Remittances as insurance for idiosyncratic and covariate shocks in Malawi: The importance of distance and relationship

Simon Davies

University of Bath, UK

July 2007

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Simon Davies, Department of Economics and International Development, University of Bath, Bath, BA2 7AY

t: + 44 1225 383 691
e: sd245@bath.ac.uk

Word Count: 6054 exclusive of abstract, bibliography, title page and tables
9954 all inclusive

REMITTANCES AS INSURANCE FOR IDIOSYNCRATIC AND COVARIATE SHOCKS IN MALAWI: THE IMPORTANCE OF DISTANCE AND RELATIONSHIP

Last Updated: 27/06/2007 12:15

Abstract
This paper uses Malawian panel data to show the importance of geography and family relationships when studying remittances. We do not test any hypothesis as such, but instead demonstrate the significance of the source of remittances in testing hypotheses. When remittances are viewed from an insurance perspective, geography matters. Covariate (community) shocks tend to be insured further from home than idiosyncratic ones. When viewed from a motivational perspective, family relationship and culture matter. Furthermore, gift exchange amongst unrelated households can be as important as remittance flows amongst members of the same family in insuring shocks. Inter-household remittances are closely linked to social networks, with business and religious groups being particularly important (perhaps due to trust). Remittance flows are often reciprocal – receiving households often being the main senders, emphasizing their insurance nature.

(131 words)

Keywords: Remittances; Insurance; Household Economics; Malawi; Africa
JEL Classification Codes: D190; D310; O180

1 Introduction

There has been an explosion in remittance flows since the early nineties with world wide flows to developing countries estimated to have doubled to US$65bn between 1991and 1999 (Gammeltoft, 2002). Ratha (2007) estimates that total international remittance flows reached US$206bn in 2006 making them similar in value to Foreign Direct Investment (FDI) and over double the value of Overseas Development Assistance (ODA). This increase has been reflected by a growing interest in remittance flows from policy makers and academics. There is now a wealth of literature studying the determinants of remittances; their impact; the motivations for remitting; remittances and migration; cost of remittances; internal and international remittances and other sub-topics. Such studies tend to assume that remittances are sent by family members who have migrated, either temporarily (such as the case of the husband who works away from home) or permanently (an educated child who emigrates from his or her home village to abroad or a city in search of formal employment).

Although non-technical, this paper introduces a number of novelties which we believe need to be considered in more formal papers on remittances. The first novelty is to show the importance of the distance between the sending and receiving households. This is important in developing countries such as Malawi where the economy is largely rural and incomes depend on agriculture[1]. Harvests depend upon weather patterns which exhibit decreasing correlation with distance thus insurance will be more effective the more distant are two households. Furthermore distance can impact on the moral hazard risk. For example an idiosyncratic shock of a household member being sick might be better insured within the village than further away since village members can witness the shock for themselves, whereas those living further away (abroad or in a large city for example) may be unable to ensure that their remittance is either require or used for the purpose for which it is intended. Our second novelty is to consider the relationship of the sender to the receiver. This has two key consequences: Firstly, many studies on remittances should to consider mutual gift exchange amongst unrelated neighbors and more distant relatives as well as those from close family members who have migrated. Secondly, the impact of remittances

depends upon motivations to remit, which are likely to differ depending upon the relationship of the sender to the receiver. For example, parents may receive remittances from a son for different reasons than those implied by remittances from village neighbors. It might be the case that the son remits to safeguard inheritance, while village remittances act as income pooling in order to reduce the risk from idiosyncratic shocks. Thus such a disaggregation is of academic interest to studies which test for motivations to remit, to those analyzing the extent to which remittances insure shocks; and to those attempting to understand household behavior in attempting to reduce consumption risk.

In a literature review, Lucas (2006) reports that numerous studies indicate that in sub-Saharan Africa migration and remittances are a family-strategy intended to mitigate risk. Azam and Gubert (2006) believe that "in most cases, the decision to migrate is a collective decision made by the extended family, or village, with a strategic view". Income sharing and remittances are thus an important part of the decision to migrate. The authors do not follow up on the idea that remitting is not only a family activity but also a village one.

In reality, remittances come from a variety of different sources, both geographically and with regards to the relationship between the sender and the receiver. Data from the Complementary Panel Survey (CPS) undertaken in Malawi between 2000 and 2002 record incidences of remittances from different sources. These data show that more households receive remittances from friends and neighbors living in the same village than they do from family members.

Azam and Gubert (2004; 2006) test for different motivations to remit and are unable to rule out either insurance, implicit loans or altruism. De la Brière et al (2002) find that there are elements of insurance and pure self-interest (safeguarding inheritance) in remittances. Van Dalen et al. (2005) note that "the inconclusive nature of empirical research is understandable. One cannot expect remittances to be driven by a single motive." This is clearly the case when we examine remittance flows that are not disaggregated by sender and receiver, but a greater level of disaggregation may help to assess motivations to remit in more detail.

Remittances are often a form of insurance undertaken as part of an intra-family strategy, but these flows also exist between families. An inter-household perspective is justified in some cases; for example where remittances are overwhelmingly sent from abroad by migrant workers (Mexico or El Salvador). Other examples include Clarke and Wallsten (2003), who find that remittances from abroad insured 25% of cost of damage caused by Hurricane Gilbert in Jamaica in 1988.

An inter-household perspective is also justified where sending and receiving households are matched, with information on both participants on both sides of the transaction (e.g. van Dalen et al., 2005). In many cases however ignoring the origin of the transfer both in geographical and relationship terms prevents answering key questions about the nature of these flows.

Knowing who has sent the remittance is important when testing motivations to remit. For example, custom dictates who inherits the wealth of a deceased person. If the data allow the user distinguish between different remitters, comparisons can be made between the remittance behavior of those from different tribes with different inheritance customs. Azam and Gubert (2006) find that where a village has a large number of emigrants, there is competition to support their families' *relative* income for reasons of familial pride. Here again, an understanding of the source of remittances is important if the extent of such behavior is to be gauged.

A knowledge of the geographical provenance of the transfer helps to distinguish insurance elements of transfers. Idiosyncratic shocks affecting only the household (the death of a key household member for example) may be better insured within the village, whilst covariate shocks affecting the whole village (floods or livestock diseases, for example) need to be insured further afield.

Mutual gift-giving is common in sub-Saharan Africa and social networks play an important role in these inter-household transfers. Our data show that belonging to a regional business club, religious group or social club increases the likelihood of both giving and receiving remittances. Furthermore, the insurance element of such cultural behavior has additional implications (supported by the finding in this paper):

wealthier households are more likely to receive remittance because they make safer insurers during bad times.

This paper is discursive in nature and aims to highlight the importance of greater information regarding the character of remittance flows. We take the view that transfers in the form of remittances or gifts have a large insurance component and react to shocks at household and village level. This is in line with a number of other studies. Pan (2007) finds that negative idiosyncratic shocks to household income in rural Ethiopia are insured by pooling risk through remittances, but that covariate shocks are not; Pan (2007) does not, however, consider the geographical source of the remittances. Harrower and Hoddinott (2005) examine the extent to which households in rural Mali insure against a series of idiosyncratic and covariate shocks. They find that gift-giving (cash remittances or gifts in-kind) are especially used by asset poor households to partially insure shocks. Unfortunately, they are unable to distinguish the source of the remittances. Rosenzweig and Stark (1989) use longitudinal southern Indian village data to find that most migrants are females who leave their village of origin to live with new spouses. Household intermarriage is, in part, a response to income risk. Since agriculture generates the largest part of income, such risk is dependant partly upon weather and is thus spatial in nature. Daughters tend to marry into a region whose weather patterns are as uncorrelated as possible (given the financial constraint implied by cost of travel) with her region of origin. Thus, in insurance, geography matters.

Viewing gifts or remittances as having a large insurance component is compatible with the view that other motivations also impact on remittances. For example, in order to safeguard inheritance a child may be expected to increase remittances when the household of origin suffers a shock. We briefly discuss household coping strategies following shocks and record several measures of correlation between transfers and shocks.

The following section discusses findings from previous work related to the nature of shocks in Malawi and the coping strategies used with a focus on remittances. Section three introduces the data and discusses the characteristics of remittance senders and receivers; section four analyses remittance flows and sections five and six use

correlations to assess associations between remittances of different sources (geographical and personal relationship to receiver) and household shocks in order to emphasize the insurance nature of the remittances. The final section concludes.

2 Remittances as Coping Strategy following Shocks

Households engage in a variety of coping strategies during seasons of scarcity including selling their casual labor and borrowing. In Malawi, as in other parts of sub-Saharan Africa, remittances play an important role in insuring/smoothing household consumption.

