including a combination of transfers.¹² The results are included in Table 10 and strongly confirm our previous findings. The increased monetary transfers after migration have been superseded by the decrease in goods and services, therefore the overall effect of migration is the decline in the combination of transfers (Figure 2.4). This is an interesting result. Apart from the above arguments explaining the decline of both goods and services, we can also attribute this to the increasing value placed on individuality and independence after migration, a comment that was often brought up by respondents in the qualitative interview stage.

Friends transfer more frequently than parents, siblings (not significant) or other relatives, but less than children. We suspect that the migration has played a role in this (see Hypothesis 2), and therefore investigate this further.

Table 5 gives differences in coefficients for relatives as compared to friends estimated in separate NBRMs for before and after migration and measures whether this difference is significant.¹³ Control variables used are the same as in Table 4.

Table 5. Differences in coefficients from separate NBRM (before and after migration)

	<i>Financial</i>	<i>Goods</i>	<i>Services</i>	<i>All transfers</i>
	Difference of coefficients (after - before)			
Relative Parent	-1.26	-1.08	-2.25**	-1.43
Relative Child	14.55***	2.59*	-0.12	-0.01
Relative Sibling	-2.77***	-0.9	-1.9***	-1.57***
Relative Other	-3.43***	0.25	-1.57**	-1.03

Note: The complete results are reproduced in Table 10, Annex 4.

* significant at 10%; ** significant at 5%; *** significant at 1%

For financial transfers we see that after migration siblings and other relatives have become relatively less important (negative and significant difference in coefficients) compared to friends. The same holds for parents (though difference is not significant). However, transfers from children have not declined in

¹² The frequency of separate transfers (financial, goods and services) are summed to calculate the total number of transfers received.

¹³ The results are estimated using “seemingly unrelated estimation” procedure (Weesie, 2000). See Table 10, Annex 4 for extended results of NBRM models.

frequency, even though we have to treat this result with caution as children have a low number of non-zero observations (see Annex 1).

The results are further confirmed for good transfers, where the positive and significant difference of coefficients for children shows that they are becoming increasingly more important after migration. On the other hand, the role of other members of kinship is superseded by friends (however, results are not significant).

The same trend is also confirmed for service transfers where most of are significant while the signs only change for the non-significant children. The effects are stronger for these transfers given their particular characteristics (physical distance is essential in delivering frequent services to relatives).

Generally, all the above results confirm that migration has partially shifted transfers more towards particular members of kinship. Children and friends become increasingly important after migration, especially for services, and the effects are not always significant but consistent. The findings indicate that some change in the network takes place after migration, thus confirming Hypothesis 2.

An additional explanatory variable that is likely to affect transfers received is income or wealth of the household. As explained above, we do not include this control variable in our main model, as we do not know the household's income before internal migration. However, to measure the effect of income and to safeguard that our results are not strongly affected by this omission, we control for wealth by using current per capita income (see Table 7 in Annex 4). Firstly, the signs, statistical significance and size of the noteworthy regressors are not affected much by controlling for income. This strengthens our previous results. Secondly, income has the expected negative effect on good and financial, good and service transfers received (but not significant), which shows that richer households receive fewer transfers.

5. Conclusions

This paper is based on a unique survey amongst internal migrant households in peri-urban Tirana, Albania conducted in April 2008. The informality of the settlements complicated sampling design and a random sample selection, which may affect the strength of these conclusions. Internal migration to peri-urban areas of major cities is a wide-spread phenomenon in the country. This movement is often characterized by whole family relocation. We are particularly interested in how the change of location through internal migration has affected the reliance on family and non-family members of kinship and the patterns of transfers. For this we look at three main transfers (financial, goods, and services) and investigate the changes in receiving patterns both at the current moment and before migration. By exploiting both a quantitative survey and additional qualitative interviews, we show that migration has affected the mix between the transfers that households receive, towards more frequent financial transfers (Hypothesis 1) and has also had some effect on the composition of the family network on which they rely upon (Hypothesis 2).

