



Thailand Vietnam Socio Economic Panel

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Leibniz Universität Hannover

2018

TVSEP Working Paper

WP-009

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# Who Remits and Why? Evidence on Internal Migrant Remittances from Vietnam and Thailand

Rasadhika Sharma\*<sup>‡</sup> and Ulrike Grote\*

## Abstract

The paper analyses determinants and motivations of internal migrant remittances based on a unique data set that combines a household survey from three provinces in Vietnam and Thailand with a migrant tracing survey that was conducted in Ho Chi Minh City and the Greater Bangkok area. Using the Heckman model, we find that human capital, stronger family ties and better living conditions positively influence the migrant's decision to remit. In terms of the amount remitted, migrants engaged in the service sector remit lower shares of their income and remittances decrease as the household wealth increases. Furthermore, we explore the behavioral side of remittances by constructing proxy groups that represent each strand of migrant's motivation for remitting. We examine the relationship of these proxy groups and remittances to conclude that exchange or loan repayment motive underpinned by altruism is the strongest motivation in our case.

**Keywords:** Remittances, Altruism, Self-interest, Heckman model, Thailand, Vietnam

**JEL:** F24, J61, O53, D90

RePEc:tv:wpaper:wp-009

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## 1. Introduction

Internal migration is a salient feature of developing nations all over the globe. With burgeoning production and service sectors, many people move to cities in search of better job opportunities and promising education. Though there is a sizable population involved in international migration, the number of people moving internally has witnessed a substantial increase. According to the World Bank (2016), the number of internal migrants is around 763 million which is almost three times that of international migrants. Proximity to the destination, lower cultural barriers and involvement of lower costs make internal migration preferable for poorer households compared to international migration (Sugiyarto, 2014).

This gives great significance to the flows and impact of internal migrant remittances. While it is harder to state the exact statistics pertaining to the amount of internal remittances as most of these transfers occur through unofficial channels, the evidence related to the impact of internal remittances is much easier to highlight. Numerous studies have established that internal remittances can act as an alternate livelihood strategy (Adams, 2005), ease liquidity constraints and smoothen rural household consumption (Orozco, 2006).

In this respect, it is not only important to understand the flows and importance of remittances but also why they vary across individuals. Given that there are two migrants with the same income, what makes one of them send a bigger proportion of his or her income back home? This is an important question especially in relation to developing regions such as Vietnam and Thailand where remittances assume greater importance. Internal migration is on the rise and governments are encouraging migration policies. Considering that there is positive evidence of the impact of remittances on the poor in these regions (Amare et al., 2012; Nguyen et al., 2015), a thorough analysis of this heterogeneity could provide effective migration policies to benefit the more vulnerable.

We use a unique data set from Vietnam and Thailand that contains information on socio-economic variables for migrants who moved within their respective countries and their rural household for 2010. Our study examines both the determinants and the motivations of internal migrant remittances. Determinants are factors that decide ‘who is more likely to remit’ and ‘who remits more’. Motivations in contrast provide a reason for ‘why does the migrant remit’ or ‘why the migrant remits more’; proposed types of motivations are altruism, self-interest, enlightened self-interest, and tempered altruism.

There are studies that have looked at both these aspects but facing severe limitations. Firstly, most studies in this field have to deal with data paucity. They either make use of only migrant surveys coupled with limited or no household characteristics or use household surveys with limited or no migrant information. However, the decision of how much to remit is a two-sided decision. Irrespective of what is being estimated, ‘determinants’ or ‘motivations’ of remittances, solely considering migrant or household characteristics is not sufficient. Scholars have tried to overcome this limitation by using proxies but use of exact data statistics could entail different results. Secondly, contingent on what data is available to them, authors focus on analyzing either ‘determinants’ or ‘motivations’. These two aspects answer two different questions that need to be analyzed in the same context to provide an all-round explanation of the heterogeneity in remittance behavior. There are some studies that deal with both the aspects but do not give both the sections the emphasis that they require.

To solve these issues, our paper uses a rich data set that contains information not only on the migrants but also on the households. We look at determinants and, additionally, examine motivations by borrowing proxies from existing literature and creating new variables. This gives us an opportunity to produce a comprehensive study.

Our paper is structured as follows. The next section presents the literature review and conceptual framework for both determinants and motivations of remittances. The third and fourth sections lay down the data and methodology. The fifth section presents the results and a detailed discussion. We conclude in the last section.

## **2. Literature Review and Conceptual Framework**

The theoretical and empirical literature provides some useful insights into the determinants and motivations of migration. Most literature on the determinants utilizes data obtained from migrant surveys and have either limited or no information about the household of origin. The literature for motivations, however, generally uses household data sets taking into account either few or no migrant characteristics.

### **‘Determinants’ of remittances**

Determinants of remittances can be analyzed by examining the impact of microeconomic variables such as age of migrant and years of education of the migrant on remittances. There is a general impression that an educated migrant is less likely to send back higher remittances. Studies such as Dustmann and Mestres (2008) confirm this notion. This is similar to Hodinott (1994) and Funkhouser (1995) who also establish that as the level of education of the migrant increases, the remittances decrease. In contrast, some studies conclude that the education level of the migrant has no significant effect on the remittance levels (Merkle & Zimmermann, 1992), while some postulate a positive relationship (Biyase and Tregenna, 2016).

Dustmann and Mestres (2008) analyze the effect of migrant’s return plan on remittance levels based on data from Germany. They find that the policies that encourage temporary migration, lead to higher remittances. These results are corroborated by Vete (1995). Czaika and Spray (2013), however, establish a curvilinear relationship between length of absence of the migrant and the remittances. Furthermore, close family ties, employment conditions and residence status also impact the amount of remittances being sent back home (Vete, 1995; Havolli, 2011). Gender is also viewed as an important variable in this respect. While Vete (1995) in his analysis of Tongan remittance pattern establishes that women have a higher tendency to remit, Havolli (2011) concludes that men tend to remit more. In a detailed analysis of 18 countries, Orozco et al. (2006) also find that women remit less than men but the remittances directed to distant relatives are higher in case of women than men.

### **‘Motivations’ of remittances**

Motivations also look at the relationship between microeconomic variables and remittances. However, the inferences are based on theoretical concepts of altruism and self-interest. Lucas and Stark (1985) were the first to discuss the motivations behind migrant remittances. They hypothesize that a migrant’s decision to remit could be driven by pure altruism, pure self-interest, tempered altruism or enlightened self-interest. Until then, most studies implicitly assumed altruism as the main motivation for the migrant to remit. Under pure

altruism, a migrant cares about the wellbeing of his family, sometimes over his own welfare. Technically, the utility function of the migrant depends on the consumption of his family (Hagen-Zanker & Siegel, 2007). According to Lucas and Stark (1985), per capita income is the kernel of the pure altruism model. Conversely, pure self-interest is the main motivation when the migrant remits in expectation of future inheritance, intends to return home or/and invests in assets at home and expects their maintenance.