Transfers can be viewed as imperfect substitutes for credit, which is itself an important coping strategy during the "hungry season (Bokosi, 2001). The substitutability between credit and remittances is highlighted by Udry (1990), who finds that loan repayment conditions in northern Nigeria are a function of the relative shocks faced by the borrowing and lending households. Devereux et al. (2006) expand on this noting that different shocks impact households at different levels. That is, there exist idiosyncratic risks which largely impact only on the household which suffers (such as the death of a key household member), and different covariant shocks which may impact most other households in the village (floods) or region (drought).

Using data from the 2004 Malawian Integrated Household Survey, Devereux et al. (2006) show that over three quarters of Malawian households have faced severe shocks during the previous 5 years. Some of these shocks are idiosyncratic whilst others are covariate in nature, impacting on a larger number of people. Shocks impacting on different households need to be insured differently. So a (visible) idiosyncratic shock may be most easily insured through exchanging gifts with different community members. More widespread shocks such as droughts may require remittance flows from further afield. Table 1 shows households reporting being affected by different shocks in Malawi.

[Table 1 about here]

The link between migration, remittances and insurance is highlighted by the 2006 Malawian Migration Baseline Survey (MBS) which interviewed 9,546 respondents, of whom 736 were migrants. It looked at the link between migration and remittances

and found that remittances contribute an average of 6% to total household income with farming produce adding an additional 31%, casual labor contributed 27% and wage employment 18%.

27% of household only sent remittances, with the report assuming the beneficiary was always a worker away from home. 15% of household received remittances and 17% both sent and received remittances. The fact that nearly one fifth of households engaged in both sending and receiving remittances helps to show the importance of remittances as insurance devices with households both giving and receiving rather than simply redistributing income in and for itself. Furthermore, it seems unlikely that a quarter of households are supporting workers away from home, helping to reinforce the theory that a part of all transfers are being made between family units as well as within them.

The findings also indicate that male migrants are more likely to remit than female migrants with two thirds of males remitting against one third of females. This is likely to be a reflection of the reasons for migrating. Men are more likely than females to migrate for employment, keeping connections with their family at home, while females are more likely to migrate for marriage, hence severing home ties.

Although difficult to assess due to the fungibility of assets, the MBS asked respondents about the use of remittances and found the primary use to be food with water and medical bills also being important (see Table 2). These spending patterns are indicative of the insurance nature of remittances. Households receive transfers in order to help cope with shocks such as the need to pay urgent medical bills, or to ensure adequate food consumption during seasons of scarcity.

[Table 2 about here]

3 Givers and Takers: Descriptive Data

This paper uses the Malawian Complimentary Panel Survey (CPS) undertaken by the Centre for Social Research (CSR) in Malawi with technical assistance from the International Food Policy Research Institute (IFPRI) between January 2000 and July 2002. Four rounds of interviews were conducted with 758 households in round 1; 667

in round 2; 631 in round 3 and 499 in round 4. The panel is thus unbalanced with households being interviewed between one to four times, and in different combinations of rounds. For example, a household might have been interviewed during rounds 1, 2 and 4. There is no replacement, so information on major household characteristics such as the education of the household head (assumed to remain unchanged) was collected in the first round. Each round comprised of a household questionnaire and individual questionnaires, and data have been combined where appropriate. Supplementary questions were asked during certain rounds pertaining to membership of social networks; language spoken in the home and asset ownership. Since such information was not collected during the first round, there are missing variables for some households. This does not pose a problem for this paper, which is descriptive in nature. A more analytical study would have to deal with this missing information in a more technical manner.

Malawi is consistently ranked in the bottom fifteen of the world's poorest countries by the UNDP's Human Development Indicators. It is landlocked but has suffered no external conflict or serious internal conflict since independence in 1964. The adult literacy rate is around sixty-four percent (World Bank Development Indicators, 2007) and the country suffers severely from the HIV/AIDS epidemic with an estimated fifteen percent prevalence rate reducing current life expectancy from around fifty-five years to under forty (Conroy et al., 2006: p.64). The economy is largely rural and agricultural with around 85% of the population living in rural areas and agriculture occupying nearly 90% of the workforce and contributing around 35% of GDP (World Bank Development Indicators, 2007).

Malawi's history of migration combined with its lack of formal financial infrastructure means that remittances have developed as an important means of minimizing risk and are thus an important source of both income and expenditure for households. This is the case for both intra-family and inter-household transfers. Our data indicate that remittances make up nearly 12.5% of household income, and around 9% of expenditure, for those who send them. Transfers from NGOs and from Malawi's significant overseas diaspora help to make up the difference in between remittance income and expenditure. Traditional gift exchange is an important part of rural life in Malawi, helping to smooth consumption and decrease risk faced with the

lack of accessible financial infrastructure. This makes Malawi an ideal setting to study remittance flows from an insurance perspective, and indeed, from many other perspectives.

Descriptive statistics reveal informative differences between households which remit and those which do not, and between household which receive remittances and those which do not. In particular, the data reveal that senders and receivers exhibit very similar characteristics different from the wider population.

One outstanding result is that remitters are more likely to receive remittances themselves, and receivers are more likely to remit than the total sample. 41% of receivers also remit against 32% of the total sample and 46% of senders also receiver against 36% of the total sample. Remittances are flowing in both directions suggesting that there is a strong insurance motive for these flows. It is unfortunate that sending and receiving households are not matched making it difficult to tell if two households engage regularly in mutual gift exchange.

Sending and receiving household heads tend to have better education (6.01 and 5.37 years respectively) than the average of 4.61 years. Furthermore senders and receivers are more likely to be better connected than other households. 32% of sending household heads and 57% of receiving household heads reported belonging to a local business group[2] compared with around 13% for households that neither send nor receive remittances. 52% of sending household heads and 57% of receiving household heads reported belonging to a religious group compared with 48% percent of the whole sample. Senders and receivers also tend to be slightly more involved in political groups (local parties) and social groups (such as sports or acting clubs or women's groups).

These results should not be surprising. It could be that these groups offer a secure environment within which gift exchange can be carried out. Membership of a religious organization might encourage trust for example. Furthermore, gift exchange within the context of a club might increase the social penalties associated with non-reciprocation, helping to increase security.

A further reason why households which participate in remittance flows tend to be better connected than other households may relate to social and economic standing. Members of business clubs may have higher or more secure income, and receive gifts from others because they are seen as good people to have in a social network in times of difficulty. Other desirable groups to have in ones social network are those with salaried jobs; senders and receivers are both more likely to have a household member with a salaried job. The causality in these examples is likely to go both ways. Those with better jobs or steadier income are more likely to be able to remit and would tend to be amongst the "best" people to have in a social network ensuring they also receive remittances.

It is notable that senders and receivers have significantly higher asset scores[3] and consumption levels than other households. In short, sending and receiving households are wealthier than the average.

Other noteworthy characteristics suggest that familial links are important. For example, female household heads are more likely to receive remittances (perhaps from husbands elsewhere) and less likely to send remittances than the average. Sending and receiving households are more likely than the average to have a head that has migrated from another district in Malawi. Receivers are less likely to be married than the average – perhaps because these consist partly of young people setting up in a city or urban centre who receive assistance from their parents.

Finally a few other characteristics are of interest. Households that send remittances tend to be younger than other groups, and nearly 3 ½ years younger than the sample average; those who sent remittances are much more likely to have accessed credit within the previous year (23% against a sample average of 15%); around fifteen percent of sending and receiving households are urban compared with nine percent of the whole sample.

4 Remittances Flows

This section presents an overview of the remittance flows in Malawi using both pooled data and by survey round. Here, we also expand on the idea that there is a

positive correlation between sending remittances and receiving them, emphasizing the importance of mutual exchange and the insurance nature of this flow of money.

4.1 Pooled

Of the 2555 observations from 758 households, 910 reported receiving remittances of on average nearly MK600 per month or around US$8.20 using the average exchange rate for the period during which the survey was undertaken[4]. This is a significant amount in a country where over 60% of the population live in poverty (Benson et al., 2002) and an average yearly per capita income in 2005 of around US$160 (WDI, 2006). Many households receive remittances from more than one relation and from different places. More incidences of remittances come from within the same village with these amounts being the smallest in value. Thus, remittances from close to home are the lowest in value but most frequent. Remittances from within the village are given by both neighbors and relatives. Indeed, neighbors remit more often than any other group with nearly a third of all receiving households reporting income from neighbors. Although the amounts tend to be less than half of the mean remittance value, inter-household remittances are an important source of income and insurance for many households.

Table 3 offers other interesting insights into transfer flows. Ignoring NGO transfers, remittances from spouses tend to be the highest in value, presumably because the spouse is working away from home and remitting money as part of an intra-household strategy. It is interesting to note that paternal relatives give almost double maternal ones on average but give less regularly. Further work needs to be undertaken to uncover the impact of matrilineal versus patrilineal social structures that exist within the different tribal groups of Malawi. These results are only indicative as in some rounds maternal and paternal relatives were not separated and classed together under "relation".

