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Rural-urban migration, welfare and employment: Comparing results from Thailand and Vietnam

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Rural-Urban Migration, Welfare and Employment:

Comparing Results from Thailand and Vietnam

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Abstract

This paper compares empirical findings on the motivation and welfare impacts of rural-urban migration from two comprehensive case studies conducted in Thailand and Vietnam. Panel data of around 4,000 rural households and tracking surveys of close to 1,000 migrants are used from the two countries. The studies find that outcomes depend to a large extent on the development status of the country. Rural households consider outmigration mostly as a livelihood support strategy. Given the scarcity of employment opportunities in the rural areas, migrants see themselves forced to look for jobs in the cities. Interestingly, most migrants perceive themselves to be better off in the cities. The rural households left behind benefit from migration as the remittances tend to have positive income growth effects. The research confirms the calls for improved social protection for migrants in urban areas and for quality schooling in the rural areas.

Keywords: Migration, poverty, livelihoods, employment quality, Vietnam, Thailand
JEL: O15, Q56, R23

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1. INTRODUCTION

Rural-urban migration has become an important livelihood support strategy for rural households to increase their income and to reduce income fluctuation through remittances (Stark & Bloom, 1985). Migration does not only allow rural households to diversify their livelihoods and smooth their consumption, it also allows them to save for precautionary purposes, or join mutual support networks (Dercon, 2002; Phung & Waibel, 2009; Newman & Wainwright, 2011). It further helps them to overcome the adverse welfare effects of social, economic, and institutional constraints in their places of origin (Ezra, 2001; Tongruksawattana et al., 2010).

However, many migrants in search of better income opportunities cannot improve their living conditions. This is partly explained by the lack of knowledge and the limited experience when living in large cities. In addition, a poor implementation of labor laws (Le et al., 2011), or the limited access to affordable health care services (UNFPA, 2010) make the migrants vulnerable in their destinations. The 2008 global economic crisis aggravated the vulnerability of migrants. Some migrants stopped sending remittances or returned to their households at the place of origin (Oxfam & VASS, 2010).

This paper compares insights from two case studies on the motivation and welfare effects of rural-urban migration in Thailand and Vietnam. Both countries performed very well with respect to economic growth and poverty reduction in the past. In Thailand, the Gross Domestic Product per capita amounted to PPP$ 14,394 in 2013, whereas in Vietnam, it reached PPP$ 5,294 (World Bank, 2014). Accordingly, the two countries differ in their development status making it an interesting comparison. The poverty rate dropped in both countries below 10%. At the same time, an exponential increase in the movement of people within and across borders occurred. But while Thailand has a long history of rural-urban migration, in Vietnam, migration plays an important role only since the “Doi Moi” reforms in

1986. In 2009, the rate of rural-urban migration was estimated to amount to around 9% in Vietnam. Most of the migration was directed especially to cities or provinces with high levels of industrialization and a great demand for labor (Cu, 2005; Dang et al., 2003).

The literature on the motivation and welfare effects of rural-urban migration is still sparse and inconclusive. Past studies on Thailand and Vietnam relied on data sets that are not appropriate for studying migration. The Vietnamese Household Living Standard Surveys for example include only officially registered migrants, being for at least six months in the destination area, in the sample. Excluding the unregistered migrants and also ignoring temporary migrants underestimates any migration trends and figures (Pincus & Sender, 2008). In the case of Thailand, official statistics from the United Nations suggest that in the year 2000, only 20% of the Thai population lived in urban areas (Yap, 2002). This was because many migrants in Thailand did not change their civil registration status and therefore counted as rural residents. In Vietnam, the household registration system is similarly complex. Niimi et al. (2009) suggest that it may even reduce the benefits from migration by constraining the access to basic public services such as education or health, services in the absence of registration.

Our two case studies use panel data of around 4,000 rural households from Thailand for the period 2008-2010 and from Vietnam for the period 2007-2010, respectively. In addition, tracking surveys were conducted in 2010 of 650 migrants in the Greater Bangkok area in Thailand and of 299 migrants in Ho Chi Minh City, Vietnam. Similar methods were applied in the two countries to estimate the motivation and welfare impacts of rural-urban migration.