The first hypothesis relates to the effect of migration on the mix of transfers, looking at the intensity of receiving a certain transfer. Migration seems to have a positive effect on the receipt of financial transfers, indicating that households receive more frequent financial transfers after migration. While the effect is positive and significant, its marginal effect is small: On average, households receive 0.3 financial transfers more from a given relative (*ceteris paribus*). The shift towards financial transfers seems logical: After migration households are more in the need of financial transfers than before. Previous studies (e.g. Hagen-Zanker & Azzarri, 2008 and Cila, 2006) confirm that unemployment is high amongst internal migrant households and that living costs have increased compared to living in rural areas (e.g. having to pay for water). Living in these highly peri-urban areas where the role of the state is weaker and poverty rates are higher than the inner city (Zezza et al., 2005), increases vulnerability and dependency of households on private kinship financial transfers. While one of the migration effects is expected to be improvement of financial inflow, the higher vulnerability of these households may explain why financial transfers are received more frequently after migration.

Migration's impact on good transfers is interesting. Migration decreased the frequency of receiving goods and households receive 1.9 goods less on average from a given relative (*ceteris paribus*). This is a big drop in goods received and based on the qualitative interviews it appears that this pattern is driven by changes in the nature of goods that are exchanged. Before migration, goods exchanged were mainly food and agricultural products, which are exchanged repeatedly. After migration, food is exchanged less frequently as people grow less of it in peri-urban areas. However, they exchange gifts on special occasions, like birthdays, more often, maybe due to changing cultural practices and more financial wealth from migration. These kinds of transfers take place non-frequently.

Finally, our results show that households receive service transfers less often after migration. On average a household received a service 5.2 times fewer from a given relative (*ceteris paribus*). This is logical, as services require proximity of transaction partners and migration is likely to have split some of the family networks. This is reinforced by the result that service transfers are more likely and frequent, if the household and kinship member live in the same district. Furthermore households and kinship members that have also migrated internally are probably less able to give services due to lack of time, brought about by volatile employment and more time spent on job search.

The second hypothesis focuses on the network the household receives transfers from. When examining all transfers combined, we see that internal migration has changed the household's network and we see that, with the exception of children, friends are becoming more important than relatives in giving transfers to the surveyed households. This is somewhat surprising given the qualitative analysis, which revealed that whole extended family networks and even villages moved together and which also showed that households have a very conservative attitude towards strangers. Friends rise in importance compared to parents, siblings and other relatives, but the effect is not always significant. The results show that in

particular friends supersede siblings for financial transfers, and siblings and other relatives for services. This may be related to the nature of such transfers. Financial transfers are less personal, which may explain the rising importance of friends giving these transfers, despite the conservative nature of internal migrant households. On the other hand, distance is an essential condition determining the frequency of service transfers. In conclusion, we see some changes in the family network households rely on, but no complete transformation.

The above conclusions are drawn on a small-scale household survey in a very specific context. Whether the results on the continuing reliance on family members are generally applicable is debatable. In the Albanian case, whole families and even villages relocated permanently. Due to the specific nature of Albanian internal migration and the conservative nature of the migrants, transfer networks stayed closely integrated. This is very different in other internal migration contexts, e.g. China, where only one family members moves. Different patterns of migration are likely to affect the continuation and strength of pre-migration networks.

The other main conclusion, the switch to financial transfers after migration is probably even more pronounced in other migration contexts. Migration makes family members more physically distant, and thus less able to exchange goods and services. Furthermore migration towards (better) paid employment allows people to exchange more financial transfers.

The continuing and high levels of private support to migrant households are valuable in a transition context, where poverty is wide-spread and state support is low. Our findings suggest that in absence of public mechanisms, migrant households resort to private transfers for financial resources. We have shown that both receiving and giving financial transfers increase after internal migration. However, it is questionable whether these financial resources are an adequate and sustainable source. Moreover, our findings have shown that services and goods transfers received by households decrease after migration. The government should have a stronger role in replacing family support, for example by providing child care opportunities for female headed households.

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Appendix 1. ZIP and ZINB models

The first stage of both the ZIP and ZINB model determines whether the count is zero/non-zero, and the second stage is used to model the actual magnitude of the count. The final outcome therefore is determined by two separate probabilities as below:

$$\Pr(Y_i = y_i) = \pi_i f_1(y_i) + (1 - \pi_i) f_2(y_i) \quad i = 1, 2, 3, \dots, n \quad (3)$$

where, π_i is the probability of a zero count in the transfer/non-transfer model, $f_1(y_i) = I_{\{0\}}(y_i)$ and $f_2(y_i)$ is the probability density function of the Poisson distribution (as in equation 2). Given this, the probability of observing a certain count using a zero inflated model would be:

