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Transfer Behaviour in Migrant Sending Communities

Tanika Chakraborty*, Bakhrom Mirkasimov⁺, Susan Steiner⁺⁺

Abstract:

We study how international migration changes the private transfers made between households in the migrant sending communities of developing countries. A priori, it is indeterminate whether migration and remittances strengthen or weaken the degree of private transfers in these communities. From a policy perspective, public income redistribution programmes would have an important role to play if migration reduced the extent of private transfers. Using household survey data from Kyrgyzstan, we find that households with migrant members (as well as households receiving remittances) are more likely than households without migrants (without remittances) to provide monetary transfers to others and to receive non-monetary (i.e. unpaid labour) transfers from others. This suggests that migrant households, through their access to remittance income, insure their social networks against shocks and/or redistribute income to poorer households in the community and receive labour transfers in return. In sum, this implies that migration is unlikely to lead to a weakening of private transfers. Our findings further indicate that distinguishing between the nature of transfers, monetary and non-monetary, is important in order to correctly identify the reciprocity of transfers.

Keywords: Private Transfers, Cash and Labour Exchange, Migration, Kyrgyzstan

JEL classification: D63, F22, O12, I30

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1. Introduction

Rural households in developing countries employ a wide range of strategies to deal with the harsh living conditions that many of them face. Two of these strategies are migration to economically more advantaged places and exchanging informal private transfers with the households in their social networks.¹ In this paper, we study the implications of international migration for private transfer behaviour in the migrant sending communities.

Sending a household member abroad is likely to decrease the household's income variability because income is obtained from various sources. This makes the household less dependent on transfers from other households within the community. If, therefore, migration reduced the extent of private transfers made within migrant sending communities, this could have serious consequences for those households without migrants abroad. Policy makers should be aware that private transfers may have to be substituted by public transfers. On the contrary, households that receive remittances from migrants might transfer more money to other households in the community in order to insure them (Morten 2010). If, then, migration increased the extent of private transfers made, this would mean that migration increased the welfare not only of migrant households but also of non-migrant households.² The design of migration policies should take this potential effect into account.

Despite the vast literature on migration on the one hand and private transfers on the other, only few study the connection between these two aspects. Gallego and Mendola (forthcoming) explore whether migration increases participation of the migrant sending households in formal and informal social networks in Mozambique. They show that households which receive remittances or have return migrants participate more in social networks. Morten (2010) investigates the role played by remittances in insuring migrant sending households and their networks in India. She finds that remittances respond to aggregate shocks to household networks and hence contribute to informal risk-sharing in the sending communities. In a more recent study, Morten (2012) acknowledges that both private risk-sharing transfers and migration are mechanisms for households to informally insure against shocks. She develops a dynamic model of risk-sharing with endogenous migration and finds that risk-sharing reduces migration and migration in turn reduces risk-sharing. We add to this literature in the following way. First, we investigate how migration changes the private transfer behaviour of the household members left behind, in contrast to Gallego and Mendola

¹ Private transfers function like means-tested income redistribution flowing from better off to worse off households. They also act like risk-sharing mechanisms with income flowing to households that experienced income shocks (Cox and Fafchamps 2008).

² Ratha et al. (2011) provide an excellent review of the literature on the welfare implications of migration.

(forthcoming) who analyse their participation in social networks. Second, our focus is not only on risk-sharing transfers – or, in other words, on transfers made in response to shocks – as in Morten (2010; 2012). The financial transfers that we observe in our data are transfers made either in times of shocks or otherwise.

Our third contribution to the literature is that we distinguish between monetary and non-monetary (i.e. unpaid labour) private transfers. It is possible that some households (potentially those that receive remittances) provide monetary transfers and other households (potentially those that do not have migrants abroad) return non-monetary help. If this was indeed the case, then a model which only considered monetary transfers would wrongly conclude that private transfers were unreciprocated. If, however, we took both monetary and non-monetary transfers into account, we would be able to identify reciprocal behaviour (Schechter and Yuskavage 2011).³ We thereby relate to studies on the motives for private transfers. These studies assert that understanding transfer motives is essential for policy makers since the different underlying motives have different implications for the impact of public transfer programmes (Schokkaert 2006; Cox and Fafchamps 2008). Specifically, the impact of such programmes is potentially offset by a reduction in private transfers, if these were made out of pure altruism. This is in contrast to transfers motivated by self-interest or reciprocity, which are not expected to be crowded out by public transfers. This literature largely ignores the possibility of labour transfers.⁴

In this paper, we study whether international migration weakens or strengthens the extent of private transfers within rural migrant sending communities in Kyrgyzstan. Specifically, we compare the transfer behaviour of households that have migrants abroad with that of households that do not have migrants abroad. Since the turn of the century, migration has been mostly economically driven with migrants from Kyrgyzstan seeking income earning opportunities in better-off countries, mainly Russia (Lukashova and Makenbaeva 2009). The migration corridor from Kyrgyzstan and the other Central Asian republics to Russia is now considered to be the second largest in the world, following the route from Mexico to the United States (World Bank 2010). It is unclear how such massive outmigration changes the system of private transfers and mutual help that is common in Central Asia. Informal social

³ In a lab experiment, Charness and Genicot (2009) find evidence of lower transfers in groups with higher ex ante within-group inequality. The experiment is restricted to the possibility of monetary transfers alone. It could be that if group members were allowed to reciprocate the monetary transfers made by richer group members with non-monetary transfers, transfers would go up with higher inequality.

⁴ Exceptions are studies on intergenerational transfers, such as Cox (1987) and Cox and Rank (1992). They find that labour transfers are an important mechanism for the younger generation to exchange for monetary transfers from the older generation.

networks based on kinship and neighbourhood played a large role for obtaining access to information and goods in pre-Soviet times as well as during the Soviet period, and they are still important today in Kyrgyzstan (Coudouel et al. 1997; Kuehnast and Dudwick 2002). Anecdotal evidence from Howell (1996) finds that borrowing food and money from relatives and neighbours in times of economic stress is a common practice in southern Kyrgyzstan, the part of the country with the currently largest migration rate.

Empirical identification of the effect of migration on transfer behaviour within migrant sending communities can be confounded by simultaneity and unobserved heterogeneity. Simultaneity can be a problem if communities with more private transfers among households experience more out-migration. Unobserved heterogeneity is a serious concern because differences between migrant and non-migrant households might influence both migration and private transfer decisions (McKenzie et al. 2010). To address simultaneity concerns, we use longitudinal data from the Life in Kyrgyzstan (LIK) household survey and run a lagged regression model. To address unobserved heterogeneity, we match migrant and non-migrant households on a wide range of variables using propensity score matching methods.

Our findings show that migrant households are more likely than non-migrant households to provide monetary transfers to others. Furthermore, we find that migrant households are more likely than non-migrant households to receive labour assistance from others. We cannot clearly identify the direction of these flows in our data. However, the evidence suggests that migrant households, through their access to remittance income, insure their social networks against shocks and/or redistribute income to poorer households in the community and receive labour transfers in return.⁵ If so, our findings indicate that differentiating between monetary and labour transfers is important to draw correct inferences about the reciprocity of transfers.

The rest of this paper is organized as follows. We discuss alternative mechanisms for the relationship between migration and households' transfer behaviour in the next section. Section 3 discusses our empirical strategy. Section 4 introduces the LIK data. Section 5 presents the estimation results. We conduct a number of robustness checks in section 6 and elaborate on the reciprocity of transfers in section 7. We conclude the paper by summarizing our findings in section 8.