Various studies use proxies to infer the migrant's motivation to remit. The relationship between these proxies and the remittances provides the basis for inference. In their analysis of household data set from Botswana, Lucas and Stark (1985) find that with an increase in the migrant's income, remittances also increase. However, as the remittances are not only directed to poorer households but also increase as the household income increases, the migrant is motivated by self-interest. Another study by Agarwal and Horowitz (2002) uses a different approach and proposes that for altruism to hold, the remittances would fall with an increase in the number of migrants. Additionally, the migrant remittances would decrease with an increase in the household's earnings. They conclude that Guyanese migrants are altruistically motivated. Hoddinott (1994) describes land area an inheritable asset that parents use as a 'reward' for migrants in return of remittances. His analysis establishes a positive relationship between land value and remittances, corroborating the self-interest motive.

Though pure altruism and pure self-interest are two extreme ends of the spectrum, yet it is sometimes difficult to disentangle the two. This gives rise to the concepts of tempered altruism or enlightened self-interest which are seen not only as an intersection of the two views but also as a separate set of motivations (Lucas & Stark, 1985). Additionally, these can be viewed as contractual agreements made by the family and the migrant that are underpinned by altruism and/or self-interest (Hagen-Zanker & Siegel, 2007). Nevertheless, it is not trivial to distinguish between the various agreements and the underlying force itself.

The coinsurance motive is the first of these agreements. The original rural household relies on the migrant for risk insurance and the migrant relies on his household in times of uncertainty. The remittances increase when the household experiences shocks or the household's income decreases. However, this could also indicate altruism. Interestingly, under this concept the remittances also increase when the risk-level of the migrant increases (Hagen-Zanker & Siegel, 2007).

The exchange motive states that households receive remittances from migrants in return of services such as childcare (Cox, 1987). If the remittances are motivated by exchange, remittances increase or decrease depending on how much the migrant values the service. Additionally, the transfers could also be made to demonstrate laudable behavior. Cox & Stark (1994) analyze a three generation set-up to conclude that migrants with kids that live with their grandparents, tend to send remittances to set an example of how they expect their kids to act when they grow up.

Under the loan repayment motive, remittances are seen as repayment for the household's investment in the migrant such as education. In this case, the remittances should increase as the education level of the migrant increases (Poirine, 1997). Niimi and Reilly (2009) also state that a positive relationship between the years of education of the migrant and the level of remittances indicates that the migrant is repaying the household. However, this could also be associated with altruism.

**Table 1: Theoretical determinants of remittances**

Effect of ... on level of remittances	Household (HH) Wealth	Number of migrants	HH shock	Migrant shock	Family Ties	Migrant Education
Pure altruism	-		+		+	
Pure Self-interest	+	+				
Co-insurance	-		+	+		
Loan Repayment	+/-					+
Exchange motives	+/-				+	+

Source: Hagen-Zanker and Seigel, 2007 (modified by the authors)

Note: The empty spaces indicate that no such relationship has been derived until now

Table 1 is a comprehensive representation of the expected relationship of the level of remittances and the variable when examined under a specific motivation strand. These relationships have been established in the existing literature. For example, if the level of remittances increases as the household wealth increases, this indicates that the remittances are motivated under self-interest. Generally, one study relies only on one or two of these variables to reach conclusions. However, the presence of more established proxies can make the inference more robust.

With respect to Vietnam, Niimi and Reilly (2009) analyze the determinants of remittances to find a positive relationship between remittances and the duration of migration. Bonus payments and increased earnings also have a similar effect. Furthermore, they conclude that the migrant is risk-averse and the remittances act as insurance for the origin household. Another study by the same authors (Niimi & Reilly, 2011) focuses more on gender differences and states that the difference in remittances between men and women can be attributed to endowment differences. Most studies in Vietnam analyze determinants of remittances and only slightly touch upon motivations because they are based on the GSO Migrant survey. This data set comprises information on the migrant but no information on the migrant's household of origin is available. This is also cited as a limitation (Niimi & Reilly, 2009). An exception in this regard is the study by Pham and Coxhead (2016) who establish a connection between the VHLSS and a migrant tracing survey to look at the determinants of remittances. However, they too focus only on determinants and deal with motivations only cursorily. They find that remittances increase with an increase in the migrant's wage and also when the attachment to the destination is weaker. This is associated with altruism.

In case of Thailand, most studies that deal with remittances, are gender-oriented. They focus more on gender roles and its impact on remittances (Vanwey, 2004; Ogena & Jong, 1999). Vanwey (2004) uses two models to understand whether migrant remittances are sent with an

altruistic or contractual motive. She finds that women and migrants who come from poorer households are more likely to remit with an altruistic motive while males and migrants from non-poor households remit with a self-interest motive.

The following are our specific research objectives:

1. What are the determinants of internal migrant remittances?
2. What is/are the motivation(s) behind internal migrant remittances?
3. Do the determinants of internal migrant remittances vary across countries (Vietnam and Thailand)?
4. Do the determinants of internal migrant remittances vary across wealthier and poorer households (quartiles based on rural household's per capita consumption)?

### **3. Data**

The study uses cross-section data that is a combination of a household survey and a migrant tracking survey, collected under the project, "Vulnerability in Southeast Asia". The countries under investigation, Vietnam and Thailand present an excellent case for our study. Vietnam has a long history of internal migration dating back to the feudal kingdoms that encouraged migration. During the Vietnam War, people in the North relocated to rural areas to avoid being bombed whereas the South witnessed migration to the cities. This led to concentration of population in the rural areas in the North and in cities in the South. After the reunification, the Government formulated policies to redistribute the population (Dang et al., 1997). However, the *doi moi* reforms in the 1990s led to a shift from organized to spontaneous migration. They triggered de-collectivization of the agriculture sector, introduced numerous liberalization policies and increased foreign direct investment (Nimmi, 2008). This was followed by a boom in the private sector that created job opportunities for the country's young in major cities like Ho Chi Minh City, Hanoi and Da Nang. The latest Vietnamese census data states that the rate of internal migration doubled from 4% in 1999 to 8% in 2009.

Thailand, unlike Vietnam, is a net importer of international migrants. It experienced the first mass migration in early 1980s when the nation shifted from an agricultural to an export oriented and labor intensive economy. This, coupled with huge foreign direct investments, created a plethora of jobs in the cities for low-skilled labor. Migrants not only from rural Thai areas, but also from countries like Myanmar, Cambodia and Laos were attracted to bigger cities in search of better lives. It can be said that migration, especially internal migration from the north-east and northern parts of the country, underpins the growth of the economy (Huget and Chamrathirong, 2011).