The paper is structured as follows: A review of the literature, along with the conceptual framework, is presented in the following section. Data collection methods and empirical methods are described in the third section. The fourth section presents and discusses the empirical results, and section five summarizes and concludes.

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Theoretical literature

The theoretical literature provides a good framework for identifying factors that help to determine the success of migration. Ravenstein (1885, 1889) was one of the first who linked migration patterns to conditions of labor force surpluses and deficits, with people moving from surplus to deficit labor areas in order to improve their living conditions. In his "laws of migration", he developed the idea of the "push" and "pull" factors in order to explain the driving forces of migration. While push factors are incentives at the place of origin such as insufficient job and employment opportunities, insecurity regarding political, social, or economic conditions, or the loss of wealth, that motivate people to outmigrate, pull factors are socio-economic, political or environmental incentives at the place of destination, including job opportunities, or better education and living conditions (Lee, 1966). Harris & Todaro (1970) developed their wage differential hypothesis suggesting that the rural-urban divide would decrease over time. Sjaastad (1962) and Todaro & Maruszko (1987) considered migration as an investment in human capital. On the cost side, they included travel costs, costs of job search and training, along with psychological costs. Benefits were the expected wage differential, as well as nonmarket benefits such as access to health care systems. Massey (1990) pointed at the positive link of migration with social capital, meaning that the existence of functioning social networks among migrants, non-migrants or return migrants can be counted as benefits. Stark & Bloom (1985) defined migration decisions as joint family decisions, meaning that households jointly decide on the migration of selected household members so as to maximize and smooth household income and ensure sustainable livelihoods through the diversification of labor. In sum, migration theory suggests that migration is an important livelihood strategy and that it should lead to a declining wage gap between rural and urban areas in the longer run.

2.2 Empirical literature

The empirical evidence only partly supports the theory. On the factors motivating migration it confirms that the wealth and education levels play a major role. Agesa & Kim (2001) used data from Kenya to show that skilled workers are more likely to migrate to urban areas. Another study from Kenya pointed out that the decision to migrate depends on education and migrant networks, but not on household wealth (Giesbert, 2007). Ezra (2001) found for Ethiopia that individuals belonging to economically poor households in ecologically vulnerable communities have a higher propensity to outmigrate than those from less vulnerable regions. UNFPA & GSO (2005) revealed that the majority of migrants move because of economic reasons (see UNFPA, 2010). This is also supported by Dang et al. (2003) and Niimi et al. (2009), both arguing that rural outmigrants shifted to urban areas to benefit from increased economic opportunities.

Only few studies investigated the working and living conditions of migrants in the cities. Shah (2000) showed that human and social capitals are the main factors contributing to the success of migrants. Akay & Zimmermann (2011) found that the well-being of migrants in China positively depends on the length of the migration period, the quality of working conditions, and the existence of community ties. Niimi et al. (2009) pointed out that although the dominant share of migrants feels better off and sends remittances to their families, migrants in Vietnam face many problems in the destination area such as with complex household registration systems. Furthermore, even though incomes increase after migration, the average incomes of migrants are still lower than the incomes of the local residents in the destination areas. In addition, many migrants are employed on a temporary basis without formal labor contracts or social protection.

Finally, several empirical studies analyzed the welfare impact of migration on the rural households. Azam & Gubert (2006) found that rural households in Mali and Senegal who

received remittances reduced their work effort; this decreased the effectiveness of migration as poverty reduction instrument. Lipton (1980) pointed out that rural-urban migration tends to increase inter-household inequality within and between villages. Similarly, Rodriguez (1998) confirmed for the Philippines that migration increases inequality, whereas Brown & Jimenez (2008) found that remittances decrease poverty in Fiji and Tonga but with little impact on inequality. Evidence from Thailand suggested that migration reduces income inequality mainly through changes in the distribution of productive assets (Garip, 2010). De Brauw & Harigaya (2007) found evidence from Vietnam that migrant households' expenditure levels exceed those of non-migrant households by approximately 5%. Nguyen et al. (2008) found that migration positively affects household expenditures, while at the same time increasing the degree of income inequality in rural areas. Nguyen et al. (2009) confirmed the positive household expenditure effects of migration, but also reported a slight decline in poverty and inequality.