$$\text{ZIP:} \quad \Pr(Y_i = y_i) = \begin{cases} \pi_i + (1 - \pi_i)(\exp(-\mu_i)) & \text{for } y_i = 0 \\ (1 - \pi_i) \frac{\exp(-\mu_i)^{y_i}}{y_i!} & \text{for } y_i > 0 \end{cases} \quad (4)$$

$$\text{ZINBR:} \quad \Pr(Y_i = y_i) = \begin{cases} \pi_i + (1 - \pi_i) \left(\frac{\phi}{\mu_i + \phi} \right)^\phi & \text{for } y_i = 0 \\ (1 - \pi_i) \frac{\Gamma(y_i + \phi)}{\Gamma(\phi) y_i!} \left(\frac{\phi}{\mu_i + \phi} \right)^\phi \left(\frac{\mu}{\mu_i + \phi} \right)^{y_i} & \text{for } y_i > 0 \end{cases} \quad (5)$$

where, μ_i is again the expected value of the model ($\log(\mu_i) = x_i' \beta$), while π_i is also dependent on covariates determining the overrepresentation of 'zero/non-zero' values ($\logit(\pi_i) = z_i' \psi$). We use similar control variables both for the 'inflation' and the outcome probability models as this helps in identifying the possible roles of variables explaining the earlier 'inflation' model.

Annex 1. Incidence of receipt of transfers before and after migration

	Before migration (last 12 months in 1991 or 1997)			Last 12 months		
Financial transfers						
	No	Yes	% yes/ total	No	Yes	% yes/ total
Parents & parents in law	46	5	9.80%	70	15	17.65%
Children	10	0	0.00%	30	4	11.76%
Siblings	130	33	20.25%	170	45	20.93%
Relatives	99	9	8.33%	110	14	11.29%
Friends	26	1	3.70%	84	20	19.23%
<i>Total</i>	<i>311</i>	<i>48</i>	<i>359</i>	<i>464</i>	<i>98</i>	<i>562</i>
% no(yes)/ total	87%	13%	100%	83%	17%	100%
Good transfers						
	No	Yes	% yes/ total	No	Yes	% yes/ total
Parents & parents in law	37	15	28.85%	52	33	38.82%
Children	7	3	30.00%	20	14	41.18%
Siblings	117	49	29.52%	150	61	28.91%
Relatives	92	17	15.60%	104	20	16.13%
Friends	17	8	32.00%	79	25	24.04%
<i>Total</i>	<i>270</i>	<i>92</i>	<i>362</i>	<i>405</i>	<i>153</i>	<i>558</i>
Service transfers						
	No	Yes	% yes/ total	No	Yes	% yes/ total
Parents & parents in law	33	20	37.74%	54	30	35.71%
Children	4	6	60.00%	21	13	38.24%
Siblings	98	66	40.24%	156	58	27.10%
Relatives	86	23	21.10%	109	15	12.10%
Friends	17	10	37.04%	69	35	33.65%
<i>Total</i>	<i>238</i>	<i>125</i>	<i>363</i>	<i>409</i>	<i>151</i>	<i>560</i>

Annex 2. Codified results from the qualitative interviews

Question E.6 What kinds of contact do you have?

<i>Approximate response</i>	<i>Number of observations</i>
More frequent	8
Less frequent	6

Question H4.1 How did the move to Tirana change your relations with other people (including family

<i>Approximate response</i>	<i>Number of observations</i>
Feel closer	7
Feel same	13
More distant	6
Family moved as well (physically closer)	10

<i>Approximate response</i>	<i>Number of observations</i>
(Interact) more with friends	5
Same	4
Less	6

Question H4.4 Can you describe the kind of support you receive from others? How is this different to the past, before you moved?

<i>Approximate response</i>	<i>Number of observations</i>
Receive more support	6
Receive same support	5
Receive less support	5

<i>Approximate response</i>	<i>Number of observations</i>
More financial support	3
Same financial support	0
Less financial support	2

<i>Approximate response</i>	<i>Number of observations</i>
More goods	0
Same goods	1
Less goods	6

<i>Approximate response</i>	<i>Number of observations</i>
More services	0
Same services	1
Less services	4