Remittances from abroad are the highest in value on average, but few households received these transfers[5]. Remittances from children make up a large proportion of the incidences of remittances, and are relatively high in value. These flows come with attached hypotheses for testing motivations to remit. Remittances from children to parents should not decline with distance if inheritance is the motivation and may

increase with distance if insurance is the motivation due to lower correlation between weather patterns and hence crop output risk (Rosenzweig and Stark, 1989). Remittances from parents might be either (a) part of an intra-family strategy; (b) helping a youngster setting up a new home; (c) altruistic help following a negative shock or (d) insurance payments.

[Table 3 about here]

4.2 Givers are Receivers: Some Correlations

Simple correlations between sending and receiving remittances offer further insights into the risk-sharing behavior of households. Table 4 shows a positive and significant correlation between giving and receiving remittances. Although positive, the correlation between the amount sent and the amount received is not significantly different from zero at conventional levels.

[Table 4 about here]

Further assessment can be made by tabulating correlations between sending remittances to and receiving them from different geographical areas and different relations. These results are summarized here, and presented in Appendix 2. Here, we focus on the results of correlations between dummies indicating whether or not a household sends and receives remittances rather than the correlations between the values. This is because, even under an insurance hypothesis, there is no reason to assume the values will be similar over a short period. Since however, values are of interest, these results are presented in Appendix 2 and are discussed here where they are of interest.

The correlations offer one outstanding result. There are positive and significant correlations between the dummies indicating receipt of and sending remittance to 3 out of the 5 areas studied. There is a positive association between sending remittances to people in the same village, district, and other districts and receiving remittance from these places. There is also a positive and significant correlation between the amount sent and received from the village. The lack of correlation between sending and receiving remittances overseas should not be surprising as these flows are more likely to be largely one-way.

There are positive (and significant) associations between sending remittances to and receiving them from one's parents, children, siblings, all relatives and neighbors. Many of these positive correlations are echoed by correlations between the amount of remittances sent and received. This is especially the case for the value of remittances sent to and received from children, all relatives and neighbors.

It should not be surprising that there is no correlation between giving and receiving from one's spouse as these flows tend to be dominated by a husband working away from home, and remitting money to support his family. Thus, these flows are only one-way.

Although only simple correlations, these results help to reinforce the hypothesis that households share income in order to minimize risk, and that the same households both give and receive remittances.

4.3 Rounds

The panel nature of the data allows us to plot changes over time. Table 5 shows a general increase in the value of remittances being sent over the 3 years of the Complimentary Panel Survey from just over MK100 per month in January 2000 to over MK330 in July 2002. The percentage of households receiving remittances fluctuates between 28% and over 60%.

With the exception of July 2001, the percentage of households sending remittances remains steady at around one third. The value of the average remittance expenditure however, varies considerably.

[Table 5 about here]

Figure 1 and Figure 2 below show remittance income and expenditure by survey round and source. More households are engaged in sending and receiving remittances within their own village. The general rule is then that fewer households are engaged in exchange of remittance as distance increases. The average amount sent and received however tends to be higher outside of the home villages.

Neighbors, siblings, children and parents engage in remittances on both the sending and receiving side, helping to highlight the importance of both inter-family and intra-household remittances.

[Figure 1 about here]

The general trend for sending remittances is relatively steady for all sources. The exception is the percentage of households remitting to neighbors.

[Figure 2 about here]

The large increase in round 4 may, at first glance, seem to represent some selection bias but, although this cannot be entirely discounted, another explanation is more likely. The final round was conducted in the aftermath of one of Malawi's worst harvests in recent times. Many parts of the country were hit by floods and others by droughts. This came on top of a reduction in government and donor assistance for subsistence farmers, who provide bulk of Malawi's food[6]. Production of the main staple food, maize, was down by around 37% compared with 2 years previously. Average maize prices in the six months to the survey were nearly 3 times the same period in the previous year. This was the second of 2 bad harvests for Malawi, and the situation was declared a "disaster" by the government, which sought outside help[7].

Such a desperate situation causes informal insurance networks to be used to a greater extent. This is the major factor in determining the increase in remittance flows. Table 6 divides salaried and non-salaried households by round. Households which have a member working in a salaried job (outside of the farming sector) are likely to be hit less hard than those which rely on farming for their survival.

It is noteworthy that the income before remittances of non-salaried households as a percentage of salaried households decreases from around one third to just over 15% in the aftermath of the poor harvest in 2002. Non-salaried households are likely to turn both to each other and to those with steadier streams of income for help and, unsurprisingly, a full two thirds of salaried households reported sending remittances during this time.

Interestingly, a greater proportion of all households (salaried or not) reported receiving remittances during this time and 62% of non-salaried households reported sending remittances. This could reflect both the insurance and altruistic natures of remittances. Anticipating even worse times ahead (June and July are months of relative maize abundance compared with later in the year), non-salaried households attempt to fully insure themselves with their salaried counterparts. Meanwhile, witnessing those in even more need than themselves around them, they also give to other poor households.

[Table 6 about here]

5 Responses to Idiosyncratic Shocks: Some More Correlations

This section discusses correlations between dummies and amounts indicating receipt of remittances from each source and various shocks. All correlations are based on pooled data so that a positive correlation between a shock and remittances from a particular source indicates a positive association between a shock suffered since the previous round and remittance income from the source specified. Correlations are presented in Appendix II with key points discussed below.

5.1 Receipt of Remittances

Overall there is a positive association between receiving remittances and having had a member leave the household and successfully find work. There is increased likelihood of receiving remittance from outside of the village (anywhere) but remittance flows from the village are negatively associated with this variable. The strong positive association between receiving remittances from one's spouse and having had a member leave to successfully find work suggests that it is usually men who leave to find work and then remit. There appears to be a crowding out effect as other relatives and village members cease to contribute. Interestingly gifts from NGOs are positively associated with having had a member leave the household to successfully find work as the household is now likely to be female-headed and thus deemed potentially vulnerable by NGOs.

There is a negative association between a household receiving remittances and a member leaving to get married. Perhaps gifts are (temporarily) redirected towards the newly weds to assist them in setting up home.

There is a positive association between receiving remittances and having had a sick child or female in the household. Neighbors and more distant relatives respond to children being sick in particular (it is difficult to see the causality being the other way around). Children tend to respond to an illness of an adult female (usually the mother) in the household.

There is a negative association between receiving remittances from relatives and having had a member leave to go and leave with a relative. There seems to be a certain degree of substitutability between financing a child's upbringing in another household and bringing them up personally.

5.2 Sending Remittances

Unsurprisingly there is a negative association between having suffered from most shocks and the amount of remittances sent, although not all are significant at the 10% level. For example, there is a negative link between having had a baby and the amount of remittances sent. There are however, some interesting exceptions to this rule.

Remittances expenditure is positively associated with having had a child leave to live with a relative. In particular more remittances are sent to certain groups – presumably those who take in the children – such as maternal relatives. This is consistent with the finding that income from remittances is negatively associated with a child leaving.

Interestingly, having any sick members is positively associated with remittance expenditure to several groups. The dummies indicate that, in the case of sick children, money is less likely to go to neighbors, but more likely to go to certain relatives. It could be that these remittances are part of an implicit payment for services received during the difficult period. This positive association may be linked to the positive association between illness and increased remittance income. Since the interview rounds are approximately a year apart there is ample time for a member to contract an illness, receive remittances to help pay for treatment, and then "repay" after having

recovered. This creates remittance flows in both directions, and helps to reinforce the hypothesis of a certain degree of substitutability between credit and remittances.

6 Covariate Shocks: Even More Correlations

Shocks which impact on an entire community are difficult to insure within that community. Thus, when a community is affected by a flood or drought, it should be anticipated that remittance receipts from within that community decrease.

Table 7 presents correlations between dummies indicating whether a region has been effected by a flood, a drought, or especially high maize prices relative to the rest of the country during the six months previous to the survey round, and dummies indicating whether or not a household received remittances from each of several sources. Information relating to prices and climates were obtained from the Famine Early Warning System Network "Food Security Reports" for Malawi and shocks are largely at a district level. Thus, these data are not village specific. Although not perfect, these data are used in the absence of anything more perfect, and give a reasonably accurate assessment of shocks affecting most, if not all, of the villages within the area.

As expected, there are negative correlations between the dummy indicating whether or not a village/district has suffered from a flood and remittances from this area. It is interesting to note that the negative correlation is significant only at district level, but that the degree of correlation approximately decreases by distance, turning positive for "Other Urban". It is expected that data indicating a greater degree of disaggregation of shocks would render more significant shocks at the lower, village, level.