A look into the national statistics of Thailand and Vietnam suggests that both countries have high rural-urban divides. In the case of Vietnam, this divide has even increased over time, while it slightly decreased in Thailand (World Bank, 2007). The question remains whether migration results in a declining welfare gap between rural and urban areas in the long run.

Overall, the empirical evidence on the motivation and welfare impacts of migration is still quite diverse and inconclusive. The remainder of this paper therefore compares the evidence from Thailand and Vietnam on the three research questions: (i) to what extent do shocks motivate rural household members to move to urban areas? (ii) are migrants in the new urban settings better off in terms of working conditions and quality of life? (iii) what is the effect of migration on rural household's welfare and vulnerability to poverty?

3. DATA AND METHODOLOGY

3.1 Data

The study is based on household data collected in the context of the DFG FOR 756 Research Grant project "Vulnerability to poverty in Thailand and Vietnam" [1]. The questionnaires for the household survey were the same in both countries and covered a broad set of questions regarding the socio-demographic and economic conditions of the sampled households. Quantitative information was collected on the migration experience of the household members, the composition of the income portfolio of the household, its borrowing and lending patterns, and on the exposure to different kinds of shocks. In addition, village heads were interviewed to collect general information about their village such as village population, employment structure, infrastructure characteristics, and resource use patterns.

In Thailand, the surveys were conducted in three provinces, namely Buriram, Nakhon Phanom, and Ubon Ratchathani. All three provinces belong to the northeastern region, still considered the "poverty pocket" of Thailand (Healy & Jitsuchon 2007). In Vietnam, the surveys were conducted in the three provinces Dak Lak, Thua Thien Hue, and Ha Tinh. For Thailand, the panel data refers to the two years 2008 and 2010, while for Vietnam, three years of the panel data were used, namely 2007, 2008 and 2010. In each country, 2,200 rural households were selected in a three-stage sampling design with district, subdistrict, and village classifications. In the case of Vietnam, households with migrants in 2007 are dropped from the sample to avoid endogeneity problems; a household member may have migrated out already in 2007, so that the household could have benefitted from remittances having an effect on the "per capita income" variable. The remaining sub-data set consists of about 1,711 households. Of these, a further 158 rural-rural migrant households are dropped since our analysis focuses on rural-urban migration.

[1] http://www.vulnerability-asia.uni-hannover.de/

The migrant[2] surveys were designed as tracking surveys in which the respondents are migrant household members of the rural households that were interviewed in parallel in the rural and in the urban location, respectively. Questions addressed the migration history, the shocks, risks and socio-economic situation of migrants in the destination area, and the type and nature of links between the migrants and their rural households. Since over 80% of all migrants from the northeastern region of Thailand move to Bangkok or its surrounding areas (NSO, 2008), the survey was limited to the Greater Bangkok metropolitan area including the surrounding provinces of Samut Sakhon, Samut Prakan, Samut Songkhram, Nonthaburi, Nakhon Pathom, Pathum Thani, Ayutthaya, Saraburi, Nakhon Nayok, Chachoengsao, and Chonburi. In Vietnam, the migrant survey was implemented in Ho Chi Minh City and its two surrounding and highly industrialized provinces Dong Nai and Binh Duong which have the highest rates of net migration (UNFPA, 2010). Because the majority of migrants work in the informal sector and frequently change their contact details, 643 out of nearly 1,100 migrants were interviewed in Thailand and 299 out of 600 migrants in Vietnam.