For the household data, 2200 rural households were sampled in the provinces of Thua Thien Hue, Ha Tinh and Dak Lak in Vietnam. Similarly, 2200 households were sampled in Thailand in the three provinces of Ubon Ratchathani, Buriram and Nakhon Phanom<sup>1</sup>. The stratified random sample was designed to represent the target population (Hardeweg et al., 2013). The questionnaires covered a broad range of socio-economic topics such as member information, shocks, risks, and financial transfers. Though there is a panel available, we only use the data collected in 2010 as we pair it with the migrant survey.

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<sup>1</sup> For more information on the sampling process, refer to Amare et al., 2011, and Nguyen et al., 2015.

The migrant survey was conducted in 2010. Using information collected during an earlier household survey (2008), it tracked the internal migrant members of the household. The respondents answered questions relating to their migration history, working conditions, shocks, and remittances. While in Vietnam 299 migrants were traced in Ho Chi Minh City and the surrounding areas of Dong Nai and Binh Duong, in Thailand 643 migrants were traced in the Greater Bangkok area. It should be mentioned that according to the Vietnamese 2009 census, about 63% of the internal migrants in Vietnam have moved to Ho Chi Minh City. Also, in Thailand over 80% of the internal migrants migrated to Bangkok and its surrounding areas looking for new opportunities. Therefore, these specific areas provide an ideal setting for internal migration studies in the respective countries.

In the Migrant survey the following criteria were applied to define a migrant (Amare et al., 2011) – (i) is considered to be a household member by the rural household, (ii) is at least 15 years of age (iii) is living in the migrant target area at the time of the interview, (iv) has left the rural household for at least one month in the reference period (v) is not in jail, and (vi) the reason for migration is not religious. In addition to this, we exclude migrants that receive any kind of assistance from the rural household. This reduces our sample to 617 migrants. This decision was made to exclude students and people who have no net income.

## **4. Methodology**

### **4.1 Basic regressions – Determinants of remittances**

The basic regressions estimate the determinants and provide the basis to examine the motivations. They answer the following two questions:

- (1) *To remit or not to remit?*
- (2) *How much to remit?*

To estimate (1), we regress the migrants' decision to remit and for (2), we regress the proportion of income remitted. The same exogenous variables are used for both the concepts of determinants and motivations, but the inference varies greatly. While for determinants we focus on the empirical interpretation of the relationship between the dependent and independent variables, motivations are assessed using the theoretical concepts of altruism and self-interest.

#### *Model Specification:*

(1) and (2) represent a two stage decision. Therefore, we use the Full Information Maximum Likelihood (FIML) Heckman Model to estimate these regressions. Some studies have modeled the decision using Tobit (Brown, 1997; Germenji et al., 2001). However, in this case, the model is executed as a one-stage decision. It is not possible to isolate the factors that impact the decision to remit from the factors that determine how much to remit. Additionally, it should be mentioned that a migrant self-selects into the process of remitting. Therefore, there is an inherent selection bias in the data set. This phenomenon results in biased and inconsistent results when OLS is used to look at these questions.

We use the following equations to estimate (1) and (2), respectively:

$$\text{Prob}(\text{Remit}_{ij} = 1) = \alpha_0 + \varphi \text{Saving}_{ij} + \alpha_1 \text{MC}_{ij} + \alpha_2 \text{HC}_{ij} + \alpha_3 \text{PC} + \varepsilon_{ij} \quad (\text{A})$$

$$\text{rem\_proportions}_{ij} = \beta_0 + \beta_1 \text{MC}_{ij} + \beta_2 \text{HC}_{ij} + \beta_3 \text{PC} + \mu_{ij} \quad (\text{B})$$

(A) is called the selection equation while (B) is called the outcome equation.

The dependent variable in (A), *remit* is a binary variable that indicates whether a migrant *i* from village *j* remits or not. In (B), *rem\_proportion* is the proportion of income that is sent back home annually in the form of remittances. We use this measure due to the following two reasons. Firstly, studies (Agarwal & Horowitz, 2002) use the level of total remittances as a dependent variable and add total income as an explanatory variable. As total income of the migrant is generally the most important determinant of the level of remittances, it overshadows the other factors. Secondly, our aim is to understand, what is the proportion of income that the migrant remits, irrespective of how high or low the income is.

The explanatory variables can be divided into two main categories – migrant characteristics (*MC*) and household characteristics (*HC*). Additionally, we apply country and provincial controls (*PC*) and log the monetary terms.

Migrant characteristics include age, gender, years of schooling and marital status of the migrant. There are also binary controls for the migrant's job profile that specify whether the migrant is engaged in the production sector or the service sector. Production sector includes industries such as textile, basket making, construction and electronics. Service sector migrants are engaged as petty traders, waiters, electricians, and street vendors. The intent to return home is also added to the analysis along with the amount of bonuses received during the year. The *Good life* variable captures if the migrant believes that his/her living standard improved after he/she moved to the city, while *Stable income* represents if the migrant thinks that his/her income is stable. These are added to take the living conditions of the migrant into account. *Child in city* indicates whether the migrant has a child that lives with him/her in the city. *Childcare* takes the value of '1' when the migrant has a child below the age of 15 living with a grandparent (residing in the rural household) who is older than 55. There are also two variables that indicate the relation of the migrant to the rural household head. *Relation\_close* implies that the migrant is either a child or the spouse of the household head. *Relation\_distant* indicates that the migrant is a grandchild, an 'in-law' or any other relative of the household head.

We also include variables to measure if the migrant experienced any shock in the year. These are divided into three categories – private, work and weather. Private shocks include illness, accident, theft, and family ceremony. Work shocks comprise job loss, collapse of business and debt problem. Weather shocks in this case are water shortage, flooding and drought. However, it should be mentioned that only 0.5% of the migrants reported a weather shock and, therefore, we do not include it in the final regression.

The household characteristics comprise age and years of schooling of the household head. Shock variables account for any shocks experienced by the household in the year. Again, the shocks are divided into three categories. In this case, private shocks include shocks such as illness of any family member, death, accident, ceremonies and theft. We consider job loss,

collapse of business, being cheated at work, and changes in the prices of outputs and inputs as work shocks. Weather shocks such as floods, droughts, pests and landslides are more common in case of shocks reported by households. We also include the coping strategies that were adopted by the household in order to recover from the shock. These are divided into two main categories: *Cope insurance* which involves using insurance, savings and borrowing from formal and informal channels and *Cope grants* that captures receiving grants from relatives, the Government or NGOs. Furthermore, livestock value, total land area and per capita consumption are also incorporated in the equation to capture the wealth status of the rural household. A variable *number of migrants* represents the number of migrants from the respective household. It should be mentioned that in our sample, we have about 400 households with more than one migrant.