⁵ A competing possibility is that the migrant households are better able to purchase labour services. However, the wording of the questions in our survey questionnaire clearly indicates unpaid labour transfers.

2. Analytical Framework

We provide an overview of the mechanisms through which migration may influence household transfer behaviour. We distinguish between the effect of migration and the effect of remittances since having a migrant abroad does not necessarily have the same consequences for household welfare as receiving remittances. Furthermore, households that have migrants abroad do not always receive remittances, and households that receive remittances do not always receive them from close family members but possibly from extended family members or non-relatives.

Migration may strengthen the extent of monetary transfers in migrant sending communities if there is a co-insurance scheme between the migrant and the household left behind (Stark and Lucas 1988) and if other community members provide part of the insurance that flows to the migrant (*mechanism 1*). Migration may weaken the extent of monetary transfers, however, because a high rate of migration at the community level decreases commitment in mutual transfer arrangements. Migration of community members decreases the credibility of future reciprocity, and reciprocity is necessary to sustain non-enforceable transfer arrangements (Ligon et al. 2002).⁶ Households may choose not to provide monetary transfers to others, who they think are likely to migrate because reciprocity would then be less possible in the future. Households may also reduce transfers to those with current migrants, if they think that the members left behind are less likely to reciprocate (*mechanism 2*). The same logic applies to non-monetary transfers; households may not provide labour to other households within their community if these already have migrants abroad or are expected to send household members abroad in the future (*mechanism 3*). Yet, it is also reasonable to expect more labour transfers to households that have migrants abroad because usually young male adults migrate while the elderly, women, and children are left behind (*mechanism 4*). For example, grandparents who stay with their grandchildren are likely to use more outside labour to help with house repairs or accompany grandchildren to school when their adult children are absent.

We turn to remittances. Remittances may increase the extent of monetary transfers because they provide access to income that is uncorrelated with income generated within the community. Remittance-receiving households may thus be better able to provide transfers to

⁶ Ligon, Thomas and Worrall (2002) assume that informal insurance arrangements are sustained by means of penalties for breach of contract. These penalties include peer group pressure or being brought before a village council with the threat of future exclusion from insurance at the community level.

their networks and insure them against aggregate shocks (Morten 2010) (*mechanism 5*).⁷ This argument builds on Foster and Rosenzweig (2001) who study the effect of different degrees of altruism and income variance between transfer partners on the size of transfers, using panel data from rural South Asia. They show that risk-sharing is achieved with a high degree of altruism and a low level of income correlation between transfer partners. Some risk-sharing even takes place in the absence of altruism. Alternatively, remittances may be positively related to monetary transfers because they may provide more stable income to the remittance-receiving household making it a low risk member in risk-sharing arrangements (Gallego and Mendola forthcoming) (*mechanism 6*). If private transfers are made to redistribute income, rather than to share risk, more monetary transfers may be expected if the better off partner in the income redistribution network is the one who receives the remittances (*mechanism 7*). In contrast, households may reduce their monetary transfers for income redistribution if the remittance receiver is the previously worse off partner in the network (*mechanism 8*).

Remittances may decrease monetary transfers in the migrant sending community because they make the outside option of autarky more attractive for remittance-receiving households; risk-sharing is likely to fall whenever the value of autarky increases relative to the value of being in the contract (Albarran and Attanasio 2003). Remittance-receiving households can use remittances to insure against shocks and do not need to engage in mutual transfer arrangements within the community (Morten 2010) (*mechanism 9*). Remittances may allow receiving households to exchange money for labour (Schechter and Yuskavage 2011). Specifically, households that receive remittances may transfer money to other households and receive labour in times of need. This seems particularly likely when the adult members of the household migrate (*mechanism 10*).

In sum, migration can have a positive or negative impact on household private transfers, and the relationship between remittances and private transfers is equally indeterminate. While we cannot identify the mechanisms of how migration affects transfers clearly in our empirical analysis, given the nature of our data, we interpret our findings in light of these theoretical considerations.

⁷ Remittances respond to income shocks of the receiving household and so have an insurance motive (Lucas and Stark 1985; Rosenzweig 1988; Fafchamps and Lund 2003; Yang and Choi 2007). Giesbert, Steiner and Bendig (2011) show that households, which receive remittances, are less likely to have formal insurance - which also speaks for an insurance function of remittances. What has not been studied much is whether remittances sent for insurance are shared with the social network.

3. Empirical strategy

Our aim is to understand whether migration and remittances help or hinder the degree of cooperation in the form of private transfers between households in the absence of formal credit markets. We investigate the extent to which migrant households differ from non-migrant households in their transfer behaviour using the following specification:

$$Y_{ij} = \alpha + \beta_1 M_{ij} + \beta_2 X_{ij} + \beta_3 D_j + \varepsilon_{ij} \quad (1)$$

where Y_{ij} is an indicator of whether transfers are provided (received) by household i residing in community j . We estimate separate models for monetary and non-monetary transfers and separate models for the provision and receipt of transfers.⁸ Equation (1) is thus estimated for four alternative dependent variables. In our first step, we define M_{ij} as a dummy variable indicating whether household i in community j has a migrant member or not. A household has a migrant member if an adult member has been working abroad for more than a month in the last 12 months. In our second step, we define M_{ij} as a dummy variable indicating whether a household receives remittances or not. A household is a remittance-receiving household if it has received any money from abroad during the last 12 months. The person who sends these remittances may or may not be a member of this household. We control for other household level variables, X_{ij} , that may generate differential transfer behaviour between migrant and non-migrant households or remittance and non-remittance households.

X_{ij} includes socio-demographic variables, namely age, gender, marital status, education, and ethnicity of the household head. We also control for household size and the ownership of wealth. The wealth index is constructed using principal components analysis based on ownership of household assets such as land, a car, a computer, a washing machine, and the number of livestock. It is possible that involvement in social networks drives both the migration decision and transfer behaviour. To address this concern, we control for membership in a number of social groups (such as professional unions, credit and savings groups, neighbourhood committees, and sports groups).

The community is the potential network of a household. We define the community as the local community (referred to as *aiyl okrug*), which is the lowest administrative level in Kyrgyzstan and consists of four villages on average. According to the 2009 Census, an average local community has a population of 367 households. We control for community

⁸ If households both give and receive transfers, they appear with the outcome variable equal to 1 both in the giving and the receiving regressions. See section 4 for details on the extent of this overlap.

fixed effects, D_j , which allows us to compare the behaviour of migrant and non-migrant households, or remittance and non-remittance households, within each community.

β_l is the coefficient of interest to us. If β_l is positive, migrant households provide (receive) more private transfers than non-migrant households. If β_l is negative, migrant households provide (receive) less private transfers than non-migrant households. The same applies to remittance-receiving versus non-remittance-receiving households.

4. Data and Descriptive Statistics

The data we use in our empirical analysis come from the Life in Kyrgyzstan (LIK) survey. This is a panel survey conducted annually between 2010 and 2012 by the German Institute for Economic Research (DIW Berlin) in collaboration with Humboldt-University of Berlin, the Centre for Social and Economic Research (CASE-Kyrgyzstan) and the American University of Central Asia (Brück et al. 2013). The LIK includes data from all seven Kyrgyz provinces (oblasts) and the cities of Bishkek and Osh. Data are collected at the community, household, and individual levels of the sampled households. At the time of our data analysis, the first two waves (2010-2011) of the LIK were finalised. We mainly use data from the second wave because this provides more information on private transfers than the data from the first wave. In the second wave, 2,863 households in 120 urban and rural communities and 8,066 adult individuals within these households were interviewed. This is in comparison to 3,000 households in 2010. Out of the 137 households that dropped out between 2010 and 2011, around 7 percent had at least one migrant household member in 2010. The total population in the 2011 sample households (including children) is 13,693.