3.2 Methodology

The estimations are based on three models, one for each research question. The first model investigates the factors that influence the decision of a rural household to send one of more members to the cities. This analysis involves the estimation of probit regression specifications. The migration literature helps to identify the relevant factors, which also need to be included in the model. Next to economic variables (income, wealth), also socio-demographic characteristics (human capital of household, age), location (access to information), and risk diversification have been identified as main drivers of rural-urban migration.

[2] A migrant is defined as a household member having lived outside of the village for at least one month in a year.

The second model analyzes the factors affecting the welfare of migrants in the cities. First, an employment quality index (EQI) is constructed which combines information from a set of subjective and objective indicator variables. The subjective ones indicate whether migrants perceive their 1) income to be stable, 2) working conditions to have improved since their last job, and 3) living conditions to have improved since they have left the rural area. The objective ones specify whether migrants have 1) accumulated savings, 2) above average income levels, and 3) a written employment contract. The EQI assumes values between zero and one, with employment quality being better for larger values. Then, a linear regression model is used linking the EQI to a set of individual characteristics of the migrant and characteristics of his or her rural household. The characteristics of migrants include gender, age, education level, the length of migration period, the type of job, job characteristics, and the way of getting the job. Household characteristics cover the loss from shocks that a household might have faced. Variables related to ethnicity and whether a household belongs to a political or social organization are also added to the model.

The third model seeks to quantify the effect of migration on rural household welfare. It estimates first the average treatment effect on the treated (Heckman & Navarro-Lozano, 2004); the treatment refers to the household's migration status and the treatment effect arises by comparing the outcome of households with migrants against that of households without migrants. Since it is impossible to compute the outcome of the migrant household in case no one migrated, as this variable is unobserved, this paper employs the method of the Propensity Score Matching (PSM). However, the standard PSM method controls for selection on observable variables, but cannot account for unobserved variables and their simultaneous effect on the probability of migration and the outcome variable (Rosenbaum & Rubin, 1983). We therefore use the difference-in-differences method with PSM to eliminate the effect of unobserved (time-invariant) variables on the outcome variable (Smith & Todd, 2005). This

approach also helps to address the endogeneity problem that usually precludes the identification of the outcome effects of migration, namely household income growth for indicating the change in household welfare.

4. RESULTS AND DISCUSSION

This section presents and discusses the comparative results from Thailand and Vietnam. The first subsection provides evidence on the factors driving migration. The second one discusses the employment quality index and identifies the factors that influence employment quality. Subsection 3 presents the evidence on the effect of migration on rural household welfare.

4.1 Explaining the household's migration decision

Table 1 shows the comparative results of the probit model (1) identifying the factors which influence the household's migration decision. The summary statistics of the model's variables are presented in Appendix Tables 1 and 2.

(insert Table 1 here)

Considering the socio-demographic household characteristics, the propensity of migration significantly increases with the age of the household head in Vietnam. Thus, the older the household head, the more likely his or her member(s) migrate out to find employment. In Thailand, the age variable is defined as the mean age of the household. It is also statistically significant but it has a different sign, indicating that relatively younger households are more likely to have migrant members. This difference is not conflicting but can rather be explained by the definition of the age variable. The migrants in Thailand are typically between 20 and 35 years of age; in Vietnam, the average age of a migrant is 25 years. Moreover, the propensity of migration significantly decreases with the relative number of household dependents. This finding is true for Thailand and Vietnam suggesting that the propensity to