"Drought" follows a similar pattern. A drought within a locality is difficult to insure within that locality, explaining the negative correlations between "Drought" and "Village" and "District" with the latter being significant at the 10% level. In this case, there is a positive and significant correlation between "Drought" and "Other Urban". Thus, if a household has suffered from a recent drought, it is more likely to receive remittances from a (distant) urban area.

"High Maize Price" indicates whether or not a district had higher maize prices than the rest of the country at the time of the survey. Here the impact is ambiguous as purchasing power of households without maize to sell is reduced while it is increased for those with excess maize. The positive correlation indicates that those with maize to sell, dominate.

Average and Current Maize Price are both continuous variables. These are highly correlated and follow the same pattern. As with "High Maize Price", there are positive correlations between the price and whether or not a household receives remittances from their village or district. This should not be surprising as high prices mean the many households with surpluses to sell will have more money to remit. Thus supply of potential remittances is increasing. In addition, households which need to purchase maize due to a shortfall will find themselves with lower purchasing power. This will increase the demand for remittances (either as an altruistic flow, or as repayment of an implicit loan, or as an insurance payment). It is also interesting to note the negative (and significant) correlation between maize prices and the urban dummy. Urban households are less likely to benefit from an increase in maize prices through selling produce, and will suffer the resulting increase in cost. Thus, this association is not surprising.

[Table 7 about here]

7 Conclusion

This paper has used Malawian data to emphasize the importance of considering the source of remittance income when evaluating the motivations for remitting and the impacts of this source of income. The aim of the paper has not been to test any hypothesis as such, but simply to demonstrate the importance of the source of remittance in testing hypotheses. The data indicate that an important part of remittance flows are made with the intention of reducing risk, and that remittances between different families are as important as those within families. Furthermore, covariate shocks impacting on whole communities are insured outside of that community acting, in the case of a shock, to decrease the remittances from that community but increase remittance flows from elsewhere.

Remitting sending and receiving households exhibit similar characteristics, and those that send remittances often receive them, and vice versa. Social networks including business clubs and religious organizations play a role in determining to whom one remits. Extended family can also be seen as a social network.

In order to assess the extent to which remittances respond to insurance following different shocks, more technical, panel data analysis can be used. Remittances from different geographical provenances can be expected to respond differently depending upon the shock suffered. Furthermore, different family members may respond to different shocks depending upon tribal customs. Other questions these data permit to answer relate to the extend to which income shocks are insured, and, in particular, whether family members respond to relative income shocks as well as absolute income shocks. This is in line with Azam and Gubert (2006) who find that migrated members of households sometimes see themselves in competition to maintain the living standards of their family in Senegal.

Although non-technical, this paper has shown the importance of the source of remittances, and lays the ground for more work to be undertaken in this area.

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[1] Agriculture contributes 35% to GDP and earns 90% of export earnings in Malawi (Simler, 1997). Smallholder farmers are the "breadbasket" of the economy. 84% of agricultural production comes from around 2 million smallholder households cultivating one hectare of land or less (Conroy et al., 2006: p.24; Mkandawire, 1999: p.44).

[2] Local business groups are primarily farmers' clubs, or talking shops for shop-keepers or maize traders.

[3] Assets used in the factor analysis include ownership of livestock, ownership of household furniture (e.g. tables, bed, chairs), household appliances and similar (e.g. radio, cooker, bicycle), and variables indicating quality of home (quality of walls, roofing, floor), access to electricity and water and number of hectares of land owned by the household. The asset index takes an average value of zero and follows a normal distribution.

[4] The exchange rate during the period during which the survey was undertaken averages around US$1 = MK73.2.

[5] Only 3% of all remittance incidences are from abroad.

[6] 84% of Malawi's agricultural production comes from around 2 million smallholder households cultivating one hectare of land or less (Conroy et al., 2006: p.24; Mkandawire, 1999: p.44).

[7] Information in this paragraph is collated from several Famine Early Warning System Network "Food Security Reports" available from www.fews.net. See in particular the report for mid-February to mid-March, 2002, released on 19th March, 2002.

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Tables and Figures

Table 1: Shocks faced by Malawian households (HH) over previous 5 years and nature of shocks

Type of shock	Yes	No
Large rise in price of food	77.0	23.0
Lower crop yields due to drought or floods	62.7	37.3
Illness or accident of household member	45.7	54.3
Death of other family member	40.6	59.4
Large fall in sales price for crops	38.0	62.0
Livestock died or were stolen	33.3	66.7
Crop disease or crop pests	23.8	76.2
Household business failure	21.9	78.1
Theft	19.3	80.7
Birth in the household	11.0	89.0
Dwelling damaged or destroyed	10.2	89.8
Break-up of the household	10.1	90.0
Loss of salaried employment or non-payment of salary	8.9	91.1
Death of working member of household	8.7	91.3
End of regular assistance, aid, or remittance	7.2	92.8
Death of household head	4.8	95.3
Other	1.4	98.6
Total	**23.8**	**76.2**

Type of shock	Who did the shock affect: (%)			
	Own HH only	Some other HHs too	Most HHs in comm-unity	All HHs in comm-unity
Large rise in price of food	3.2	9.1	41.4	46.3
Lower crop yields due to drought or floods	3.0	18.2	46.5	32.3
Rise in farm inputs prices	16.6	14.7	37.4	31.4
Crop disease or crop pests	7.9	35.1	37.1	19.9
Household business failed	80.0	10.3	4.7	5.1
Loss of salaried employment or non-payment of salary	73.2	19.0	5.2	2.6
End of regular assistance, aid, or remittances	67.6	19.1	10.8	2.5
Livestock died or were stolen	54.6	30.5	13.4	1.5
Illness or accident of household member	77.9	19.5	1.3	1.3
Theft	77.7	17.8	3.4	1.1
Death of working member of household	37.6	60.6	1.4	0.4
Dwelling damaged or destroyed	78.9	17.2	3.5	0.4
Death of household head	53.2	45.2	1.4	0.2
Break-up of the household	89.5	9.2	1.2	0.1
Birth in the household	93.8	5.7	0.5	0.0
Total	31.0	22.8	25.0	21.3

Source: Devereux et al. (2006)

Table 2: Uses of Remittances Cited by Respondents of 2006 Malawi Migration Baseline Survey

	Rural	Urban
Food	46.0%	75.0%
Water	25.6%	5.4%
Medicine	20.1%	13.4%

Source: Adapted from NSO (2006)

Table 3: Remittance Income by Source

	Obs	Mean	Std. Dev.	Min	Max
Geographical Provenance					
Same Village	476	194.35	542.25	0.2	7000
Same District	293	381.82	855.69	1	10000
Another District	207	1186.44	8409.10	3	120000
Another Urban Centre	54	684.44	1335.34	20	8000
Abroad	27	2057.33	3068.18	15	11000
Relation					
Parent	87	240.37	748.67	5	6490
Child	194	477.25	883.43	2	9600
Grandchild	31	217.47	497.34	5	2717
Sibling	209	544.79	1586.06	0.5	11000
Paternal Relative	54	225.86	428.99	3	2070
Maternal Relative	80	122.29	202.92	0.2	1200
Relation	103	271.98	477.94	1	2800
Neighbor	287	222.90	603.78	1	7000
Employee	5	178.00	85.26	30	250
NGO	12	10919.17	34423.72	20	120000
Spouse	19	1225.26	2502.29	5	11000
Other	51	802.39	1313.86	10	6004
Total Remittance Income	910	598.01	4129.66	0.2	120000

Source: Author's calculations using Complementary Panel Survey

Table 4: Correlations between Giving and Receiving Remittances

	Total Remittances Received	Remittance Receipt Dummy	Total Remittances Sent	Remittance Sent Dummy
Total Remittances Received	1			
Remittance Receipt Dummy	0.1155*	1		
Total Remittances Sent	0.0315	0.0211	1	
Remittance Sent Dummy	0.0499*	0.1434*	0.2424*	1