The selection and outcome equation contain the same variables, except *Saving*. *Saving* is a binary variable that takes the value 1 when the migrant has savings and 0 when the migrant has no savings. When using the Heckman model it is important to have at least one variable more in the selection equation than in the outcome equation to ensure no collinearity. This extra variable is called the identifier and is supposed to have an effect on the selection decision but not on the outcome (Cameron & Trivedi, 2009). We choose *Saving* as the identifier due to the following reasons. Firstly, *Saving* creates nontrivial variation regarding the remittance decision but has no direct influence on the proportion of remittances. Pham and Coxhead, 2016, also use the same reasoning to justify their identifier. We also include a falsification test in the appendix to support our choice of identifier (Falco & Yesuf, 2011). Additionally, we record savings as a binary variable and therefore it impacts whether the migrant remits or not (binary), but not the amount or levels being remitted.

#### **4.2 Motivations of remittances**

To look at the motivations, we use the results that are derived from the basic regressions. However, instead of looking at specific determinants, the focus in this part shifts to the association of specific variable groups. We categorize the independent variables into *proxy groups* that represent each proposed strand of motivation – altruism, self-interest, co-insurance, loan repayment and the exchange motive. These proxies have been borrowed from existing literature or created by the authors.

In our study, *altruism* and *self-interest* are analyzed using the proxy group comprising per capita consumption of the household, land area owned by the household, value of livestock owned by the household, migrant's intent to return to the household, and household shocks. *Coinsurance* is captured again by the per capita consumption of the household, living conditions of the migrant and the shocks experienced by the household and the migrant. The *loan repayment* motive is analyzed through the per capita consumption of the household and the education of the migrant. Lastly, in order to capture the *exchange motive*, we use per capita consumption of the household and education of the migrant. Additionally, we create the variable *childcare* to see if the migrant is sending remittances in exchange of child care services offered by the rural household. A table illustrating which paper uses what proxy is given in the Appendix. (8.2)

It can be observed that there is substantial overlapping across groups. To solve this issue, we add at least one extra variable in each group to ensure clarity. Thereafter, we take into consideration both the relationship between the proxy groups and the remittance decision, and

between the proxy groups and remittance levels, to understand the underlying migrant motivation. We compare the signs obtained in the estimates with the expected signs and then endeavor to identify a specific strand of motivation for the sample.

### **4.3 Country comparison and Quartile comparison**

We perform additional regressions to obtain greater insights into the remittance heterogeneity that can also act as robustness checks. Though both Vietnam and Thailand share the same continent and are part of the ASEAN, yet there are many economic, environmental and cultural differences. Therefore, we look at country-specific regressions. Instead of using pooled data, we examine each country separately and then make comparisons. Additionally, we perform quantile-specific regressions using the pooled data. We form quartiles based on per capita consumption of the rural households and compare the migrant remittance behavior across the households. The bottom two quartiles have a mean per capita consumption of USD 778 while the wealthier quartiles have a mean per capita consumption of USD 1,962.

Again, we use the basic regression equations and methodology. However, not all explanatory variables could be included in these regressions. As the sample was divided on the basis of country, the sample size decreased considerably especially for Vietnam. This led to an imbalance in specific binary variables. For example, there were only 9 migrants that could be categorized under the distant relative variable. Therefore, some explanatory variables had to be dropped.

## **5. Results and Discussion**

### **5.1 Descriptive results**

Table 2 shows that remitters earn almost 1.8 times more than non-remitters and also get higher bonuses. Additionally, remitters tend to be older and more educated. Origin households of remitters have older heads and more migrants. These households also have slightly higher per capita consumption and own more land area.

In our sample, almost 76% of the remitters save while only 45% of non-remitters report savings. 53% of the remitters are married compared to 34% of non-remitters. Remitters also experience more work related shocks (36%) in comparison to non-remitters (26%). In addition, more remitters are employed in the service sector (49%) than non-remitters (40%). Interestingly, while only 55% of remitters report their income being stable compared to 69% of non-remitters, 89% of remitters feel that their life has improved in relation to their non-remitting counterparts (75%).

With regards to the dependent variable, on average a migrant sends about 40% of his or her income back home in the form of remittances. This amounts to approximately US\$ 2,390 per migrant.

**Table 2: Data descriptives**

Variable	Remitters	Non-remitters
<b>Continuous variables – mean (s.d.)</b>		
<i>Migrant characteristics</i>		
Net income	7342.9 (537.2)**	3974 (340.3)**
Bonus (log)	296 (24.8)***	123.8 (25.96)***
Yrs of schooling	8.3 (0.20)***	6.5 (0.57)***
Age	29.2 (0.36)***	23.2 (0.81)***
<i>Household Characteristics</i>		
Age of household head	58 (0.5)***	54.4 (1.3)***
Yrs of schooling of household head	4.9 (0.25)	5.1 (0.51)
Total migrants	2.2 (0.06)***	1.7 (0.17)***
Per capita consumption (log)	1335.4 (39.3)	1377.8 (116.1)
Livestock value (log)	972.4 (67.4)	1147.3 (150.2)
Total land area	15.8 (0.68)	14.8 (1.7)
<b>Binary variables - % of 1s in the group</b>		
<i>Migrant characteristics</i>		
Saving (have savings)	75.8	44.8
Marital status (married)	53.4	34
Gender (male)	51.2	50.8
Intent to return (wants to return)	79.9	74.4
Shock private (experienced the shock)	53.9	50.43
Shock work (experienced the shock)	36.2	26.1
Job_production (employed in production)	49.07	55.76
Job_service (employed in service)	49.09	39.83
Child in city (has child in the city)	09.59	13.18
Stable income (has stable income)	55.09	68.8
Good life (better off than in the village)	89.18	75.39
Relation_close (son, daughter or spouse of the hh head)	80.89	81.77

Source: own calculations

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 5.2 Determinants of remittances

Table 3 shows the results from the basic regression which examine the influence of household and migrant characteristics on the migrant's remittance decision and the proportion of income remitted. It can be seen that among the migrant characteristics, marital status, years of schooling and the age of the migrant, associate with the decision to remit significantly. If the migrant is married, he/she is more likely to remit. This is not surprising as most migrants remit with an intention to support their spouses and families that still live in the rural areas. Also, the higher the number of years of education for the migrant, the higher is the chance that the migrant remits. This is in agreement with the results of Niimi et al. (2009). The age of the migrant influences the decision to remit positively. An older migrant is expected to have a family in the rural household and also a more reliable job. Therefore, the possibility of him/her remitting is also higher.