migrate is higher in households that are characterized by a larger share of productive laborers. The gender of the household head does not have any significant effect on the migration decision in both countries. With respect to education, it appears that the probability of migration increases with the share of household members with completed primary, secondary and above secondary schooling in Thailand. In Vietnam, the probability of migration increases with the share of household members with completed secondary education. The share of household members who completed high school or professional training only becomes significant when focusing on the migrants who solely move for education reasons. This means for both countries that migration for employment does not necessarily require a higher education level – in Vietnam, indeed 44% of all migrants lack secondary school qualifications - , but it is consistent with the predictions of migration theory, that migration depends on the level of human capital. Cherdchuchai & Otsuka (2006) also support this result for Thailand. For Vietnam, households with membership in political or social organizations display a larger propensity to migrate but it is only statistically significant at 10%; for Thailand, this was not tested. As regards the measures of household wealth, in Thailand, households with higher per capita incomes are less likely to be engaged in migration. So, generally, it is the poorer households who tend to have migrants. In the case of Vietnam, the income variable is not significant, however, it has to be considered that a quarter of all rural households with migrants looking for a job were classified as poor in 2007. These observations support the idea that in both countries, households opt for migration as a livelihood strategy to increase their income via remittances. For Thailand this is supported by the positive and statistically significant sign for the variable “income from remittances”. In Vietnam, households with more land per capita are less likely to be migrant households because they need more laborers for agricultural production. For Thailand, such a relation cannot be found; “land per capita” and “log wealth per capita” are insignificant. This might be

partly explained by the more important role of agriculture in Vietnam as compared to Thailand. In 2013, the agricultural value added as a share of the Gross Domestic Product amounted in Thailand to 12%, whereas in Vietnam, it reached some 18%[3]. But this also relates to the observation that in Vietnam, agricultural and economic shocks play a larger role, whereas in Thailand migration is triggered by demographic shocks such as illness or death of a household member. Agricultural shocks include floods, droughts, crop pests or livestock diseases, whereas economic shocks relate to job loss, collapse of business, strong increase of input prices, or strong decrease of output prices. Due to climate change and price fluctuations in the context of rapid liberalization and reform processes, rural households depending largely on agriculture face more substantial income variability in Vietnam. Considering indebtedness, there is no significant effect observable; only when focusing on migration for employment, this variable turns significant. Especially rural households thus send a migrant out expecting that remittances will facilitate the repayment of their outstanding debts. In this case, migration is more likely a desperation strategy; this is especially true as 75% of all Vietnamese migrants are from rural households with financial debts.

Finally, the household's decision to migrate is in Thailand influenced by some village characteristics such as distance to other public infrastructure, time to reach the market or the hospital. While the first two variables are significant and negative, the latter one is positive. This may indicate that the better health care is a pull factor for migration. In Vietnam, the village road condition was considered next to the distance from village to district headquarters. In the latter case, households have a higher propensity to send members to migrate. Moreover, migration does depend on unobserved provincial effects. In Thailand, households from Buriram province are less likely to have migrants, whereas in Vietnam, households from Ha Tinh province are more likely to be involved in migration. When solely

[3] http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS

focusing on the households with migrants for employment, also the sign for Thua Thien Hue province becomes statistically significant. This is in contrast to households from Dak Lak province where the coffee sector provides plenty of job opportunities. Consistent with the argument of UNFPA (2010), this may reflect cross-province differences in economic development and cross-province dissimilarities in employment prospects and income opportunities.

4.2 Assessing the well-being of migrants in the destination areas

Subjective and objective indicator variables are used to measure the working and living conditions of migrants in urban areas. For Vietnam, these indicator variables are separately reported for migrants who are working in industry, production, and in the service sector; for Thailand, the aggregated figures are presented.

(insert Table 2 here)

According to the subjective indicator variables, the majority of migrants perceive their income to be stable and report improvements in working and living conditions. This result is consistent across the two countries. Considering the objective indicator variables, there are significant country-specific differences. In Thailand, 80% of all migrants indicate to have savings. In Vietnam, 50% of all migrants in the service sector report savings compared with only 30% working in industry and production. This sectoral effect is consistent with the observation regarding the higher daily wage in the service sector. The country-specific differences between Thailand and Vietnam can be explained by the higher development status of Thailand and the higher average per capita incomes of the population. Furthermore, it has been found that in Thailand, only 24% of all migrants indicate that they have a written and unlimited contract. In Vietnam, roughly every second migrant has a written employment contract. The difference between the two countries may be explained by the length of the

contract; for Vietnam, it was not specified whether the written contract is also unlimited. A written employment contract influences working and living conditions as it provides migrants' access to social protection programs (see also GSO & UNFPA, 2005; UNFPA, 2010; Oxfam & VASS, 2009). Approximately 40% of the surveyed migrants report income levels above the sample average in Thailand; in Vietnam, this is every second migrant.