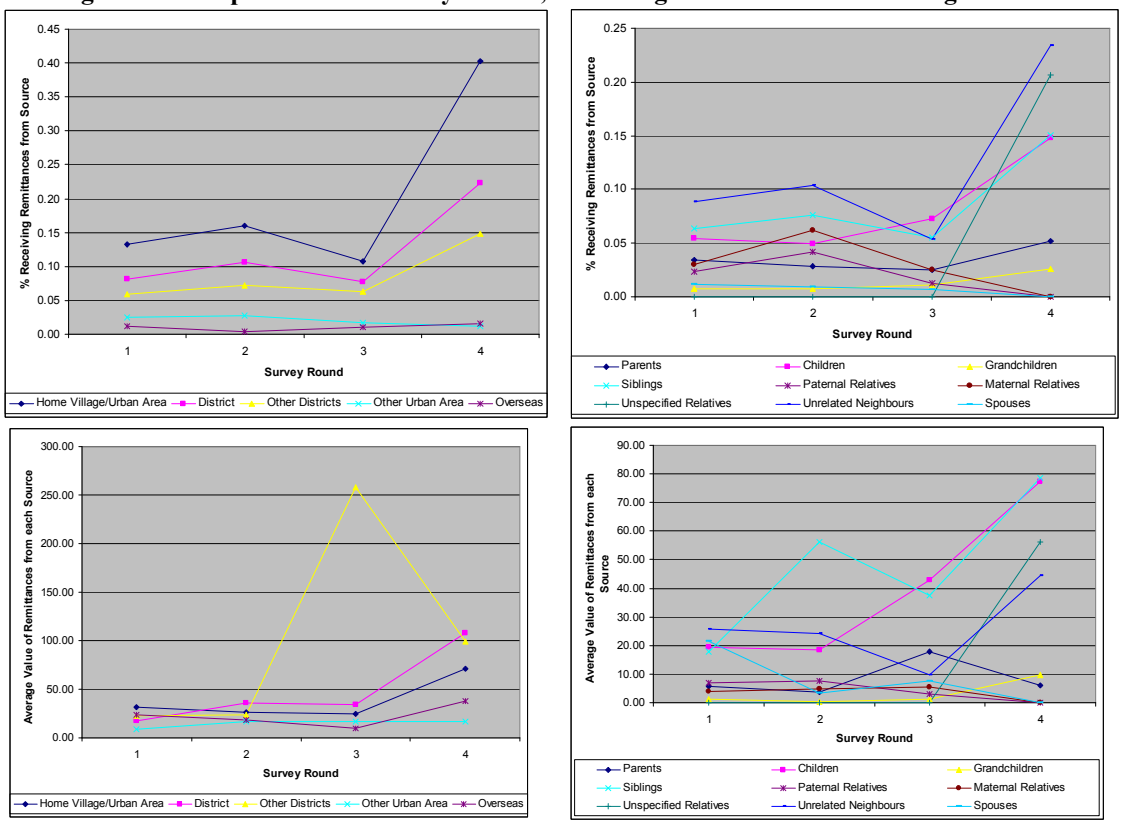
*Source: Author's calculations using Complementary Panel Survey; * indicates significance at the 10% level.*

Table 5: Percentage of Households Receiving Remittances and Average Remittance by Round

Interview Round	Jan-00	Nov-00	Jul-01	Jul-02
% Households Receiving Remittances	28.2%	32.7%	26.5%	62.3%
Average Remittance Income (MK)	105.5	120.2	343.0	335.9
% Households Sending Remittances	33.0%	33.4%	25.4%	34.9%
Average Remittance Expenditure (MK)	93.2	66.6	69.3	165.9

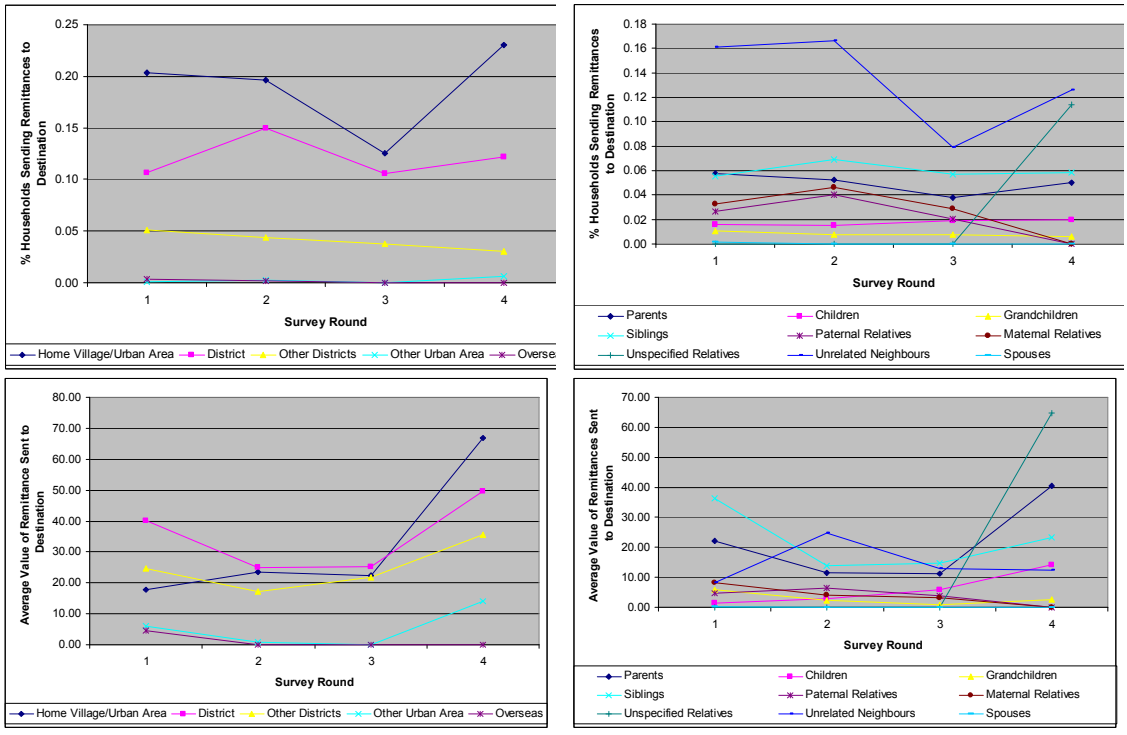
Source: Author's calculations using Complementary Panel Survey

Figure 1: Receipt of Remittance by Source, Percentage Households and Average Values



Source: Author's calculations using Complementary Panel Survey; Raw data and standard deviations in Table 13 to Table 16 in Appendix III.

Figure 2: Sending Remittance to Different Destinations, Percentage Households and Average Values



Source: Author's calculations using Complementary Panel Survey; Raw data and standard deviations in Table 13 to Table 16 in Appendix III.

Table 6: Differences between Households with a Salaried Member and without, by Round

	Jan-00		Nov-00		Jul-01		Jul-02	
	Salaried Households	Non-Salaried Households	Salaried Households	Non-Salaried Households	Salaried Households	Non-Salaried Households	Salaried Households*	Non-Salaried Households
Income Before Remittances	48922.72	15069.80	5765.37	1647.56	11181.28	3891.31	15974.92	2544.95
% Households Receiving Remittances	0.46	0.30	0.50	0.30	0.39	0.23	0.55	0.33
% Households Sending Remittances	0.35	0.27	0.37	0.32	0.29	0.26	0.66	0.62
Non-Sal as % Sal	**30.8%**		**28.6%**		**34.8%**		**15.9%**	

*Source: Author's calculations using Complementary Panel Survey; * one extreme outlier has been excluded.*

Table 7: Receipt of Remittances following Shocks Impacting on Community

	Flood	Drought	High Maize Price	Average Maize Price	Current Maize Price
Flood	1				
Drought	-0.0321	1			
High Maize Price	0.2133*	-0.0213	1		
Average Maize Price	-0.0838*	-0.0943*	0.1974*	1	
Current Maize Price	0.1290*	-0.0839*	0.2032*	0.7980*	1
Village	-0.0268	-0.0131	0.0753*	0.2612*	0.1765*
District	-0.0490*	-0.046*	0.0537*	0.1581*	0.1117*
Other District	-0.0201	0.0306	0.0125	0.1174*	0.0889*
Other Urban	0.0091	0.0462*	-0.0245	-0.0347*	-0.0385*
Abroad	0.0064	-0.0132	-0.0172	0.0302	0.0227

*Source: Author's calculations using Complementary Panel Survey; All variables are dummies except Current and Average Maize Prices. Current Maize Price is the average national maize price and Average Maize Price is the average nationwide maize price over the previous 6 months as reported by the Famine Early Warning System Network "Food Security Reports" for Malawi available from www.fews.net; * indicates significance at the 10% level.*

Appendix 1: Table 8: Selected Descriptive Statistics for Different Groups of Household