**Table 3: Determinants of remittances**

VARIABLES	Selection Equation		Outcome Equation	
	Coeff.	S.E.	Coeff.	S.E.
<b>Migrant Characteristics</b>				
Marital status	0.410*	(0.211)	0.0408	(0.0485)
Yrs of schooling	0.0649***	(0.0222)	0.00238	(0.00521)
Age	0.0651***	(0.0215)	0.00513	(0.00318)
Gender	-0.112	(0.162)	-0.00896	(0.0376)
Intent to return	-0.0198	(0.191)	-0.00713	(0.0460)
Child in city	-0.816***	(0.278)	-0.0923	(0.0696)
Child care	5.546***	(0.452)	0.158*	(0.0888)
Relation_close	-0.00628	(0.317)	0.134**	(0.0669)
Relation_distant	-0.625	(0.421)	0.154*	(0.0933)
Job_service	1.382***	(0.444)	-0.499*	(0.280)
Job_production	1.333***	(0.446)	-0.448	(0.279)
Bonus (log)	0.0180	(0.0161)	-0.0080**	(0.00375)
Saving	0.683***	(0.162)	-----	-----
Good life	0.376*	(0.213)	0.0574	(0.0617)
Stable income	-0.0420	(0.175)	0.00651	(0.0388)
Shock pvt	0.302*	(0.162)	0.00631	(0.0400)
Shock work	0.0242	(0.159)	0.0613	(0.0413)
<b>Household Characteristics</b>				
Yrs of schooling <sup>o</sup>	-0.000716	(0.0156)	0.00276	(0.00277)
Age <sup>o</sup>	-0.00304	(0.00733)	-0.00132	(0.00183)
Number of migrants	0.0162	(0.0603)	-0.00916	(0.0143)
Shock pvt	0.493***	(0.186)	-0.105**	(0.0489)
Shock work	-0.425**	(0.205)	-0.0482	(0.0537)
Shock weather	0.329**	(0.163)	0.0229	(0.0394)
Cope insurance	-0.425**	(0.202)	-0.0246	(0.0534)
Cope grants	-0.0313	(0.299)	0.0402	(0.0803)
Per capita consumption (log)	-0.196	(0.140)	-0.0297*	(0.0180)
Livestock value (log)	-0.0564**	(0.0224)	-0.00772	(0.00479)
Total land area	-0.0125**	(0.00584)	-0.00221*	(0.00122)
Vietnam	-0.292	(0.384)	-0.165**	(0.0797)
Constant	-1.486	(1.380)	1.102***	(0.368)
Observations	592		592	

Source: own calculations

<sup>o</sup> - variables specific to household head

Note: Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Interestingly, the gender of the migrant does not show any significant influence on either the decision to remit or the level of remittances. This is in contradiction to the findings of Vete (1995) and Orozco et al. (2006). Similarly, intent to return is also not significant in our analysis. Furthermore, if the migrant has a child in the city, the remittance decision is affected negatively. All of the variables mentioned above do not have a significant association with the level of remittance. However, if the migrant's young child is being looked after by the grandparent (Child care), it not only increases the likelihood of the migrant to remit but also positively affects the share of income sent to the rural household. This is an example of the demonstration effect that is mentioned by Cox et al., (1998). In addition, relationship variables of the migrant, both close and distant, positively influence the level of remittances.

The job profile of the migrant assumes great importance in our analysis. Working in the production sector positively associates with the decision of remitting but does not have any effect on the amount of remittances. However, if the migrant is involved in the service sector,

not only is he/she more likely to remit but also the levels of remittances are lower. There are a few features observed in the sample that can help to justify this result. Firstly, migrants engaged in the service sector earn more than their non-service sector counterparts. Secondly, a larger proportion of migrants, intend to stay in the city when engaged in the service sector. Lastly, service sector migrants are more likely to hail from wealthier households than non-service sector employees. The last point entails a theme that is visible throughout the analysis – migrants that come from wealthier households, tend to remit lower amounts. Another example in this regard is the anomaly displayed by the bonus variable. Interestingly, as the amount of bonus increases, the proportion of income remitted decreases. Again, bonus receiving migrants earn more than non-bonus receiving migrants and also come from wealthier households. This is plausible because wealthier households tend to be more secure and generally do not require huge monetary aid. Our identifying variable, savings is highly significant and influences the migrant's decision to remit positively. With respect to variables that capture the living conditions of the migrant, only good living conditions is significant. When a migrant feels that his/her life is better than when he/she lived in the village, the decision to remit is influenced positively. However, having a stable income has no such effect.

Amongst the shock variables, only private shocks are positively significant. If the migrant experiences a private shock, he/she is more likely to remit. As in our case family ceremonies are also considered under private shocks, the result does not seem unlikely. This reflects that migrants send remittances to provide financial support to the rural households in case of weddings, funerals, and other family functions. Work-related shocks are not significant.

Moving to household characteristics, years of schooling and age of the household head and the number of migrants in a household do not influence either the selection or the outcome equation. Nevertheless, all shock variables are significant in the model. If the household experiences a private shock, the migrant is more likely to remit but the levels of remittances are expected to be lower. Most private shocks reported are illness of a family member and death of a family member. These generally do not require much financial aid. A weather-related shock for the household entails a higher likelihood of remittances being transferred. On the contrary, when the household experiences a work related shock, the migrant is less likely to remit. Most work shocks reported by households are increase in input prices or decrease in output prices. These shocks generally entail short-term effects; however, the remittances we include in the regression are measured on an annual basis. We also include coping strategies in our analysis and find that when the household uses insurance or savings to cope with the shocks, the migrant is less likely to remit. No such effect is observed when the household uses grants to cope with the shock.

As the per capita consumption of the household rises, the migrant is less likely to remit. Similarly, the higher the value of livestock owned by the household, the lower the likelihood that the migrant would remit. Additionally, as the land area owned by the household increases, not only is the migrant's decision to remit altered negatively but also the level of remittances decreases. Interestingly, if the migrant is from the Vietnamese sample, the share of income remitted is lower.

### **5.3 Motivations of remittances**

The focus in this part shifts to inferring the reason why the migrant is remitting. To answer this question, we look again at the results of the basic regression. Table 4 shows the various

proxy groups and only the signs obtained after estimation. It should be mentioned that most studies use the relationship between the variable and the level of remittances to reach a conclusion. However, in our case we also include the relationship between the variable and the migrant's decision to remit. We believe that not only the level of remittances but also the decision to remit should be motivated by the same reason.