Finally, the indicators from Table 2 are used to construct a composite employment quality index (EQI) for the sample of wage-employed migrants, which account for 78% of all migrants in the destination areas. The aggregate EQI is slightly skewed to the left, suggesting that a relatively larger share of migrants is somewhat very satisfied with the living and working conditions in the urban destination area.

Table 3 summarizes the estimation results based on three alternative sets of independent variables. In the first alternative set, all variables are included. Since the variables "length of the migration period" and "age" are correlated, one of the two variables is removed in the second but included in the third alternative set, and vice versa. The results show that on the one hand, migrants being female, better educated, older, and with longer migration periods are more likely to report a higher objective EQI. This means that they are more likely to have accumulated savings, above average income, and a written employment contract. On the other hand, indebtedness and the way they got the job do not statistically affect their objective EQI. Having to pay for a job does not seem to guarantee a higher objective EQI as indicated by the negative sign.

(insert Table 3 here)

The gender effect reflects the fact that women have more stable and predictable working relations. Indeed, around 60% of the female migrants have a job with a written contract, as compared to 40% of the male. The gender effect may also reflect the different spending behavior. In fact, the descriptive information confirms that female migrants generally have

higher savings than their male counterparts. The gender effect, however, does not reflect above average incomes, as women are paid lower salaries as compared to men (Appendix 3).

In general, the types of jobs being conducted by female and male migrants in the city are very diverse. 54% of all women work in industry/production, mainly in weaving, but also in textile and electronics factories that are more likely to provide written contracts and stable employment. The remaining 46% women work in the service sector in jobs like as accountant in banks (14%), tailor (7%), waiter, sales person, hairdresser, or cleaner/housemaid. In comparison, only 37% of all men work in industry/production also including the weaving sector (12%) and to very small shares also in electronics and textiles factories. Otherwise, men are more likely to be employed in the service sector like as security guard, technician, electrician, plumber, or as sales person.

As regards the set of household characteristics, the objective EQI is lower for employed migrants belonging to households with higher income losses due to shocks in 2010. These migrants are more likely to work in unstable working relations, without any contracts, and in lower paid jobs not allowing them to accumulate any savings. The findings also reveal that ethnicity does not have any significant influence on the objective EQI. This result is also not surprising as 96% of all interviewed migrants belong to the majority ethnic group Kinh or Hoa (Vietnamese or Chinese).

4.3 Effect of migration on rural household welfare

The evidence suggests that 1) migration is partly attributable to household-specific economic factors, and 2) migrants do not fare equally well in terms of living and working conditions in urban destination areas. Against this background, this section presents the results on the

impact of migration on rural household welfare from difference-in-difference estimations with propensity score matching.

(insert Table 4 here)

Summarized in Table 4, the results for Thailand and Vietnam show a large positive and significant effect of migration on rural households' income growth at least during the period 2007-2010. Dependent on the matching method (Kernel or Nearest-Neighborhood), households' income in Vietnam increased by 20-27% and in Thailand by 17-22%.

In Thailand, the income growth effect is statistically significant at the 5% level in Ubon province and at the 10% level in Buriram province. In Vietnam, the income growth effect of migration is particularly pronounced for households from Ha Tinh province, while no significant effects exist for households from Thua Thien Hue and Dak Lak province. This result points to the importance of migration as source of income growth in structurally weak provinces with poor employment and job opportunities (cf. UNFPA, 2010 and GSO, 2011)[4].

5. CONCLUSIONS

This paper investigated the interaction of shocks, the vulnerability to poverty and welfare of rural households and rural-urban migrants in Thailand and Vietnam. It provides responses to the three questions: (1) To what extent do shocks motivate rural household members to move to urban areas? (2) Are migrants in the new urban settings better off in terms of working conditions and quality of life? (3) What is the effect of migration on rural household's welfare and vulnerability to poverty? The analyses are based on 1) a rural household panel data set from three provinces in Thailand and Vietnam, respectively, and 2) a tracking migrant survey from the Greater Bangkok area in Thailand and around Ho Chi Minh City in Vietnam.