Variable	Whole Sample			Remittance Receiving Household			Non-Receiving Households			Remittance Sending Households			Non-Sending households		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
Age of Head	688	45.91	15.94	190	45.33	14.46	498	46.13	16.48	228	42.54	14.32	460	47.58	16.44
Education of Head (years)	757	4.61	3.88	214	5.37	4.11	543	4.31	3.75	249	6.01	3.99	508	3.92	3.63
Female Head Dummy	758	0.24	0.43	214	0.26	0.44	544	0.23	0.42	250	0.16	0.37	508	0.28	0.45
Internal Migrant Dummy	754	0.24	0.42	213	0.27	0.44	541	0.22	0.42	249	0.28	0.45	505	0.22	0.41
International Migrant Dummy	754	0.06	0.23	213	0.04	0.20	541	0.06	0.24	249	0.05	0.22	505	0.06	0.23
Head Married Dummy	754	0.74	0.44	213	0.69	0.46	541	0.76	0.43	249	0.81	0.39	505	0.70	0.46
Head Divorced Dummy	758	0.07	0.26	214	0.09	0.29	544	0.07	0.25	250	0.04	0.21	508	0.09	0.28
Head Widowed Dummy	754	0.10	0.30	213	0.11	0.31	541	0.10	0.30	249	0.06	0.25	505	0.12	0.33
Head Single Dummy	754	0.01	0.12	213	0.02	0.14	541	0.01	0.11	249	0.02	0.13	505	0.01	0.12
Any Member Accessed Credit in Previous 12 months	758	0.15	0.36	214	0.15	0.36	544	0.15	0.36	250	0.23	0.42	508	0.11	0.31
Member of Business Group	758	0.16	0.37	214	0.20	0.40	544	0.14	0.35	250	0.22	0.42	508	0.13	0.33
Member of Religious Group	758	0.48	0.50	214	0.57	0.50	544	0.44	0.50	250	0.52	0.50	508	0.46	0.50
Member of Political Group	758	0.10	0.31	214	0.10	0.30	544	0.11	0.31	250	0.16	0.36	508	0.08	0.27
Member of Social Group	758	0.28	0.45	214	0.30	0.46	544	0.28	0.45	250	0.31	0.46	508	0.27	0.45
Asset Score	667	0.00	0.96	218	0.09	1.09	449	-0.04	0.89	223	0.35	1.19	444	-0.18	0.76
Urban Dummy	758	0.09	0.29	214	0.14	0.35	544	0.07	0.26	250	0.15	0.36	508	0.06	0.24
Income Before Remittances*	2555	9562	53739	910	8207	25599	1645	10311	64206	807	18726	90339	1748	5331	19998
Expenditure Before Remittances*	2555	5862	19201	910	6361	18230	1645	5585	19717	807	10378	28670	1748	3776	12081
Household size	758	5.85	2.54	214	6.03	2.73	544	5.78	2.46	250	6.31	2.60	508	5.62	2.48
Any Mem with Salaried Job	2555	0.18	0.39	910	0.19	0.39	1645	0.18	0.39	807	0.26	0.44	1748	0.15	0.36
Remittance Sending Dummy	2555	0.32	0.46	910	0.41	0.49	1645	0.27	0.44	807	1.00	0.00	1748	0.00	0.00
Percent of Exp=Rem	2357	0.03	0.09	865	0.04	0.10	1492	0.03	0.09	806	0.09	0.14	1551	0.00	0.00
Remittance Receiving Dummy	2555	0.36	0.48	910	1.00	0.00	1645	0.00	0.00	807	0.46	0.50	1748	0.31	0.46
Percent of Inc=Rem	2369	0.12	0.84	904	0.33	1.34	1465	0.00	0.00	784	0.08	0.22	1585	0.15	1.02

*Source: Author's calculations using Complementary Panel Survey; * All income and expenditure are monthly and in Malawi Kwacha (MK). Average exchange rate during the period of the survey was US$1=MK73.2.*

Appendix II: Correlations

Table 9: Correlations between Dummies indicating Receipt of Remittances from Different Sources, and Sending Remittances to Different Sources

		REMITTANCES IN						
		Village	*District*	*Other Dist*	*Other Urb*	*Abroad*	*Parents*	*Children*
R	*Village*	0.1745*	0.0222	0.0485*	0.0479*	-0.0300	0.0591*	-0.0014
E	*District*	-0.0079	0.1189*	0.0394*	-0.0462*	0.0321	0.0363*	-0.0519*
M	*Other Dist*	0.0254	0.0106	0.1098*	0.0372*	-0.0216	-0.0177	-0.0083
	Other Urb	-0.0232	0.0079	-0.0144	-0.0071	-0.0050	-0.0091	-0.0139
O	*Abroad*	0.0065	-0.0143	-0.0118	-0.0058	-0.0041	-0.0074	-0.0114
U	*Parents*	0.0191	0.0187	0.0436*	0.0161	0.0114	0.0360*	-0.0252
T	*Children*	0.0062	-0.0382*	0.0269	0.0015	0.0157	0.0083	0.0416*
	Grandchild	0.0121	0.0353*	0.0842*	0.0168	-0.0094	0.0307	0.0557*
	Sibling	0.0190	0.0075	0.0157	0.0088	0.0062	0.0163	-0.0225
	Paternal	-0.0078	0.0010	0.0487*	0.0132	0.0092	0.0136	-0.0152
	Maternal	0.0372*	-0.0182	0.0171	0.0395*	-0.0178	0.0319	-0.0143
	Relatives	0.1115*	0.0704*	0.0134	-0.0222	0.0103	0.0155	0.0067
	Neighbor	0.0985*	0.1053*	0.0544*	0.0214	-0.0185	0.0203	-0.0184
	Spouse	-0.0095	-0.0071	-0.0059	-0.0029	-0.0020	-0.0037	-0.0057

		REMITTANCES IN						
		Grandchild	*Sibling*	*Paternal*	*Maternal*	*Relatives*	*Neighbor*	*Spouse*
R	*Village*	0.0017	0.1054*	0.0549*	0.0518*	0.0239	0.1054*	0.0051
E	*District*	-0.0301	0.0864*	0.0123	0.0160	0.0033	0.0885*	-0.0042
M	*Other Dist*	-0.0232	0.0659*	0.0372*	0.0185	-0.0130	0.0865*	0.0046
	Other Urb	-0.0054	-0.0145	-0.0071	0.0377*	-0.0099	-0.0173	-0.0042
O	*Abroad*	-0.0044	-0.0118	0.0630*	-0.0071	-0.0081	-0.0141	-0.0034
U	*Parents*	-0.0091	0.0689*	0.0161	-0.0001	-0.0015	0.0263	0.0219
T	*Children*	0.0128	0.0373*	-0.0195	-0.0238	-0.0118	-0.0185	-0.0115
	Grandchild	0.0295	0.0519*	0.0168	-0.0164	-0.0187	0.0225	-0.0079
	Sibling	-0.0129	0.0751*	0.0317	0.0209	-0.0098	-0.0166	-0.0026
	Paternal	-0.0172	0.0669*	0.0491*	0.0315	-0.0318	-0.0061	-0.0134
	Maternal	-0.0191	0.0421*	0.0071	0.0762*	-0.0354*	0.0273	0.0394*
	Relatives	-0.0167	0.0710*	-0.0222	-0.0272	0.2116*	0.0638*	-0.0131
	Neighbor	-0.0125	0.0572*	0.0532*	0.0602*	-0.0113	0.1997*	-0.0076
	Spouse	-0.0022	-0.0059	-0.0029	-0.0036	-0.0041	-0.0070	-0.0017

*Source: Author's calculations using Complementary Panel Survey; * indicates significance at the 10% level*

Table 10: Correlations between Values of Remittances Received from Different Sources, and Values Sent to Different Sources

		REMITTANCES IN						
		Village	*District*	*Other Dist*	*Other Urb*	*Abroad*	*Parents*	*Children*
R	Village	0.0369*	0.0523*	0.0187	0.0076	-0.0037	0.1276*	-0.0014
E	District	0.0062	0.0234	0.0119	-0.0057	0.0022	-0.0017	-0.0102
M	Other Dist	0.0816*	0.0339*	0.0055	0.0294	-0.0064	0.0018	0.0080
	Other Urb	-0.0050	-0.0046	-0.0014	-0.0023	-0.0020	-0.0019	-0.0045
O	Abroad	0.0301	-0.0041	-0.0012	-0.0019	-0.0017	-0.0017	-0.0038
U	Parents	0.0841*	0.0323	-0.0020	0.0177	-0.0006	0.0080	-0.0108
T	Children	-0.0053	-0.0103	0.0024	-0.0032	0.0031	-0.0043	0.0359*
	Grandchild	-0.0021	-0.0035	0.0005	-0.0020	-0.0020	0.0003	-0.0014
	Sibling	-0.0031	-0.0056	-0.0015	0.0015	-0.0003	-0.0032	-0.0055
	Paternal	-0.0107	-0.0100	0.0067	0.0041	-0.0044	-0.0025	0.0239
	Maternal	0.1332*	-0.0007	-0.0021	0.0518*	-0.0042	0.0456*	-0.0053
	Relatives	-0.0041	0.0476*	0.0010	-0.0043	-0.0013	-0.0034	-0.0037
	Neighbor	0.0495*	0.1703*	0.0617*	-0.0023	-0.0059	0.3192*	-0.0044
	Spouse	-0.0029	-0.0028	-0.0008	-0.0013	-0.0011	-0.0011	-0.0026