The interviewed households were asked whether any of their regular members had been living abroad for more than one month (excluding business trips, vacations, and visits) during the last 12 months.⁹ Out of the 2,863 households, 485 reported to have one or more migrants, and 712 migrants were reported in total. This translates into 5 percent of the total sample being migrants. Based on the total resident population of 5,362,816 people counted in the 2009 Census, this means that there were 268,141 international migrants in 2011. The range of estimates from other sources for the number of migrants is from 200,000 to more than one million migrants (Ablezova et al. 2009; Lukashova and Makenbaeva 2009; Marat 2009; International Crisis Group 2010). Our estimate is at the lower bound of these. It is,

⁹ We observe that less than 2 percent of the sample population were internal migrants. This appears to be a low number given that some people consider internal migration to be at least as important as international migration (Ablezova et al. 2009). It could be that, when people move internally, they often take their families with them. In that case, we would not observe them as migrants in our survey.

however, close to the estimate from the 2009 Census, which was 190,000 migrants. This does not mean that the larger estimates of up to one million migrants are invalid. Surveys such as ours and the Census are usually unable to identify migrants who moved abroad with their families or moved a long time ago and are no longer regular members of a resident household. The number of 268,141 migrants should be interpreted as an estimate of the number of temporary labour migrants.

Table 1 provides information on the characteristics of the observed migrants.¹⁰ The average age of a migrant is 29 years. Two thirds of the migrants are male and almost half are married. Three quarters of the migrants are of Kyrgyz ethnicity, and the majority of them come from the South (Osh city, Osh, Jalalabad, and Batken oblasts) of the country.¹¹ Ninety percent of the migrants have a secondary education degree or higher. They usually go to Russia and work in either construction or trade and repair. They send money home frequently, almost once every two months. The average amount of remittances was 54,000 Kyrgyz Soms (equivalent to approx. US\$ 1,200) per year as of 2011.

Table 1 about here

From the total sample of 2,863 households, we drop 1,168 urban households¹² and 41 households that have missing information on our key variables. This leaves us with 1,654 households. Of these, 342 (or, 21 percent) had a migrant abroad in the 12 months prior to the 2011 survey. Of these migrant households, 70 percent received remittances. In turn, 80 percent of the households that received remittances had household members that were abroad. These are very high shares, which imply that the effects of migration are not easily distinguishable from the effects of remittances. In the estimation, we compare the transfer behaviour of a) households that have a migrant abroad with households that do not have a migrant abroad (342 vs. 1,312 households), and b) households that receive remittances with households that do not receive remittances (298 vs. 1,356 households). Given that these

¹⁰ About 7 percent of the migrants are the head of the household. For these households, we re-define the head to be the second oldest person in the household (if the head was the oldest, which is most often the case) in order to compute the household head's characteristics to be used as a control variable in the estimations.

¹¹ See the Appendix for a choropleth map of Kyrgyzstan.

¹² We drop urban households because we do not expect any association between migration/remittances and households' transfer behavior for them. This is because of the following two reasons. First, credit and insurance markets are typically more developed in urban areas, and urban households therefore depend less on private transfers (to be used for risk-sharing) than rural households. In addition, communities in urban areas are characterised by less repeated interactions and more information asymmetries compared with rural locations, which makes the exchange of private transfers more difficult (Cox and Jimenez 1998; Albarran and Attanasio 2003). Second, most of the migrants in Kyrgyzstan stem from rural areas. An effect on transfer behaviour is unlikely to show up in the data because of the few observations of urban migrants. To be sure, we ran the regression of equation (1) for urban households. There is indeed no difference in the transfer behaviour of migrant and non-migrant households as well as of remittance and non-remittance households.

categories overlap to a large extent, we do not expect the results to deviate much from each other.

The following questions about transfer behaviour are asked in the individual questionnaire of the 2011 LIK:

- *To how many people did you give any financial help during the last 12 months?*
- *From how many people did you receive any financial help during the last 12 months?*
- *To how many people did you give any non-financial help (e.g. repairing house, preparing celebrations, homework help) during the last 12 months?*
- *From how many people did you receive any non-financial help (e.g. repairing house, preparing celebrations, homework help) during the last 12 months?*

We compute four alternative household-level dummy variables (our dependent variables in the below estimations) from these four questions; the dummy variables indicate whether or not any household member provided transfers to others or received transfers from others.¹³

We do not use the information at the individual level because we assume that private transfers are made between households, not between individuals. This means that even if an individual provides physical help to someone else, it is a household-level decision to do so.¹⁴ The first two variables (*hh_give_finhelp* and *hh_rec_finhelp*) take the value of 1 if any member of a particular household reported to have made or received a monetary transfer in the last year, and 0 otherwise. The other two variables (*hh_give_nonfinhelp* and *hh_rec_nonfinhelp*) take the value of 1 if any member of a particular household reported to have made or received a non-monetary transfer in the last year, and 0 otherwise. Through the use of examples (repairing the house, preparing celebrations, and help with homework) in the questions referring to non-monetary transfers, we ensure that people do not report paid labour. In

¹³ The LIK contains some information about the partners in these transfer arrangements. Individuals were asked to what group their transfer partners mainly belonged. Partners were mostly relatives (between 60 and 73 percent for the four transfer categories). Other relevant groups are neighbours and friends, with neighbours being more important in the case of non-monetary transfers. This is in line with previous research, which found that family and kinship networks are most important to households' transfer behaviour and that geographic proximity matters (Fafchamps and Lund 2003; De Weerd and Dercon 2006; Fafchamps and Gubert 2007; Munshi and Rosenzweig 2009; Mazzocco 2012).

¹⁴ We do not use the absolute number of transfers given or received as an outcome variable because of the following concerns. First, there is the danger of double counting, as two or more individuals within the same household might report the same transfer. Second, when we compare the maximum number of transfers reported in 2010 with that reported in 2011, we find a fourfold increase. Such a questionable increase is not observed when we investigate whether or not a household gave or received at all. Finally, in both rounds, around half the households do not make transfers. This should be estimated by a zero-inflated Poisson or negative binomial model in which consistency critically depends on the correct specification of the underlying distribution (Staub and Winkelmann forthcoming).

Kyrgyzstan, the listed activities are typically conducted by relatives, friends and neighbours without payment.

Out of the total number of rural households, about half provided monetary transfers to others, and half provided non-monetary transfers to others (Table 2). Forty percent of the households received monetary transfers, and 45 percent received non-monetary transfers.¹⁵ Households are not necessarily either pure givers or pure receivers. Of all those households that give or receive monetary transfers, 28 percent both give and receive. Among those that give or receive non-monetary transfers, 40 percent both give and receive.¹⁶

Table 2 about here

In Table 3 (Panel A), we present descriptive statistics for the control variables, separately for migrant and non-migrant households; we test for differences in these characteristics in the two groups.^{17,18} Migrant households differ from non-migrant households on age and ethnicity of the household head as well as household size. Note that household size counts the resident members only. Migrant households may be larger than non-migrant households either because only very large households send migrants abroad or because household members left behind by migrants join other households. The second option seems likely in the Central Asian context where the wife of a migrant is expected to co-reside with her parents-in-law when her husband is abroad.