**Table 4: Motivations of remittances**

Variable	Outcome Equation	Selection Equation	Support for proxy group
<b>Proxy group: Altruism vs Self-interest</b>			
Per capita consumption	-		Yes – Altruism
Livestock value		-	Yes – Altruism
Land area	-	-	Yes – Altruism
Intent to return	insignificant	insignificant	
Number of migrants	insignificant	insignificant	
Shock pvt (hh)	-	+	Unclear
Shock work (hh)		-	No
Shock weather (hh)		+	Yes – Altruism
<b>Proxy group: Coinsurance</b>			
Per capita consumption	-		Yes – Coinsurance
Good life		+	Yes – Coinsurance
Shock pvt (migrant)		+	Yes – Coinsurance
Shock work (migrant)			
Shock pvt (hh)	-	+	Unclear
Shock work (hh)		-	No
Shock weather (hh)		+	Yes – Coinsurance
<b>Proxy group: Loan repayment</b>			
Per capita consumption	-		Yes – Loan repayment
Yrs of schooling (migrant)		+	Yes – Loan repayment
<b>Proxy group: Exchange motive</b>			
Per capita consumption	-		Yes – Exchange motive
Yrs of schooling (migrant)		+	Yes – Exchange motive
Child care	+	+	Yes – Exchange motive

Source: own construction

Note: Empty boxes indicate insignificant values.

For the first proxy group (altruism vs self-interest), we notice that the level of remittances is negatively related to all wealth variables – per capita consumption, value of livestock and land area. Therefore, as the wealth of the household increases, there is a decrease in the proportion of income remitted. In our sample, mostly poor households receive remittances. Hence, the relationship clearly suggests an altruistic motive. We find no significance for both the intent to return and the number of migrants. Household shocks are harder to examine as the signs alternate.

The Coinsurance proxy group also displays promising results. As mentioned earlier, per capita consumption is negatively related to the level of remittances which is in line with the motive. Additionally, if the migrant believes that his/her life has improved since he/she moved to the city, it also influences the decision to remit positively. A private shock experienced by the migrant also increases the probability of the migrant to remit. Both these features support the coinsurance motive. However, again, the shocks of the household do not present a clear case. Considering that the relationship of shocks and remittance behavior is the most important proxy to reach a decision on coinsurance, we are led to an indefinite conclusion. The Loan

repayment proxy group includes years of schooling of the migrant and, again, the per capita consumption. The years of schooling is positively related to the migrant's decision to remit. Keeping in mind that the increase in per capita consumption influences remittances negatively, the loan repayment motive also holds. However, this could also hint at altruism. Lastly, as the exchange motive comprises all proxies from the loan repayment group, it is harder to distinguish between the two. Therefore, we add childcare to the exchange motive proxy group and observe a positive influence of childcare on both the selection and the outcome equations. Interestingly, all proxies in this group match with the expected relationship signs.

Now that we have the results, there are two ways to look at it. Following Lucas & Stark (1985), we could assume that altruism, self-interest, tempered altruism and enlightened self-interest should be seen as separate strands of motivation. Under this case, it is not possible to reach a definite conclusion. Altruism, loan repayment and the exchange motive seem to motivate the sample. Another way to look at the situation is to consider that all motivations always require altruism and/or self-interest to make the agreements self-enforcing (Hagen-Zanker & Siegel, 2007). In that case, we observe that altruism demonstrates a stronger influence in our sample and hence can be assumed to be the major binding force. Thereafter, we can compare the agreements – coinsurance, the loan and the exchange motive. As household shocks do not present a clear picture and rather display an opposite relationship, we remove coinsurance from the options. The loan motive and the exchange motive have identical variables except child care which makes it harder to disentangle the two. Hence, we can conclude that loan repayment and/or exchange of services are the main motivations underpinned by altruism.

#### **5.4 Country comparison**

In order to perform a country comparison, we run separate regressions for Vietnam and Thailand. The results are shown in Table 5. We find that male migrants remit a lower share of their income in the Vietnamese sample, but this is not seen for the Thai sample. Considering that most studies based on Thailand (Vanwey, 2004) focus on gender, it is fascinating that we do not observe any significance for this variable in our Thai sample. We also find that while a Vietnamese migrant engaged in the production sector remits lower amounts, the Thai production sector variable has no significance. Our identifying variable, saving is again significant for both the countries. Additionally, a migrant who believes his/her living conditions improved after moving to the city is more likely to remit and also remits higher amounts in the Vietnamese sample. In the Thai sample, only the decision of remitting is positively influenced by this variable.

An interesting observation in the analysis of the Vietnamese sample is that the number of migrants in the household becomes significant. As the number of other migrants from the household increases, the likelihood of the migrant to remit increases but the amount remitted lowers. This could be interpreted as self-interest (Agarwal & Horowitz, 2002) if the remittance levels would have shown an opposite pattern. This relationship is not observed in the Thai sample. *Cope grants* which takes the value of 1 if the household uses grants from the Government or NGOs to cope against the shock is significant in the Vietnamese sample and influences the amount remitted positively. In contrast, *cope insurance* is statistically significant and negatively influences the decision to remit in the Thai sample. For both cases, land area and per capita consumption of the household have similar effects. As the land area and the per capita consumption of the household increase, the migrant is more likely to remit.

**Table 5: Country comparison**

VARIABLES	Vietnam				Thailand			
	Selection Equation		Outcome Equation		Selection Equation		Outcome Equation	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
<b>Migrant Characteristics</b>								
Marital status	0.0271	(0.453)	0.130	(0.0911)	0.272	(0.209)	0.0630	(0.0566)
Yrs of schooling	0.119***	(0.0366)	0.00279	(0.00545)	0.0279	(0.0292)	0.00456	(0.00621)
Age	0.0702*	(0.0415)	-0.0125	(0.00871)	0.0464**	(0.0196)	0.00727**	(0.00326)
Gender	0.112	(0.345)	-0.104*	(0.0587)	-0.0443	(0.203)	0.00224	(0.0491)
Realtion_ close	0.390	(0.625)	0.244**	(0.0955)	0.277	(0.245)	0.00215	(0.0685)
Job_production	0.0639	(0.329)	-0.108*	(0.0595)	0.0524	(0.196)	0.0509	(0.0512)
Bonus (log)	0.0302	(0.0303)	0.00854	(0.00524)	0.0290	(0.0184)	-0.00729	(0.00478)
Saving	1.012***	(0.315)			0.711***	(0.219)		
Good life	-0.798*	(0.450)	0.124**	(0.0561)	0.677***	(0.236)	0.116	(0.0786)
Shock pvt	0.522	(0.318)	-0.00113	(0.0664)	0.0924	(0.184)	0.0188	(0.0485)
Shock work	-0.208	(0.326)	0.123*	(0.0629)	0.0259	(0.192)	0.0428	(0.0536)
<b>Household Characteristics</b>								
Years of schooling <sup>o</sup>	-0.0109	(0.0368)	-0.00360	(0.00675)	-0.00702	(0.0175)	0.00276	(0.00330)
Age <sup>o</sup>	-0.00983	(0.0174)	-0.000301	(0.00414)	0.00688	(0.00833)	-0.000352	(0.00235)
Number of migrants	0.340***	(0.120)	-0.0538***	(0.0208)	-0.0348	(0.0728)	0.00809	(0.0198)
Shock pvt	0.0794	(0.329)	0.131**	(0.0629)	0.557***	(0.210)	-0.0976	(0.0684)
Shock work	-0.409	(0.371)	0.108*	(0.0631)	-0.384	(0.246)	-0.0216	(0.0787)
Shock weather	-0.0964	(0.274)	-0.0187	(0.0539)	0.374*	(0.200)	0.0302	(0.0548)
Cope insurance	0.234	(0.360)	-0.106	(0.0658)	-0.492**	(0.236)	-0.0416	(0.0742)
Cope grants	-0.220	(0.574)	0.275**	(0.122)	-0.219	(0.368)	0.0248	(0.110)
Per capita consumption (log)	0.198	(0.296)	-0.134**	(0.0571)	-0.249	(0.159)	-0.0398*	(0.0212)
Livestock value (log)	-0.0322	(0.0439)	-0.00781	(0.00605)	-0.0524**	(0.0246)	-0.0128**	(0.00629)
Total land area	-0.0400*	(0.0229)	0.000256	(0.00316)	-0.0112*	(0.00627)	-0.00207	(0.00149)
Constant	-2.990	(2.150)	1.311***	(0.398)	0.123	(1.426)	0.514**	(0.246)
Observations	159		159		442		442	