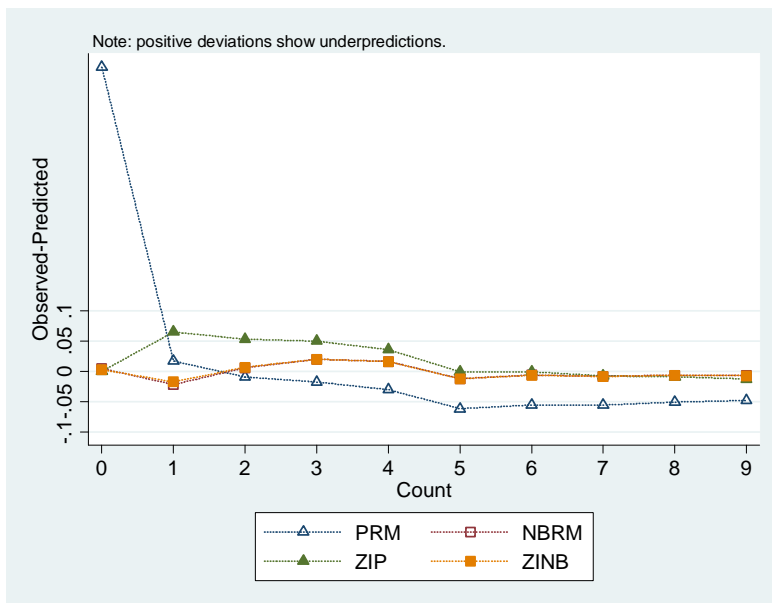
Annex 3. Measures of fit between different count models

Table 6 Sum of predicted and actual mean count of the tested models for frequencies of all transfers¹⁴

	Actual mean count	Predicted mean count	Difference	Pearson
PRM	0.788	0.597	0.852	8959.342
NBRM	0.788	0.804	0.109	41.762
ZIP	0.788	0.614	0.234	4409.25
ZINB	0.788	0.801	0.105	41.056

Note: PRM stands for Poisson regression, NBRM stands for Negative Binomial regression, ZIP stands for Zero-Inflated Poisson regression and ZINB stands for Zero-Inflated Negative Binomial regression.

Figure 3. Residuals of the tested model for frequencies of all transfers



Note: PRM stands for Poisson regression, NBRM stands for Negative Binomial regression ZIP stands for Zero-Inflated Poisson regression, and ZINB stands for Zero-Inflated Negative Binomial regression.

¹⁴ Tests for other types of transfers (i.e. financial, goods, and services) are available on request from the authors.

Annex 4. Alternative specifications

Table 7 Results from NBRM including income: Frequency of receiving transfers

	<i>Financial transfers</i>		<i>Good transfers</i>		<i>Service transfers</i>	
	Coef.	st. error	Coef.	st. error	Coef.	st. error
<i>Main regression</i>						
Transfer after migration	0.97***	0.33	-1.28***	0.26	-1.04***	0.28
Relative parent	-0.05	0.62	1.35**	0.55	-1.08*	0.6
Relative child	-0.39	0.87	1.80***	0.67	0.48	0.68
Relative sibling	0.24	0.42	0.86**	0.38	-0.79*	0.42
Relative other	-0.32	0.47	0.05	0.39	-1.87***	0.45
Age hhh (now/ before migration)	-0.03**	0.01	-0.03**	0.01	-0.01	0.01
Gender hh head	1.30**	0.64	-0.97	0.64	-0.35	0.81
Education years hhh	-0.04	0.06	0.07**	0.03	0.08*	0.05
Income per capita- in logs	-0.08	0.17	-0.32*	0.17	-0.02	0.17
Hhh's religion Muslim	1.04**	0.52	0.78*	0.43	0.32	0.47
Hhh's origin Central	-0.64	0.54	0.17	0.44	1.00**	0.49
Hhh's origin North-Central	-0.24	0.61	-0.03	0.54	0.62	0.58
Hhh's origin Mountain	-0.7	0.57	-0.84*	0.5	0.36	0.52
Hh extended family (now/ before migration)	0.31	0.29	-0.52*	0.27	-0.69**	0.28
Number of children hh (now/ before migration)	-0.13	0.16	-0.07	0.13	0.36***	0.14
Hh moved before 1997	-0.07*	0.04	0.08***	0.03	-0.01	0.03
Age relative/ friend (now/ before migration)	0.02	0.01	0.00	0.01	-0.01	0.01
Gender relative/ friend	-1.29***	0.3	-0.18	0.26	0.39	0.27
Education years relative/ friend	0.07	0.05	0.02	0.04	-0.09**	0.04
Hh & relative/ friend same religion	-0.61	0.6	-0.03	0.54	-0.33	0.65
Hh & relative/ friend live in same district (now/ before migration)	1.18***	0.33	0.20	0.29	1.15***	0.29
Constant	-1.35	2.47	3.75	2.33	3.16	2.29
Ln alpha	2.16***	0.13	2.12***	0.09	2.30***	0.08
Number of observations	843		843		838	
Log pseudo likelihood	-602		-1073		-1539	
P- value Chi2	0.00		0.00		0.00	
Pseudo R2	0.0624		0.0356		0.0208	