	REMITTANCES IN						
	Grandchild	*Sibling*	*Paternal*	*Maternal*	*Relatives*	*Neighbor*	*Spouse*
R Village	-0.0034	0.0052	-0.0047	0.0025	0.0051	0.0285	-0.0011
E District	-0.0040	0.0704*	-0.0048	0.0030	0.0618*	0.0252	-0.0015
M Other Dist	-0.0050	0.0429*	0.1572*	-0.0046	0.0599*	0.0562*	-0.0042
Other Urb	-0.0015	-0.0032	-0.0023	-0.0020	-0.0034	-0.0040	-0.0013
O Abroad	-0.0013	-0.0027	0.1191*	-0.0027	-0.0029	-0.0034	-0.0011
U Parents	-0.0036	0.0323	0.1013*	-0.0033	0.0221	0.0369*	0.0031
T Children	-0.0034	0.0014	-0.0053	-0.0071	-0.0065	-0.0028	-0.0030
Grandchild	-0.0015	0.0061	-0.0023	-0.0031	-0.0034	-0.0038	-0.0013
Sibling	-0.0025	0.0000	0.0257	-0.0045	-0.0050	-0.0026	-0.0021
Paternal	-0.0036	0.0240	0.0009	-0.0060	-0.0080	-0.0028	-0.0031
Maternal	-0.0033	0.0195	-0.0048	0.0735*	-0.0073	0.1230*	-0.0028
Relatives	-0.0029	-0.0024	-0.0044	-0.0059	0.1750*	0.0150	-0.0025
Neighbor	-0.0040	0.0333*	-0.0024	0.0199	0.0231	0.1173*	-0.0049
Spouse	-0.0009	-0.0019	-0.0014	-0.0018	-0.0020	-0.0023	-0.0008

*Source: Author's calculations using Complementary Panel Survey; * indicates significance at the 10% level*

Table 11: Correlations between Shocks Suffered by Household and Remittance Received by Source

	SHOCK						
Source	Baby Man	Married	Divorced	Fem Married	Work Seek	Work	Marriage
Village	-0.0309	-0.0075	0.0128	-0.0292	-0.0215	-0.0185	-0.0527*
District	-0.0301	0.0283	-0.0318	0.0148	0.0107	0.0247	0.0175
Other Dist	-0.0285	0.0000	0.0020	-0.0228	0.0601*	0.0128	-0.0103
Other Urban	0.0270	-0.0178	-0.0173	0.0143	0.0206	0.0664*	0.0056
Abroad	-0.0064	-0.0125	-0.0122	-0.0313	0.0329*	-0.0105	-0.0139
Parents	0.0234	-0.0047	-0.0036	-0.0258	0.0217	0.0025	-0.0216
Children	-0.0755*	0.0271	-0.0211	0.0462*	0.0233	0.0298	0.0469*
Grandchild	-0.0220	0.0165	0.0177	0.0179	-0.0068	0.0244	0.0151
Sibling	-0.0107	-0.0123	-0.0106	-0.0030	-0.0097	0.0124	-0.0246
Paternal	0.0198	0.0050	0.0061	-0.0151	0.0075	0.0122	-0.0029
Maternal	0.0315	-0.0218	0.0368*	-0.0140	0.0043	-0.0182	-0.0167
Relation	-0.0299	-0.0082	-0.0070	-0.0263	-0.0349*	-0.0010	-0.0377*
Neighbour	-0.0303	-0.0016	-0.0206	-0.0319	0.0005	-0.0114	-0.0335*
Employee	0.0269	-0.0054	-0.0052	-0.0134	-0.0096	-0.0045	-0.0162
NGO	-0.0009	-0.0083	-0.0081	0.0204	0.0955*	-0.0070	0.0105
Spouse	-0.0031	0.0276	-0.0102	0.0066	0.1130*	-0.0088	0.0250
In Total	-0.0455*	-0.0012	-0.0033	-0.0223	0.0435*	0.0142	-0.0326*

	SHOCK						
Source	Live Relation	Death	Sick Boy	Sick Girl	Sick Man	Sick Fem	Sick Mem
Village	-0.0253	0.0013	0.0496*	0.0553*	-0.0310	0.0571*	0.0246
District	-0.0358*	0.0058	0.0771*	0.0359*	0.0002	0.0133	0.0157
Other Dist	-0.0020	0.0075	0.0327*	0.0016	-0.0518*	0.0312	0.0088
Other Urban	0.0292	-0.0074	-0.0518*	-0.0126	0.0172	0.0139	0.0181
Abroad	-0.0154	0.0128	-0.0242	0.0039	-0.0066	0.0013	0.0051
Parents	0.0202	-0.0016	0.0165	0.0311	0.0191	0.0178	0.0337*
Children	-0.0212	0.0190	-0.0019	0.0229	-0.0326*	0.1031*	0.0502*
Grandchild	0.0080	0.0087	0.0066	-0.0011	-0.0136	0.0394*	0.0253
Sibling	0.0044	0.0068	0.0453*	0.0054	-0.0111	0.0261	-0.0000
Paternal	0.0219	0.0054	-0.0257	-0.0217	-0.0161	0.0079	-0.0037
Maternal	0.0040	-0.0192	-0.0346*	-0.0224	0.0060	0.0087	-0.0112
Relation	-0.0490*	-0.0086	0.0993*	0.0911*	0.0206	0.0267	0.0450*
Neighbour	-0.0294	0.0192	0.0487*	0.0470*	-0.0232	0.0018	0.0114
Employee	0.0040	-0.0099	-0.0156	-0.0147	-0.0229	0.0107	-0.0116
NGO	-0.0000	-0.0154	0.0489*	0.0153	0.0065	0.0317	0.0416*
Spouse	0.0224	0.0447*	-0.0014	0.0016	-0.0225	-0.0152	-0.0282
In Total	-0.0301	0.0213	0.0588*	0.0550*	-0.0387*	0.0625*	0.0257

*Source: Author's calculations using Complementary Panel Survey; * indicates significance at the 10% level*

Table 12: Correlations between Shocks Suffered by Household and Remittance Sent by Source

	SHOCK						
Source	Baby	Man Married	Divorced	Fem Married	Work Seek	Work	Marriage
Village	0.0423*	-0.0330*	-0.0394*	-0.0047	-0.0511*	-0.0087	-0.0132
District	-0.0095	-0.0048	0.0079	-0.0173	-0.0226	0.0222	-0.0048
Other Dist	0.0034	0.0401*	-0.0078	-0.0282	0.0489*	-0.0017	-0.0216
Other Urban	-0.0221	-0.0059	-0.0057	0.0144	-0.0105	-0.0049	0.0074
Abroad	-0.0180	-0.0048	-0.0047	-0.0120	-0.0086	-0.0040	-0.0144
Parents	-0.0092	0.0172	-0.0271	-0.0373*	-0.0066	-0.0054	-0.0280
Children	-0.0123	-0.0160	0.0103	0.0249	0.0003	0.0166	0.0171
Grandchild	-0.0184	-0.0110	-0.0107	-0.0120	-0.0198	-0.0092	-0.0063
Sibling	0.0121	-0.0030	-0.0156	0.0245	0.0089	-0.0256	0.0156
Paternal	-0.0020	-0.0188	-0.0183	-0.0284	-0.0087	0.0358*	-0.0325
Maternal	0.0205	0.0181	-0.0003	-0.0187	0.0075	0.0057	-0.0122
Relation	-0.0125	0.0261	-0.0178	0.0115	-0.0328*	-0.0153	0.0025
Neighbor	0.0264	-0.0193	-0.0171	-0.0252	-0.0252	0.0055	-0.0129
Employee	0.0435*	-0.0024	-0.0023	-0.0060	-0.0043	-0.0020	-0.0072
Spouse	-0.0090	-0.0024	-0.0023	-0.0060	-0.0043	-0.0020	-0.0072
In Total	0.0238	-0.0260	-0.0221	-0.0149	-0.0338*	-0.0018	-0.0177