Table 3 about here

5. Estimation results

The results of the estimation of equation (1) for migrant vs. non-migrant households as well as remittance vs. non-remittance households are shown in Table 4. Migrant households are 13 percentage points more likely than non-migrant households to provide monetary transfers. In addition, migrant households are 13 percentage points more likely than non-migrant

¹⁵ Cox, Jimenez and Jordan (1998) studied private transfers in Kyrgyzstan in the early 1990s. They find that only 12 percent of all surveyed households were net recipients and 9 percent net givers. However, their reference period is only 30 days, much shorter than ours.

¹⁶ Figure A1 sheds some light on the difference between migrant and non-migrant households in terms of transfers made and received. The shares of migrant and non-migrant households are significantly different for all four transfer variables. Figure A2 illustrates differences in transfer behaviour between remittance and non-remittance households. Remittance and non-remittance households differ significantly on receiving monetary transfers and providing non-monetary transfers.

¹⁷ In Table A1 in the Appendix, we define all variables that we use in the estimations and present summary statistics.

¹⁸ Comparing the means of the control variables for remittance and non-remittance households shows a very similar pattern. See Table A2 in the Appendix.

households to receive non-monetary transfers. However, migrant households do not differ from non-migrant households in terms of receiving monetary help or giving non-monetary help. We repeat the analysis with an indicator of whether a household receives remittances. Households that receive remittances are 10 percentage points more likely than their non-receiving counterparts to make monetary transfers to others. However, there is no significant difference between remittance and non-remittance households in terms of receiving non-monetary help, which was observed in the migrant specification.

Table 4 about here

What do these results imply in terms of the mechanisms outlined in section 2? If we assume that migrant households behaved like non-migrant households before migration, we can conclude that migration and remittances increase the extent of monetary transfers and non-monetary transfers made within the community. We observe more monetary transfers made by migrant (remittance) households compared with non-migrant (non-remittance) households, which could mean that migrant (remittance) households insure their social networks against shocks (*mechanism 5*) or that they redistribute income to poorer households in the community (*mechanism 7*). In terms of non-monetary transfers, we find that migrant households are more likely to receive labour help from other households which seems to indicate that migrant households require more labour help in the absence of co-residing adult members (*mechanism 4*).¹⁹ The fact that we do not observe this for the case of remittance households is, in principle, plausible because, according to our definition of remittance receiver, these households do not necessarily have own household members abroad from whom they receive remittances. However, given that, in our data, 80 percent of the remittance-receiving households actually do have household members abroad makes the finding puzzling. Yet, the standard errors indicate that the association is just not statistically significant (z-value of 1.54).

6. Robustness Checks

One concern with the above analysis is the possibility of simultaneity. Some communities might experience more out-migration in response to stronger links (i.e. transfers) between households, biasing the estimates upwards. To ameliorate such concerns, we exploit the panel

¹⁹ Ablezova et al. (2009) provide evidence for elderly people living alone or with grandchildren in many Kyrgyz villages. In-depth interviews with the elderly show that migration of their adult children is a serious challenge for them.

structure of our data and run a lagged model where the migration decision is taken ahead of the observed transfers of a household. Specifically, we estimate the effect of migration status of a household in 2010 on transfer behaviour in 2011. Similarly, we also estimate the effect of remittances received in 2010 on transfer behaviour in 2011. Table 5 reports the results from these lagged regressions. The effect of migration and remittances on providing monetary transfers remains similar. However, the effect of migration on receiving non-monetary transfers is now imprecisely estimated. This is plausible because households that had a migrant abroad 12-24 months ago are unlikely to require labour help in the last 12 months, i.e. after the migrant had returned.

Table 5 about here

While this lagged model reduces concerns of simultaneity, the estimates may be biased due to unobserved differences between migrant and non-migrant households. This is a cause of worry for us since the migrant and non-migrant households vary significantly across several observed socio-demographic dimensions, as shown in Panel A of Table 3. We address this concern by matching the migrant and non-migrant households (as well as the remittance and non-remittance households) using propensity score matching.²⁰ We then provide estimates of the effect of migration and remittances on private transfers using the matched sample.

The covariates used in the matching include the same variables as in the above estimations as well as a number of additional household characteristics that are likely to predict migration status. These are the household head's assessment of own risk aversion, whether or not the head is engaged in agriculture, whether or not the head still lives in the same oblast where he or she was born, and the ratio of dependents in total household size. We include residence in a specific province as an additional predictor. We assume that after controlling for these characteristics, migrant and non-migrant, as well as remittance and non-remittance, households are comparable. In other words, we assume that unobserved

²⁰ To address unobserved heterogeneity, we also estimated a household fixed effects model using the longitudinal structure of the data. We are restricted to using only "giving transfers" since "receiving" information is not available in the 2010 wave. The estimates are imprecise but confirm our findings in general - migrant households give more monetary help than non-migrant households. However, we do not report these results for two reasons. First, one year is too short a time period for significant changes in transfer behaviour of a household to take place. Second, and more importantly, migration status changes for few households between 2010 and 2011 implying that the fixed effect estimates are based on very little variation. Results are available upon request from the authors.

differences between migrant and non-migrant (as well as remittance and non-remittance) households are to a large extent reflected by the differences in these observed characteristics.

We define our treated group as households with migrants (remittances) in the last 12 months and the control group as non-migrant (non-remittance) households. Using the kernel matching function, we construct propensity scores to match the control group to the treatment group.²¹ The kernel function takes the weighted averages of the observations in the control group as the counterfactual outcome for each observation in the treatment group. Panel B of Table 3 reports the mean household characteristics for the migrant and the non-migrant households in the matched sample. In contrast to the unmatched sample in Panel A, the migrant and non-migrant households do not vary significantly across any observed dimension in the matched sample. The same picture emerges when comparing remittance with non-remittance households (Table A2 in the Appendix).²²

The regression estimates based on the matched sample are reported in Table 6. Migrant households are 14 percentage points more likely than non-migrant households to give monetary help and 16 percentage points more likely to receive labour help. Using an indicator for remittances received instead of migrant status provides similar results. Households receiving remittances are 14 percentage points more likely to provide monetary help and 10 percentage points more likely to receive labour help. The latter result, which was just insignificant in the unmatched sample, is now clearly statistically significant. Overall, the matching results indicate that the results in our baseline specification in Table 4 are biased downwards by a few percentage points. One possibility for this bias is that households characterized by a higher risk-loving attitude are more likely to have migrants abroad (and, hence, to receive remittances) and less likely to informally insure themselves against shocks. If much of the transfer behaviour is driven by risk-sharing motives, the households loving to take risk are less likely to engage in transfers.

Table 6 about here

Finally, we check for the possibility that our results are driven by a simple wealth effect. Migrant (remittance-receiving) households may transfer more monetary help than households without migrants (not receiving remittances) because they are wealthier and not because their income comes from uncorrelated sources. To address this concern, we run the regression of equation (1) without the wealth index. If it is the difference in wealth that drives

²¹ The results of the probit model are reported in Table A3 in the Appendix.

²² Table A4 provides further evidence on the quality of matching.

our results, the marginal effect of the migration/remittance indicator should fall when the wealth index is controlled for. However, the marginal effects remain almost unchanged (compared to those reported in Table 4) after removing the wealth index variable. The results are reported in Table A5 in the Appendix.