Note: Frequency of transfers refers to the number of times the transfer has been received in the past 12 months/ before migration

“Transfer after migration” is a dummy variable that is one for the observations for the period after migration

Income is current income per capita, logged.

“Transfer after migration” is a dummy variable that is one for the observations for the period after migration

Base for relatives (friends), religion (other religions), household origin (Coast)

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8 Results from NBRM and ZINB: Frequency of receiving all combined transfers

	<i>NBRM</i>		<i>ZINB</i>	
	Coef.	st. error	Coef.	st. error
<i>Main regression</i>				
Transfer after migration	-0.71***	0.2	-1.03***	0.22
Relative parent	-0.22	0.42	-0.01	0.41
Relative child	0.70	0.48	0.93**	0.46
Relative sibling	-0.36	0.3	-0.42	0.28
Relative other	-1.23***	0.31	-0.89***	0.34
Age hhh (now/ before migration)	-0.01	0.01	-0.02*	0.01
Education years hhh	0.18	0.51	0.39	0.5
Hh income/ per capita, in logs	0.09***	0.03	0.09***	0.03
Hhh's religion Muslim	0.53	0.33	0.45	0.32
Hhh's origin Central	0.68*	0.35	0.88***	0.33
Hhh's origin North-Central	0.43	0.41	0.56	0.39
Hhh's origin Mountain	0.02	0.36	0.16	0.34
Hh extended family (now/ before migration)	-0.46**	0.20	-0.18	0.20
Number of children hh (now/ before migration)	0.21**	0.10	0.25**	0.10
Hh moved before 1997	0	0.02	0.01	0.02
Age relative/ friend (now/ before migration)	-0.01	0.01	-0.02**	0.01
Gender relative/ friend	0.06	0.19	-0.05	0.19
Education years relative/ friend	-0.06**	0.03	-0.05*	0.03
Hh & relative/ friend same religion	-0.25	0.45	-0.19	0.42
Hh & relative/ friend live in same district (now/ before migration)	0.88***	0.21	0.48**	0.23
Constant	2.21**	1.03	2.55**	1.00
<i>inflate</i>				
Transfer after migration			-4.12***	1.47
Relative parent			1.18	2.01
Relative child			0.40	2.63
Relative sibling			-1.10	1.35
Relative other			2.55	1.82
Age hhh (now/ before migration)			0.00	0.03
Education years hhh			-0.07	0.09
Hh extended family (now/ before migration)			2.62***	0.8
Number of children hh (now/ before migration)			0.28	0.32
Hh moved before 1997			-0.06	0.08
Age relative/ friend (now/ before migration)			-0.06**	0.03
Gender relative/ friend			-0.48	0.65
Education years relative/ friend			0.07	0.15
Hh & relative/ friend same religion			0.49	0.99
Hh & relative/ friend live in same district (now/ before migration)			-4.00***	1.46
Constant			1.94	2.7
Number of observations	860		860	
Number of zero observations			455 (53%)	
Log pseudo likelihood	-2074		-2039	
LR Chi2	86.79		86.06	
P-value Chi2	0.00		0.00	
McFadden's R2	0.020		0.037	