Source: own calculations

<sup>o</sup> - variables specific to household head

Note: Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The number of observations here is 601. When the model is executed with separate country data, there are lesser outliers.

## 5.5 Quartile comparison

The results shown in Table 6 aid to examine the fourth objective where we compare across the wealthier and poorer quartiles based on the households consumption per capita. It can be observed that years of schooling positively influence the decision to remit only in case of the poorer two quartiles. This stresses the importance of education for the more vulnerable sections of the society.

Gender of the migrant also presents a fascinating contrast. For the poorer quartiles, a male migrant remits lower amounts, whereas for the wealthier quartiles, males remit a higher proportion of their income. Looking at this from the motivations' perspective, this could indicate that males are self-interest oriented while females remit with an altruistic motive. Vanwey (2004) also makes similar observations in her study of Thailand. Furthermore, as the age of the migrant increases, the migrant is more likely to remit in all quartiles. Nevertheless, in terms of the amounts remitted, age is positively significant only for the upper two quartiles. This might be attributed to the fact that migrants hailing from wealthier households tend to be in engaged in more rewarding jobs and their incomes and stability increase with time. Hence, they are able to remit higher amounts compared to their poorer counterparts.

For the lower quartiles, a migrant employed in production or services is more likely to remit. This holds true for the upper quartiles as well. However, engagement in any of these two sectors lowers the level of remittances only in the case of wealthier quartiles. This resonates with the theme that migrants hailing from wealthier households remit lower amounts that was also observed in the basic regression results. The migrant shock variables have no statistical significance for the wealthier quartiles. However, for the poorer quartiles, the migrant remits more when he/she experiences a work-related shock. This is somewhat in line with Hagen-Zanker & Siegen (2007). Another difference is observed in the case of bonus. While for the lower quartiles receiving a bonus increases the probability that the migrant will remit, no such influence is observed for the upper quartiles. Our identifying variable, savings is highly significant in both the cases. If a migrant saves, he/she is more likely to remit.

While in the case of poorer quartiles, both private and weather shocks experienced by the household positively influence the migrant's decision to remit, wealthier quartiles display no such effect. This highlights the relevance of remittances for the more vulnerable who require external assistance to cope with shocks. Coping strategies that involve using savings and insurances is significant only in the case of poorer quartiles. A migrant is not only less likely to remit but also remits lower shares of the income if the household adopts borrowing as a coping strategy.

An increase in the livestock value decreases the likelihood of remitting in the case of both samples. Additionally, an increase in the per capita consumption of the household decreases the level of remittances only for the poorer quartiles again emphasizing the altruistic aspect. The Vietnamese migrant with a household in the poorer quartiles is less likely to remit, while the amount of remittances are lower if the household of migrant belongs to the upper two quartiles.

**Table 6: Quartile comparison**

VARIABLES	Lower two quartiles				Upper two Quartiles			
	Selection Equation		Outcome Equation		Selection Equation		Outcome Equation	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
<b>Migrant Characteristics</b>								
Marital status	-0.158	(0.300)	0.0865	(0.0692)	0.582**	(0.295)	-0.0575	(0.0699)
Yrs of schooling	0.132***	(0.0318)	-0.00500	(0.00606)	0.0353	(0.0276)	0.00348	(0.00707)
Age	0.0852**	(0.0349)	0.00439	(0.00404)	0.0536**	(0.0253)	0.00939**	(0.00425)
Gender	0.212	(0.269)	-0.131**	(0.0529)	-0.227	(0.221)	0.105*	(0.0549)
Intent to return	-0.421	(0.310)	-0.0596	(0.0603)	0.189	(0.251)	-0.000101	(0.0724)
Child in city	-1.101**	(0.428)	-0.0946	(0.113)	-0.720*	(0.402)	-0.0311	(0.0925)
Child care	6.444***	(0.993)	-0.0306	(0.103)	5.966***	(1.269)	0.390***	(0.135)
Relation close	0.218	(0.345)	-0.00922	(0.0763)	0.346	(0.374)	0.0292	(0.0728)
Job_service	1.311**	(0.653)	0.0119	(0.108)	1.103**	(0.497)	-0.595**	(0.298)
Job_production	1.134*	(0.664)	0.122	(0.115)	1.067**	(0.490)	-0.574*	(0.297)
Bonus (log)	0.0762***	(0.0275)	-0.00736	(0.00501)	0.0104	(0.0222)	-0.00770	(0.00555)
Saving	1.009***	(0.232)			0.676***	(0.212)		
Stable income	-0.186	(0.291)	-0.0373	(0.0536)	-0.115	(0.239)	0.0183	(0.0569)
Shock pvt	0.273	(0.292)	-0.0122	(0.0562)	0.0151	(0.247)	0.0282	(0.0592)
Shock work	-0.101	(0.276)	0.116**	(0.0567)	0.0784	(0.203)	0.00151	(0.0594)
<b>Household Characteristics</b>								
Yrs of schooling <sup>o</sup>	-0.0306	(0.0257)	0.00368	(0.00381)	0.00516	(0.0211)	0.00104	(0.00369)
Age <sup>o</sup>	0.00947	(0.0123)	0.000857	(0.00235)	-0.0117	(0.0104)	-0.00291	(0.00265)
Number of migrants			-0.0135	(0.0198)			0.00412	(0.0177)
Shock private	0.495*	(0.261)	0.0179	(0.0596)	0.237	(0.298)	-0.206***	(0.0672)
Shock weather	0.626**	(0.247)	0.0402	(0.0563)	-0.0999	(0.231)	0.0181	(0.0556)
Cope insurance	-0.555**	(0.280)	-0.139**	(0.0632)	-0.0829	(0.289)	0.00786	(0.0754)
Per capita consumption (log)	0.132	(0.101)	-0.0605***	(0.0207)	0.0382	(0.310)	-0.104	(0.0818)
Livestock value (log)	-0.156***	(0.0466)	-0.0101	(0.00699)	-0.0514**	(0.0259)	-0.00775	(0.00627)
Vietnam	-1.411**	(0.637)	-0.0182	(0.118)	0.514	(0.517)	-0.288**	(0.116)
Constant	-3.045*	(1.823)	0.778***	(0.299)	-2.517	(2.628)	1.899***	(0.681)
Observations	295		295		297		297	