7. Reciprocal Transfers

Overall, our findings show that migrant households (remittance households) are more likely than non-migrant households (non-remittance households) to provide monetary transfers to others and receive labour assistance from others. Reciprocity could be the underlying mechanism driving this result; migrant households, through their access to remittance income, give monetary help to non-migrant households who cannot afford to return monetary help but instead reciprocate by providing non-monetary help. Since many households in our data both give and receive transfers, we use this information to shed light on the underlying mechanism. Particularly, we explore whether households that give monetary help are the ones that receive non-monetary help and whether this effect is larger for migrant households compared to non-migrant households. We regress the receipt of non-monetary help on migrant status (remittance receipt), the provision of monetary help, an interaction term of these two variables (*givefinXmig* and *givefinXrem*) and all the control variables included in Table 4. Given that the interpretation of interaction terms in non-linear models is not as straight-forward as in linear models (Norton et al. 2004), we run this regression as an OLS model (reported here in Table 7) and also produce marginal effects as well as standard errors for a probit model (unreported) using the STATA command *inteff*. The results do not differ qualitatively.

We find that there is substantial reciprocity in transfers. Those households that give monetary help are more likely to receive labour assistance compared with those that do not give monetary help. This is even more so for remittance-receiving households. Those remittance-receiving households that provide monetary help are significantly more likely to receive labour assistance compared with households that do not receive remittances. Even though the interaction term is also positive for migrant households, it is not statistically significant. In the latter columns of Table 7, we also investigate reciprocity for the respectively same type of transfer. Again, there is significant reciprocity: Households that provide monetary help are more likely to receive monetary help, and households that provide labour assistance are more likely to receive labour assistance. However, there is no differential behaviour across migrant (remittance) and non-migrant (non-remittance) households here. We acknowledge that we cannot clearly identify the full extent of reciprocity

in our data, since we do not observe which particular households the transfers are going to and coming from. Nevertheless, we argue that the evidence provided here is suggestive of the fact that households, which receive remittances, provide money to their social networks and receive labour assistance in return.

Table 7 about here

8. Conclusion

Economists have long engaged in understanding the role of migration and inter-household private transfers for managing households' risk in developing countries where insurance and credit markets are typically weak. Little is known about the interaction of these two risk management strategies in the communities of migrants' origin. Given the massive out-migration from many developing countries, it is important to know the impact of migration on widely established private transfer systems. If private transfers are weakened when many people migrate, governments may have to compensate for their loss.

In this paper, we empirically assess the relationship between international migration and private transfers among households left behind in the migrant sending communities of rural Kyrgyzstan. Analysing household survey data, we find that migration is unlikely to lead to a weakening of private transfers. Migrant households are more likely than non-migrant households to provide monetary transfers to others and to receive non-monetary transfers from others. This could be an indication that migrant households insure non-migrant households against income shocks or redistribute income to them. If the labour transfers come from non-migrant households, which we cannot identify with our data, this could imply that households that are abundant in monetary resources provide monetary help to households that are labour abundant in return for labour help. Yet, it could also be that these are unrelated transfers going to and coming from different sets of households. We provide some suggestive evidence in support of the former channel. However, in order to correctly determine the direction and the motives of private transfers, future research and more detailed information on household transfer behaviour in migrant sending communities are needed.

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TABLE 1 - Characteristics of Migrants

Variables	All migrants
Age ^a	29.04 (9.51)
Male ^b	68.3
Married ^b	44.9
Kyrgyz ^b	71.1
Uzbek ^b	21.1
Russian ^b	1.7
Other ethnicity ^b	6.1
Basic education or below ^b	9.7
Secondary education ^b	76.8
University degree ^b	13.5
In Russia ^b	91.9
In Kazakhstan ^b	6
In another country ^b	2.1
Comes from the South of Kyrgyzstan ^b	84.7
Comes from rural area ^b	69.9
Works in construction sector ^b	40.2
Works in trade and repair ^b	23.1
Works in hotels and restaurants ^b	10.7
Works in another sector ^b	26
Frequency of remittances in the last year ^a	5.5 (3.24)
Amount of remittances ^{a,c} (in Kyrgyz Soms)	54,055 (51,370)
<i>N</i>	712

Source: Authors' illustration based on 2011 LIK survey data.

Note: Only migrants aged 15 and above are considered. Some of the characteristics are based on only migrants that are abroad at the time of the survey. The LIK does not collect data on the country of destination, the economic sector and the remittances sent from migrants that have returned.

^a Mean with standard deviation in parentheses.

^b Proportion of migrants.

^c 1 USD ≈ 45 KGS.

TABLE 2 – Prevalence of Private Transfers

	Monetary transfer	Non-monetary transfer
<i>How many households provided help? (%)</i>		
Yes, provided help	47.9	51.5
No, did not provide help	52.1	48.5
<i>How many households received help? (%)</i>		
Yes, received help	39.6	45.0
No, did not receive help	60.4	55.0

Source: Authors' illustration based on 2011 LIK survey data.

TABLE 3: Summary Statistics

	Panel A: Unmatched sample			Panel B: Matched sample		
	Non-migrant households (N = 1,312)	Migrant households (N = 342)	Difference	Non-migrant households (N = 1,312)	Migrant households (N = 337)	Difference
headage	51.5 (14.7)	53.5 (11.7)	-2.01 (-2.34)	53.7	53.7	0.00 (0.05)
headmale	0.767 (0.423)	0.757 (0.429)	0.010 (0.40)	0.769	0.768	0.001 (0.01)
headmarried	0.741 (0.438)	0.798 (0.402)	-0.057 (-2.19)	0.786	0.795	-0.009 (-0.31)
headkyrgyz	0.723 (0.448)	0.751 (0.433)	-0.028 (-1.04)	0.755	0.760	-0.005 (-0.13)
headuzbek	0.098 (0.297)	0.196 (0.397)	-0.098 (-5.06)	0.186	0.187	-0.001 (-0.05)
headrussian	0.063 (0.244)	0.009 (0.093)	0.054 (4.06)	0.011	0.009	0.002 (0.31)
headother	0.116 (0.320)	0.044 (0.205)	0.072 (3.95)	0.048	0.044	0.004 (0.19)
yrs_schooling	10.39 (2.68)	10.27 (2.60)	0.12 (0.74)	10.23	10.24	-0.01 (-0.05)
hhsiz	5.11 (2.10)	5.38 (2.12)	-0.27 (-2.16)	5.42	5.39	0.03 (0.21)
wealth_index	0.325 (0.829)	0.397 (0.679)	-0.072 (-1.48)	0.399	0.398	0.001 (0.03)
anygroupmem	0.082 (0.275)	0.091 (0.288)	-0.008 (-0.49)	0.086	0.086	0.00 (0.01)

Source: Authors' illustration based on 2011 LIK survey data.

Note: Mean with standard errors in parentheses. Difference with *t*-statistics in parentheses.