	SHOCK						
Source	Live Relation	Death	Sick Boy	Sick Girl	Sick Man	Sick Fem	Sick Mem
Village	0.0192	-0.0041	-0.0188	-0.0194	0.0313	0.0064	0.0153
District	0.0015	-0.0099	0.0073	0.0006	0.0344*	-0.0178	0.0358*
Other Dist	0.0166	-0.0193	-0.0238	-0.0109	-0.0077	-0.0003	-0.0111
Other Urban	0.0651*	-0.0109	-0.0171	-0.0162	0.0343*	0.0046	0.0294
Abroad	0.0354*	-0.0089	-0.0139	-0.0132	-0.0205	-0.0035	-0.0223
Parents	-0.0257	-0.0094	0.0164	0.0133	-0.0002	0.0191	0.0144
Children	0.0134	-0.0155	-0.0178	0.0061	-0.0022	0.0280	0.0038
Grandchild	0.0174	-0.0204	-0.0182	-0.0158	-0.0047	0.0086	-0.0187
Sibling	0.0331*	0.0054	0.0006	-0.0125	0.0552*	-0.0197	0.0322
Paternal	-0.0000	-0.0226	-0.0134	-0.0171	0.0083	-0.0081	-0.0097
Maternal	0.0417*	-0.0058	-0.0087	-0.0108	0.0535*	-0.0077	0.0360*
Relation	-0.0462*	-0.0214	0.0567*	0.0381*	-0.0068	0.0143	0.0304
Neighbor	0.0224	0.0240	-0.0445*	-0.0440*	0.0024	-0.0138	-0.0109
Employee	0.0442*	-0.0044	-0.0070	-0.0066	-0.0102	0.0309	0.0186
Spouse	0.0442*	-0.0044	-0.0070	-0.0066	-0.0102	-0.0127	-0.0211
In Total	0.0146	-0.0061	-0.0190	-0.0184	0.0339*	-0.0118	0.0192

*Source: Author's calculations using Complementary Panel Survey; * indicates significance at the 10% level*

Appendix III: Selected Statistics by Survey Round

Table 13: Receipt of Remittances from Different Geographical Areas

Survey Round	Jan-00	Nov-00	Jul-01	Jul-02
% Receiving Remittance from Home Village/Urban Area	0.13	0.16	0.11	0.40
	(.34)	(.37)	(.31)	(.49)
Average Received from Home Village/Urban Area	31.94	26.33	24.55	70.64
	(310.13)	(186.07)	(217.95)	(236.04)
% Receiving Remittance from District (not home village or urban area)	0.08	0.11	0.08	0.22
	(.27)	(.31)	(.27)	(.42)
Average Received from District	17.16	35.75	33.87	107.51
	(127.62)	(402.12)	(312.62)	(367.77)
% Receiving Remittance from Other Districts	0.06	0.07	0.06	0.15
	(.24)	(.26)	(.24)	(.36)
Average Received from Other Districts	23.15	23.72	257.60	99.55
	(195.83)	(169.24)	(4816.4)	(545.2)
% Receiving Remittance from Other Urban Area	0.03	0.03	0.02	0.01
	(.16)	(.16)	(.13)	(.11)
Average Received from Other Urban Area	9.16	16.31	17.10	16.73
	(76.26)	(209.42)	(321.24)	(203.45)
% Receiving Remittance from Overseas	0.01	0.00	0.01	0.02
	(.11)	(.07)	(.1)	(.13)
Average Received from Overseas	24.09	18.07	9.94	38.00
	(422.53)	(427.62)	(130.9)	(424.81)

Source: Author's calculations using Complementary Panel Survey; standard deviations in parenthesis.

Table 14: Receipt of Remittances from Different Relations

Survey Round	Jan-00	Nov-00	Jul-01	Jul-02
% Receiving Remittances from Parents	0.03	0.03	0.03	0.05
	(.18)	(.17)	(.16)	(.22)
Average Received from Parents	5.60	3.73	17.74	5.97
	(58.06)	(39.46)	(273.18)	(69.05)
% Receiving Remittances from Children	0.05	0.05	0.07	0.15
	(.23)	(.22)	(.26)	(.36)
Average Received from Children	19.25	18.46	42.96	77.31
	(153.09)	(131.25)	(419.83)	(316.55)
% Receiving Remittances from Grandchildren	0.01	0.01	0.01	0.03
	(.09)	(.09)	(.1)	(.16)
Average Received from Grandchildren	1.12	0.29	1.31	9.77
	(15.13)	(4.71)	(14.06)	(130.83)
% Receiving Remittances from Siblings	0.06	0.08	0.06	0.15
	(.24)	(.27)	(.23)	(.36)
Average Received from Siblings	17.87	56.28	37.51	78.38
	(163.7)	(621.41)	(490.52)	(548.68)
% Receiving Remittances from Paternal Relatives	0.02	0.04	0.01	
	(.15)	(.2)	(.11)	
Average Received from Paternal Relatives	7.01	7.60	2.88	

	(105.22)	(68.21)	(38.77)	
% Receiving Remittances from Maternal Relatives	0.03	0.06	0.03	
	(.17)	(.24)	(.16)	
Average Received from Maternal Relatives	3.94	4.98	5.50	
	(38.09)	(34.23)	(63.29)	
% Receiving Remittances from Unspecified Relatives				0.21
				(.41)
Average Received from Unspecified Relatives				56.14
				(242.75)
% Receiving Remittances from Unrelated Neighbors	0.09	0.10	0.05	0.23
	(.28)	(.3)	(.23)	(.42)
Average Received from Neighbors	25.80	24.28	9.52	44.51
	(281.21)	(191.44)	(123.06)	(213.8)
% Receiving Remittances from Spouses	0.01	0.01	0.01	
	(.11)	(.09)	(.08)	
Average Received from Spouses	21.49	3.21	7.69	
	(416.21)	(44.48)	(115.37)	

Source: Author's calculations using Complementary Panel Survey; standard deviations in parenthesis.

Table 15: Remittances Sent to Different Geographical Areas

Survey Round	**Jan-00**	**Nov-00**	**Jul-01**	**Jul-02**
% Giving Remittance to Home Village/Urban Area	0.20	0.20	0.13	0.23
	(.4)	(.4)	(.33)	(.42)
Average Given to Home Village/Urban Area	17.75	23.51	22.33	66.71
	(103.79)	(119.45)	(130.98)	(622.04)
% Giving Remittance to District (not home village or urban area)	0.11	0.15	0.11	0.12
	(.31)	(.36)	(.31)	(.33)
Average Given to District	40.23	24.96	25.32	49.71
	(642.38)	(136.75)	(151.24)	(306.14)
% Giving Remittance to Other Districts	0.05	0.04	0.04	0.03
	(.22)	(.2)	(.19)	(.17)
Average Given to Other Districts	24.64	17.29	21.67	35.45
	(186.4)	(175.56)	(197.66)	(314.57)
% Giving Remittance to Other Urban Area	0.00	0.00		0.01
	(.04)	(.05)		(.08)
Average Given to Other Urban Area	5.94	0.79		14.03
	(163.45)	(14.93)		(238.48)
% Giving Remittance to Overseas	0.00	0.00		
	(.06)	(.04)		
Average Given to Overseas	4.47	0.07		
	(84.93)	(1.94)		

Source: Author's calculations using Complementary Panel Survey; standard deviations in parenthesis.

Table 16: Remittances Sent to Different Relations

Survey Round	Jan-00	Nov-00	Jul-01	Jul-02
% Giving Remittances to Parents	0.06	0.05	0.04	0.05
	(.23)	(.22)	(.19)	(.22)
Average Given to Parents	22.19	11.39	11.31	40.48
	(175.31)	(68.83)	(86.84)	(456.52)
% Giving Remittances to Children	0.02	0.01	0.02	0.02
	(.12)	(.12)	(.14)	(.14)
Average Given to Children	1.54	2.81	5.85	14.19
	(19.68)	(28.37)	(49.76)	(141.8)
% Giving Remittances to Grandchildren	0.01	0.01	0.01	0.01
	(.1)	(.09)	(.09)	(.08)
Average Given to Grandchildren	6.05	2.45	0.97	2.81
	(163.45)	(52.98)	(14.11)	(43.47)
% Giving Remittances to Siblings	0.06	0.07	0.06	0.06
	(.23)	(.25)	(.23)	(.23)
Average Given to Siblings	36.29	13.74	14.82	23.34
	(643.19)	(140.96)	(106.03)	(244.65)
% Giving Remittances to Paternal Relatives	0.03	0.04	0.02	
	(.16)	(.2)	(.14)	
Average Given to Paternal Relatives	4.78	6.38	3.72	
	(62.61)	(57.36)	(44.24)	
% Giving Remittances to Maternal Relatives	0.03	0.05	0.03	
	(.18)	(.21)	(.17)	
Average Given to Maternal Relatives	8.39	4.26	3.19	
	(104.33)	(30.42)	(26.85)	
% Giving Remittances to Unspecified Relatives				0.11
				(.32)
Average Given to Unspecified Relatives				64.61
				(442.86)
% Giving Remittances to Unrelated Neighbors	0.16	0.17	0.08	0.13
	(.37)	(.37)	(.27)	(.33)
Average Given to Neighbors	8.22	24.91	12.87	12.38
	(38.22)	(175.23)	(100.31)	(65.09)
% Giving Remittances to Spouses	0.00			
	(.04)			
Average Given to Spouses	0.22			
	(6.17)			

Source: Author's calculations using Complementary Panel Survey; standard deviations in parenthesis.