Note: Frequency of transfers refers to the number of times the transfer has been received in the past 12 months/ before migration
 Base for relatives (friends), , religion (other religions), household origin (coast)

significant at 10%; ** significant at 5%; *** significant at 1%

Table 9. Results from NBRM: Frequency of giving transfers

	<i>Financial transfers</i>		<i>Good transfers</i>		<i>Service transfers</i>	
	Coef.	st. error	Coef.	st. error	Coef.	st. error
<i>Main regression</i>						
Transfer after migration	0.82**	0.33	-0.97***	0.23	-0.98***	0.29
Relative parent	1.71***	0.58	1.16**	0.45	0.87	0.57
Relative child	0.57	0.71	2.08***	0.56	0.26	0.65
Relative sibling	0.42	0.41	0.89***	0.32	-0.24	0.4
Relative other	-0.56	0.43	0.17	0.34	-1.83***	0.45
Age hhh (now/ before migration)	0.01	0.01	-0.02	0.01	-0.01	0.01
Gender hh head	-0.86	0.9	-1.35**	0.66	0.6	0.76
Education years hhh	0.04	0.05	0.07*	0.04	0.05	0.05
Hhh's religion Muslim	1.52***	0.52	1.20***	0.39	0.29	0.5
Hhh's origin Central	0.17	0.52	-0.65	0.41	0.34	0.49
Hhh's origin North-Central	0.39	0.61	-0.93*	0.48	0.37	0.58
Hhh's origin Mountain	-0.41	0.54	-1.36***	0.43	0.15	0.49
Hh extended family (now/ before migration)	0.17	0.32	-0.65***	0.24	-0.58*	0.3
Number of children hh (now/ before migration)	0.2	0.13	0.02	0.10	0.08	0.13
Years since migration	0.05	0.04	0.08***	0.02	0.10***	0.03
Age relative/ friend (now/ before migration)	-0.01	0.01	0.00	0.01	-0.02*	0.01
Gender relative/ friend	-0.89***	0.28	0.01	0.22	-0.09	0.26
Education years relative/ friend	0.01	0.05	-0.00	0.03	-0.00	0.04
Hh & relative/ friend same religion	-1	0.66	-0.05	0.50	-0.29	0.66
Hh & relative/ friend live in same district (now/ before migration)	0.25	0.31	0.71***	0.25	0.88***	0.28
Constant	-1.58	1.72	0.64	1.37	1.07	1.5
Ln alpha	2.28***	0.10	1.89***	0.08	2.36***	0.07
Number of observations	880		868		867	
Log pseudo likelihood	-847		-1351		-1567	
P- value Chi ²	0.00		0.00		0.00	
Pseudo R ²	0.033		0.0327		0.0323	
LR Chibar ²	2867.73		6789.35		6017.65	
P-value Chibar ²	0.00		0.00		0.00	

Note: Frequency of transfers refers to the number of times the transfer has given in the past 12 months/ before migration
 “Transfer after migration” is a dummy variable that is one for the observations for the period after migration

Base for relatives (friends), religion (other religions), household origin (Coast)

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 10 Results from NBRM: Frequency of receiving before or after migration

	Financial transfers			Good transfers			Service transfers			All transfers combined		
	Before migration	After migration	Difference of coeff. (after - before)	Before migration	After migration	Difference of coeff. (after - before)	Before migration	After migration	Difference of coeff. (after - before)	Before migration	After migration	Difference of coeff. (after - before)
<i>NBRM regression</i>												
Relative Parent	2.67	1.41	-1.26	2.02	0.94	-1.08	1.02	-1.23	-2.25**	1.26	-0.17	-1.43
Relative Child	-15.15	-0.6	14.55***	0.16	2.75	2.59**	1.25	1.13	-0.12	1.24	1.23	-0.01
Relative Sibling	3.29	0.52	-2.77***	1.15	0.25	-0.9	0.96	-0.94	-1.9***	1.06	-0.51	-1.57***
Relative Other (Other control variables included)*	2.32 (+)	-1.11 (+)	-3.43***	-0.45 (+)	-0.2 (+)	0.25	-0.56 (+)	-2.13 (+)	-1.57**	-0.41 (+)	-1.44 (+)	-1.03
Constant	-1.03	-8.41	-7.38**	-1.44	0.34	1.78	3.37	1.3	-2.07	2.91	0.92	-1.99
Ln alpha	1.73***	1.92***		2.28***	1.72***		2.21***	2.36***		1.86***	1.52***	
Number of observations	340	542		345	535		346	531		356	524	
Log-likelihood	--167	-416		-484	-610		-731	-820		-860	-1188	
P-value Chi2	0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000	
Pseudo R2	0.1490	0.0863		0.0352	0.0726		0.0184	0.0316		0.0208	0.0351	

Note: Frequency of transfers refers to the number of times the transfer has been received in the past 12 months/ before migration.

All other control variables included are the same as in Table 4 (“Transfer after migration” does not apply here).

* significant at 10%; ** significant at 5%; *** significant at 1%

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