TABLE 4 - Association of Migration and Remittances with Private Transfers

Probit model, reported are marginal effects

Variables	Give monetary help		Receive monetary help		Give non-monetary help		Receive non-monetary help	
migrant_hh	0.1266*** (0.0380)	.	0.0219 (0.0426)	.	-0.0163 (0.0441)	.	0.1348** (0.0538)	.
remitt_hh	.	0.1043** (0.0405)	.	0.0382 (0.0443)	.	-0.0077 (0.0398)	.	0.0667 (0.0429)
headage	0.0031** (0.0014)	0.0030** (0.0014)	0.0011 (0.0012)	0.0010 (0.0012)	-0.0009 (0.0014)	-0.0009 (0.0014)	0.0039** (0.0015)	0.0038** (0.0015)
headmale	0.0882* (0.0520)	0.0820 (0.0524)	0.0634 (0.0500)	0.0657 (0.0501)	0.0453 (0.0674)	0.0465 (0.0670)	-0.0995 (0.0700)	-0.1063 (0.0686)
headmarried	0.0968** (0.0483)	0.1063** (0.0482)	-0.0407 (0.0507)	-0.0414 (0.0508)	0.0244 (0.0653)	0.0234 (0.0653)	0.1964*** (0.0634)	0.2038*** (0.0620)
headkyrgyz	0.0584 (0.0839)	0.0652 (0.0838)	0.0596 (0.0813)	0.0615 (0.0810)	0.0426 (0.1001)	0.0420 (0.0999)	0.0606 (0.1159)	0.0630 (0.1169)
headuzbek	0.0248 (0.1355)	0.0329 (0.1360)	0.0125 (0.1292)	0.0164 (0.1295)	0.0182 (0.1194)	0.0179 (0.1191)	-0.1257 (0.1310)	-0.1243 (0.1323)
headrussian	-0.0618 (0.1034)	-0.0583 (0.1058)	-0.0934 (0.0688)	-0.0914 (0.0694)	-0.0944 (0.0976)	-0.0945 (0.0975)	-0.2006 (0.1565)	-0.2007 (0.1582)
hhsize	0.0255*** (0.0095)	0.0256*** (0.0097)	0.0096 (0.0087)	0.0097 (0.0087)	0.0591*** (0.0102)	0.0590*** (0.0102)	0.0297*** (0.0099)	0.0303*** (0.0099)
yrs_schooling	0.0087 (0.0067)	0.0088 (0.0066)	-0.0052 (0.0073)	-0.0052 (0.0073)	0.0135* (0.0069)	0.0135* (0.0069)	0.0082 (0.0079)	0.0081 (0.0078)
anygroupmem	0.1994*** (0.0512)	0.1954*** (0.0504)	0.1424** (0.0630)	0.1419** (0.0626)	0.1199 (0.0842)	0.1203 (0.0845)	0.1039 (0.0839)	0.1022 (0.0861)
wealth_index	0.1018***	0.1027***	-0.0311	-0.0315	0.0313	0.0312	0.0045	0.0052

	(0.0241)	(0.0241)	(0.0214)	(0.0214)	(0.0292)	(0.0291)	(0.0249)	(0.0245)
<i>N</i>	1,607	1,607	1,585	1,585	1,375	1,375	1,341	1,341
<i>Pseudo-R</i> ²	0.246	0.244	0.298	0.298	0.350	0.350	0.343	0.340

Source: Authors' calculation based on 2011 LIK survey data.

Note: Constant and community fixed effects are included. Numbers in brackets are standard errors (adjusted for clustering).

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

TABLE 5 - Association of Lagged Migration and Remittances with Private Transfers

Probit model, reported are marginal effects

Variables	Give monetary help		Receive monetary help		Give non-monetary help		Receive non-monetary help	
migrant_hh (lag)	0.0858** (0.0416)	.	-0.0669 (0.0409)	.	-0.0098 (0.0472)	.	0.0484 (0.0573)	.
remitt_hh (lag)	.	0.1342*** (0.0451)	.	-0.0261 (0.0390)	.	-0.0206 (0.0492)	.	0.0603 (0.0511)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
<i>N</i>	1,607	1,607	1,585	1,585	1,375	1,375	1,341	1,341
<i>Pseudo-R</i> ²	0.243	0.246	0.299	0.298	0.350	0.350	0.339	0.339

Source: Authors' calculation based on 2010 and 2011 LIK survey data.

Note: Constant and community fixed effects are included. Numbers in brackets are standard errors (adjusted for clustering).

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

TABLE 6 - Association of Migration and Remittances with Private Transfers, Matched Sample

Probit model, reported are marginal effects

Variables	Give monetary help		Receive monetary help		Give non-monetary help		Receive non-monetary help	
migrant_hh	0.1439*** (0.0436)	.	0.0392 (0.0411)	.	-0.0355 (0.0444)	.	0.1592*** (0.0611)	.
remitt_hh	.	0.1368*** (0.0456)	.	0.0615 (0.0447)	.	-0.0124 (0.0427)	.	0.0994** (0.0484)
<i>Controls</i>	YES	YES	YES	YES	YES	YES	YES	YES
<i>N</i>	1,602	1,603	1,580	1,581	1,370	1,371	1,336	1,337
<i>Pseudo-R²</i>	0.265	0.254	0.292	0.301	0.374	0.381	0.387	0.395

Source: Authors' calculation based on 2011 LIK survey data.

Note: Constant and community fixed effects are included. Numbers in brackets are standard errors (adjusted for clustering).

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

TABLE 7 - Reciprocity of Private Transfers

OLS model, reported are coefficients

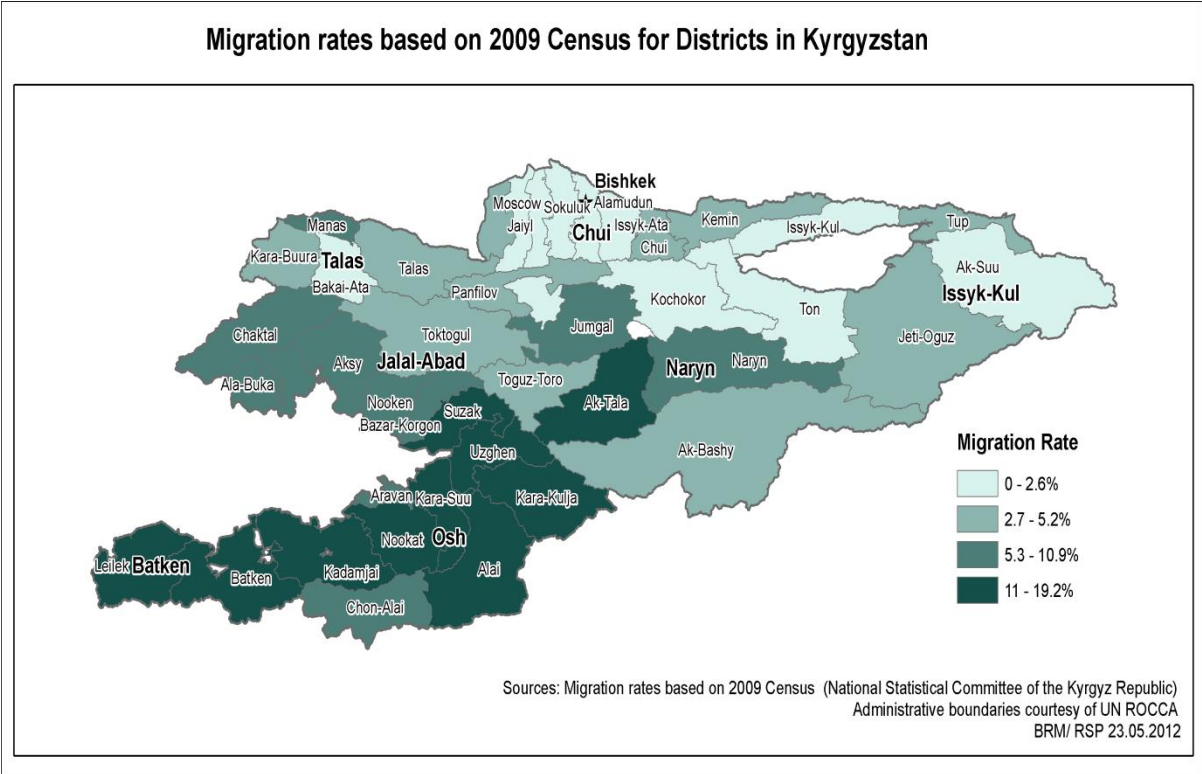
Variables	Dependent: Receive non-monetary help		Dependent: Receive monetary help		Dependent: Receive non-monetary help	
givefinXmig	0.0864 (0.0530)	.	0.0177 (0.0594)	.	.	.
givefinXrem	.	0.1323** (0.0552)	.	0.0347 (0.0659)	.	.
hh_give_finhelp	0.1046*** (0.0247)	0.0996*** (0.0242)	0.2078*** (0.0386)	0.2038*** (0.0381)	.	.
givenonfinXmig	.	.	.	.	0.0284 (0.0618)	.
givenonfinXrem	.	.	.	.	.	0.0350 (0.0553)
hh_give_nonfinhelp	.	.	.	.	0.4297*** (0.0537)	0.4289*** (0.0537)
migrant_hh	0.0036 (0.0342)	.	-0.0130 (0.0334)	.	0.0505 (0.0346)	.
remitt_hh	.	-0.0478 (0.0316)	.	-0.0047 (0.0400)	.	0.0162 (0.0319)
Controls	YES	YES	YES	YES	YES	YES
<i>N</i>	1,654	1,654	1,654	1,654	1,654	1,654
<i>R</i> ²	0.497	0.498	0.375	0.375	0.585	0.584

Source: Authors' calculation based on 2011 LIK survey data.