Source: own calculations

<sup>o</sup> - variables specific to household head

Note: Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 6. Summary and Conclusion

Internal migrant remittances play an important role for rural households across the globe. The relevance is even higher for countries such as Vietnam and Thailand that have a high number of internal migrants. Hence, it becomes pertinent to examine all aspects of remittances. In this regard, there are two main questions – ‘who remits/who remits more’ and ‘why does the migrant remit/why does the migrant remit more’. These are answered by analyzing determinants and motivations of remittances, respectively. Most existing studies either deal with determinants or with motivations, with a few exceptions that look at determinants and casually touch upon the motivations.

Our study uses a data set from Vietnam and Thailand that combines a household survey with a migrant tracing survey for 2010. Using the Heckman model, we analyze both the determinants of internal migrant remittances and the motivations behind the remittances. We endeavor to answer four research questions.

First we analyze the determinants of internal migrant remittances. We find that migrant characteristics such as age, years of schooling and the marital status, significantly and positively influence the migrant’s decision to remit. Interestingly, contrary to existing studies, gender of the migrant and the intent to return home do not have any influence on the decision to remit and also on the level of remittances. Additionally, though being engaged in either the production or the service sector makes the migrant more likely to remit, a migrant employed in the service sector sends lower remittances home. We also find that characteristics of the household head have no significance in our model. Shocks experienced by the household present an unclear picture. While private and weather-related shocks positively influence the migrant’s decision to remit, work-related shocks display the opposite pattern. Furthermore, if the household uses savings and insurance to cope with the shock, the migrant is less likely to remit. Overall, the wealth of the household negatively influences the decision to remit and the proportion of income remitted.

We examine the motivations of remittances as our second question. We are unable to identify one specific motivation. This gives further impetus to the fact that remittances can be motivated by many motivations. In our case, altruism is the underlying force while, both, the loan repayment and exchange motive, show the most promising results.

In order to address our third questions, we perform country-specific regressions for Vietnam and Thailand and compare the results. Some features stand out. In the Vietnamese sample, males remit less than females. The number of migrants also becomes significant in case of the Vietnamese sample. As the number of migrants from a rural household increases, the migrant is more likely to remit but sends lower amounts. These features are not seen in the Thai sample. Lastly, in the Thai sample if the household uses savings and insurances, the migrant is less likely to remit, while in the Vietnamese sample if the household uses grants from the Government or NGOs to cope, the migrant remits more.

Lastly, under the fourth question, a quartile comparison (based on the per capita consumption of the households) between the lower two and upper two quartiles also provides interesting insights. Firstly, males remit lower than females in the poorer quartiles while males remit more than females in the wealthier quartiles. Additionally, if a migrant from the lower quartile household experiences a private shock, he/she remits more. The same is not seen in the case of wealthier quartiles. An increase in the per capita consumption of the origin household

entails a decrease in the level of remittances for the poorer two quartiles. Again, no such influence is witnessed for the upper two quartiles.

Additionally, there are also two specific themes that stand out and are manifested in many results. We find that migrants who hail from wealthier households remit a lower share of their income. This also provides further support to the inference of altruism as a binding force. Also, migrants that come from poorer households, tend to remit more when faced with a shock.

The results also have policy relevance. Firstly, the study highlights the importance of education especially for the poorer strata. Secondly, jobs in certain sectors entail higher remittances. This needs to be considered while framing tax regulations and encouraging special sector job participation. Thirdly, the comparison across countries shows that it is not correct to look at all nations through the same policy lens. In our case, Vietnam and Thailand show different characteristics for certain variables. Lastly, the quartile analysis illustrates the importance of remittances in case of the poorer origin households when faced with shocks.

To conclude, this study aims to present an all-round analysis of the heterogeneity of internal migrant remittances. Though we are able to provide some interesting insights, the study has some limitations. Firstly, we are only able to provide an analysis of motivations for the whole sample and not individual migrants. This issue could be solved by the use of a panel data set and is something that could be taken up by future researchers. Additionally, to lend more character to the motivations section, interdisciplinary research could be encouraged. Considering that remittances affect the social and economic framework of most countries, a deeper understanding of this phenomenon can lead to better focused migration policies.

## 7. References

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## 8. Appendix

### 8.1. Falsifying test to check validity of instrument (saving):

Wald test is executed on saving after each equation estimation

#### Probit- outcome equation:

$$F(1, 479) = 0.76$$

$$\text{Prob} > F = 0.3822$$

#### OLS – selection equation:

$$\text{chi}^2(1) = 14.92$$

$$\text{Prob} > \text{chi}^2 = 0.0001$$

### 8.2: Proxy groups

Variable	Used by
<b>Proxy group: Altruism vs Self-interest</b>	
Per capita income*	Lucas & Stark (1985)
Livestock value	Created by authors
Land area	Hoddinott (1994)
Intent to return	Lucas & Stark (1985)
Number of migrants	Agarwal & Horowitz (2002)
Shock pvt (hh)	Lucas & Stark (1985)
Shock work (hh)	
Shock weather (hh)	
<b>Proxy group: Coinsurance</b>	
Per capita income*	Lucas & Stark (1985)
Good life	Created by authors
Shock pvt (migrant)	Agarwal & Horowitz (2002)
Shock work (migrant)	
Shock pvt (hh)	Lucas & Stark (1985)
Shock work (hh)	
Shock weather (hh)	
<b>Proxy group: Loan repayment</b>	
Per capita income*	Lucas & Stark (1985)
Yrs of schooling (migrant)	Poirine (1997)
<b>Proxy group: Exchange motive</b>	
Per capita income*	Lucas & Stark (1985)
Yrs of schooling (migrant)	Poirine (1997)
Child care	Created by authors

Source: own construction

\* We use per capita consumption to account for wealth as it captures wealth better than per capita income in developing countries.