Note: Constant and community fixed effects are included. Numbers in brackets are standard errors (adjusted for clustering).

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

APPENDIX



Source: Authors' illustration.

TABLE A1 - Description of Variables

Variable	Definition	Mean	SD	Min.	Max.
migrant_hh	1=having had a migrant in the past 12 months, 0=otherwise	0.21	0.41	0	1
remitt_hh	1=having received remittances in the past 12 months, 0=otherwise	0.18	0.38	0	1
headage	Age of household head in years	51.9	14.1	18	99
headmale	1=household head is male, 0=otherwise	0.77	0.42	0	1
headmarried	1=household head is married, 0=otherwise	0.75	0.43	0	1
headkyrgyz	1=household head is Kyrgyz, 0=otherwise	0.73	0.44	0	1
headuzbek	1=household head is Uzbek, 0=otherwise	0.12	0.32	0	1
headrussian	1=household head is Russian, 0=otherwise	0.05	0.22	0	1
headothereth	1=household head is of another ethnicity, 0=otherwise	0.10	0.30	0	1
yrs_schooling	Years of schooling of household head in years	10.36	2.66	0	15
hsize	Household size (# of individuals currently in the HH)	5.16	2.10	1	15
wealth_index	Household's wealth index based on PCA (household assets)	0.34	0.80	-2.83	7.16
anygroupmem	1=household has any group member, 0=otherwise	0.08	0.28	0	1
depend	ratio of household members older than 69 or younger than 6 in total household size	0.17	0.20	0	1
headrisk	standardised value for self-assessed willingness to take risks	0.03	0.96	-1.62	1.83
headagri	1=household head engaged in agriculture, 0=otherwise	0.35	0.48	0	1
headmobility	1=household head born in the oblast of current residence, 0=otherwise	0.91	0.29	0	1
hh_give_finhelp	1=household provided monetary transfer, 0=otherwise	0.48	0.50	0	1
hh_rec_finhelp	1=household received monetary transfer, 0=otherwise	0.40	0.49	0	1
hh_give_nonfinhelp	1=household provided non-monetary transfer, 0=otherwise	0.52	0.50	0	1
hh_rec_nonfinhelp	1=household received non-monetary transfer, 0=otherwise	0.45	0.50	0	1

Source: Authors' illustration based on 2011 LIK survey data.

TABLE A2: Summary Statistics (Remittance vs. Non-Remittance Households)

	Panel A: Unmatched sample			Panel B: Matched sample		
	Non-remittance households (N = 1,356)	Remittance households (N = 298)	Difference	Non-remittance households (N = 1,356)	Remittance households (N = 294)	Difference
headage	51.4 (14.5)	54.3 (12.2)	-2.9 (-3.24)	54.8	54.5	0.30 (0.26)
headmale	0.775 (0.418)	0.721 (0.449)	0.054 (1.98)	0.740	0.731	0.11 (0.25)
headmarried	0.750 (0.433)	0.765 (0.425)	-0.015 (-0.55)	0.758	0.762	-0.004 (0.10)
headkyrgyz	0.723 (0.448)	0.758 (0.429)	-0.035 (-1.25)	0.761	0.762	-0.001 -0.04
headuzbek	0.108 (0.310)	0.164 (0.371)	-0.056 (-2.76)	0.160	0.160	0.00 (0.02)
headrussian	0.059 (0.236)	0.020 (0.141)	0.039 (2.74)	0.020	0.020	0.00 (0.03)
headother	0.111 (0.314)	0.057 (0.232)	0.054 (2.78)	0.059	0.058	0.001 (0.06)
yrs_schooling	10.39 (2.64)	10.26 (2.74)	0.13 (0.76)	10.21	10.22	-0.01 (0.05)
hhsiz	5.13 (2.08)	5.29 (2.22)	-0.16 (-1.21)	5.34	5.32	0.02 (0.10)
wealth_index	0.324 (0.822)	0.411 (0.693)	-0.087 (-1.71)	0.407	0.414	-0.007 (-0.12)
anygroupmem	0.080 (0.271)	0.104 (0.306)	-0.024 (-1.37)	0.090	0.099	-0.009 (0.34)

Source: Authors' illustration based on 2011 LIK survey data.

Note: Mean with standard errors in parentheses. Difference with *t*-statistics in parentheses.

TABLE A3 - Propensity Score Estimation: Probit Regression for Migration and Remittances

Variables	Dependent: Migration	Dependent: Remittances
headage	0.0129*** (0.00338)	0.0134*** (0.00372)
headmale	-0.597*** (0.176)	-0.609*** (0.160)
headmarried	0.590*** (0.197)	0.473*** (0.179)
headkyrgyz	0.104 (0.173)	-0.136 (0.176)
headuzbek	0.249 (0.221)	-0.138 (0.185)
headrussian	-0.234 (0.372)	-0.0215 (0.359)
hysize	0.00590 (0.0227)	-0.00905 (0.0224)
yrs_schooling	0.00700 (0.0174)	0.0146 (0.0176)
anygroupmem	0.108 (0.154)	0.279 (0.192)
wealth_index	0.0131 (0.0566)	0.0553 (0.0635)
headrisk	0.0948* (0.0559)	0.0339 (0.0557)
headagri	0.128 (0.116)	0.134 (0.107)
headmobility	0.0177 (0.213)	0.135 (0.220)
depend	-0.797*** (0.278)	-0.508** (0.243)
<i>N</i>	1,654	1,654
<i>Pseudo-R</i> ²	0.154	0.139

Source: Authors' calculation based on 2011 LIK survey data.

Note: Constant and province (oblast) fixed effects are included. Numbers in brackets are standard errors (adjusted for clustering).

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

TABLE A4 - Summary of Matching Quality

	Before matching	After matching
<i>Migration</i>		
Mean Standardized Bias	14.1	0.7
Median Standardized Bias	13.0	0.4
<i>Pseudo-R²</i>	0.068	0.001
<i>Remittances</i>		
Mean Standardized Bias	12.3	1.2
Median Standardized Bias	11.5	0.8
<i>Pseudo-R²</i>	0.048	0.001

Source: Authors' calculation based on 2011 LIK survey data.

TABLE A5 - Robustness Check: Independence of the Results of Wealth

Probit model, reported are marginal effects

Variables	Give monetary help		Receive monetary help		Give non-monetary help		Receive non-monetary help	
migrant_hh	0.1347*** (0.0375)	.	0.0191 (0.0426)	.	-0.0142 (0.0438)	.	0.1351** (0.0535)	.
remitt_hh	.	0.1117*** (0.0408)	.	0.0352 (0.0446)	.	-0.0050 (0.0402)	.	0.0672 (0.0428)
headage	0.0039*** (0.0013)	0.0039*** (0.0014)	0.0008 (0.0012)	0.0008 (0.0012)	-0.0006 (0.0014)	-0.0007 (0.0014)	0.0039*** (0.0015)	0.0038*** (0.0015)
headmale	0.0875* (0.0525)	0.0815 (0.0528)	0.0638 (0.0500)	0.0660 (0.0501)	0.0467 (0.0678)	0.0479 (0.0675)	-0.0992 (0.0699)	-0.1060 (0.0686)
headmarried	0.1054** (0.0498)	0.1150** (0.0496)	-0.0447 (0.0503)	-0.0456 (0.0505)	0.0271 (0.0658)	0.0261 (0.0658)	0.1967*** (0.0635)	0.2042*** (0.0621)
headkyrgyz	0.0437 (0.0803)	0.0516 (0.0806)	0.0615 (0.0812)	0.0633 (0.0810)	0.0351 (0.0990)	0.0347 (0.0986)	0.0602 (0.1159)	0.0625 (0.1169)
headuzbek	0.0037 (0.1348)	0.0130 (0.1357)	0.0165 (0.1290)	0.0204 (0.1294)	0.0095 (0.1201)	0.0095 (0.1197)	-0.1263 (0.1313)	-0.1250 (0.1326)
headrussian	-0.0578 (0.1002)	-0.0535 (0.1031)	-0.0970 (0.0690)	-0.0951 (0.0696)	-0.0965 (0.0967)	-0.0964 (0.0967)	-0.2003 (0.1564)	-0.2004 (0.1581)
hysize	0.0312*** (0.0091)	0.0312*** (0.0093)	0.0077 (0.0090)	0.0078 (0.0090)	0.0612*** (0.0101)	0.0611*** (0.0101)	0.0300*** (0.0101)	0.0307*** (0.0101)
yrs_schooling	0.0113* (0.0065)	0.0114* (0.0064)	-0.0060 (0.0074)	-0.0061 (0.0073)	0.0142** (0.0067)	0.0142** (0.0067)	0.0083 (0.0078)	0.0083 (0.0077)
anygroupmem	0.2085*** (0.0503)	0.2043*** (0.0494)	0.1402** (0.0636)	0.1398** (0.0634)	0.1244 (0.0842)	0.1247 (0.0846)	0.1044 (0.0840)	0.1028 (0.0863)

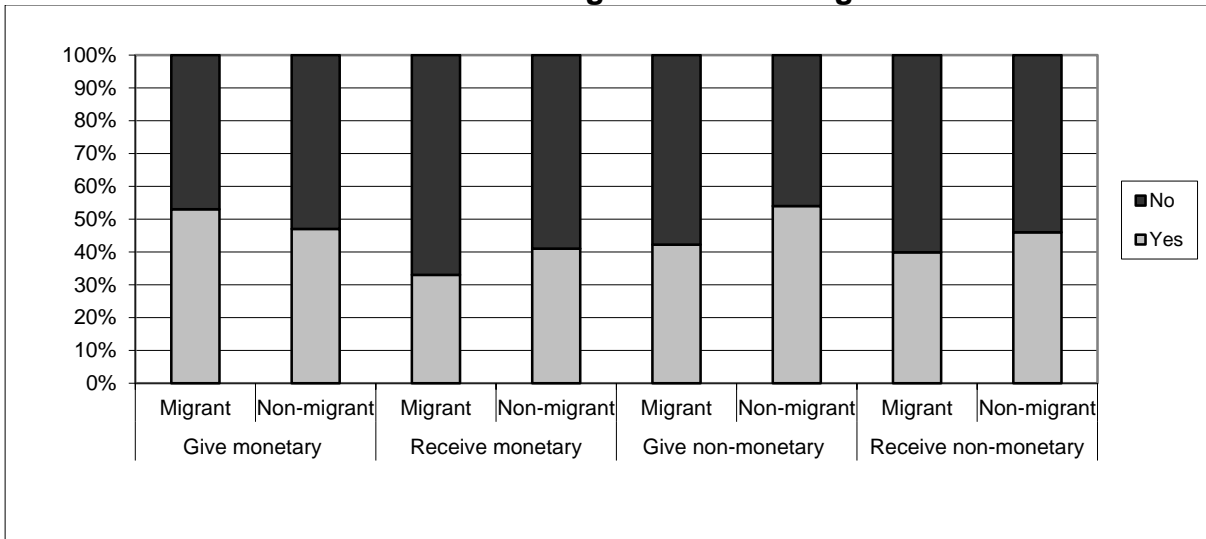
<i>N</i>	1,607	1,607	1,585	1,585	1,375	1,375	1,341	1,341
<i>Pseudo-R</i> ²	0.236	0.234	0.297	0.297	0.349	0.349	0.343	0.340

Source: Authors' calculation based on 2011 LIK survey data.

Note: Constant and community fixed effects are included. Numbers in brackets are standard errors (adjusted for clustering).

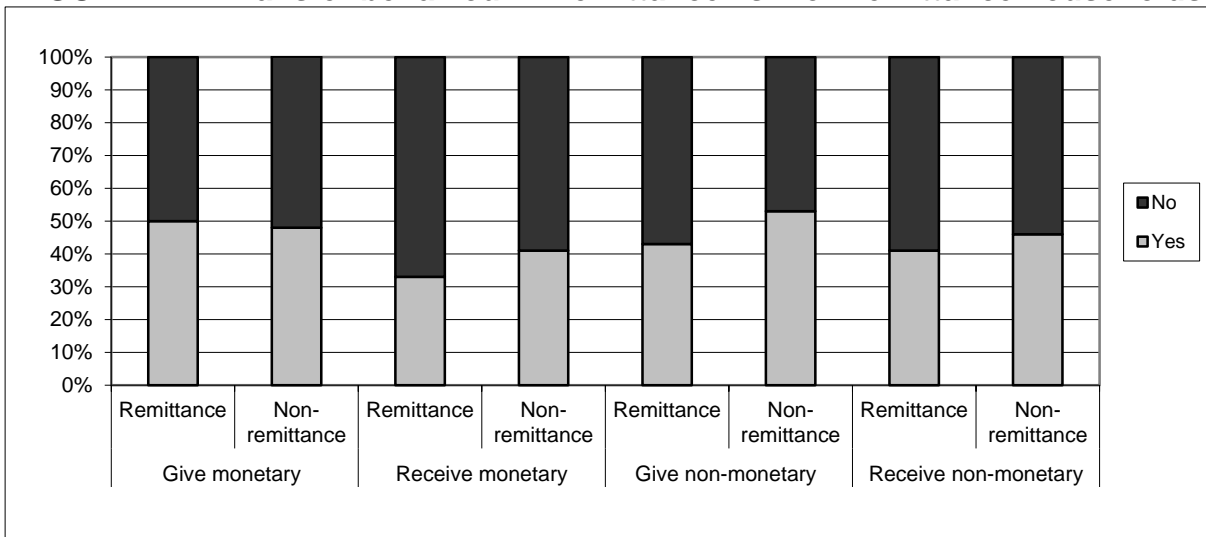
*** significant at 1%; ** significant at 5%; * significant at 10%.

FIGURE A1 – Transfer behaviour in migrant vs. non-migrant households



Source: Authors' illustration based on 2011 LIK survey data.

FIGURE A2 – Transfer behaviour in remittance vs. non-remittance households



Source: Authors' illustration based on 2011 LIK survey data.