[4] The number of outmigrants from Ha Tinh province is significantly higher than from Thua Thien Hue and Dak Lak provinces (GSO, 2011).

To explore the first question on the motivation of migration, probit models are estimated. 92% of all migrant households indicate employment opportunity and education to be the two main pull factors in Vietnam. In Thailand, around 60% of all migrants indicate that they need to search for a job, but also 18% mention that they want to follow their family. This difference shows that the migrants in Thailand are likely to find a social network in place in the city. In Vietnam, more people migrate because of lacking opportunities in the rural areas. Along the same line, the empirical evidence suggests that rural-urban migration for employment is a livelihood support strategy for households coping with agricultural and economic shocks like droughts, floods or loss of job, or with financial debts in Vietnam. Rural households who are engaged in off-farm activities try to involve their family members in these activities at home. Similarly, the probability of migration decreases for households with large landholdings, or being engaged in agricultural production since the rural households seem to prefer using them as their own laborers as compared to hiring laborers. In general, the probability of migration decreases with the employment opportunity in the village, as evidenced e.g. for Dak Lak province with plenty of jobs available in the coffee sector, as compared to Ha Tinh and Thua Thien Hue province. This finding suggests that encouraging rural labor market development can reduce rural-urban migration. In Thailand, the probability of migration is triggered by demographic shocks. …

With respect to the second research question, the descriptive and econometric results show that migration coincides with general improvements in the living and working conditions of wage-employed migrants in the urban destination area in Vietnam. Nevertheless, explicit training and wage standards might be useful instruments for still improving migrant´s situation in the urban areas. Migrants being female, better-educated, older and, with longer migration periods are more likely to report a higher objective employment quality index. However, households' income losses due to shocks may negatively affect a migrant´s

situation in the city. Thus, savings schemes could be a useful instrument for smoothing income fluctuations e.g. from shocks across all groups of migrants as well as across migrant households in rural areas.

As regards the third question on the effect of migration on rural household's welfare, the results from difference-in-difference specifications with propensity score matching techniques suggest that migrant households directly benefit from migration through positive income growth effects in Thailand and Vietnam. These effects help not only migrant households moving out of poverty, but they also improve the poverty situation in rural areas in general. Thus, also non-migrant households seem to indirectly benefit from remittances of migrant households.

Table 1: Determinants of the household migration decision (probit regression)

Variables	Thailand		Vietnam	
	Coef.	**Std.Err.**	**Coef.**	**Std.Err.**
Female headed HH (1-Yes, 0-No)	0.09	0.07	-0.146	0.122
Mean Age of HH/Age of HH head (years)	**-0.30*** **	0.03	**0.016*** **	0.003
Share of HH members w/ completed primary school	**0.14*** **	0.01		
Share of HH members w/ completed secondary school	**0.05*** **	0.00	**0.178*** **	0.044
Share of HH members w/ completed high school or professional education	**0.09*** **	0.02	0.041	0.039
HH members belong to polit./social organiz.(1-Yes, 0-No)			**0.187***	0.109
Dependency ratio[†]	**-0.09*** **	0.03	**-1.553*** **	0.216
Log total income per capita (PPP $ in 2005)	**-0.05*** **	0.02	0.042	0.046
Income from Remittance	**0.28*** **	0.08		
HH engaged in off-farm activities (1-Yes, 0-No)			-0.073	0.087
Land per capita / Log of land per capita (hectare)	0.03	0.04	**-0.091*** **	0.034
Log wealth per capita / HH is indebted (1-Yes, 0-No)	-0.01	0.08	0.032	0.098
Village road condition (1-Good condition, 0-Bad condition)			-0.143	0.112
Time to reach the hospital	**0.13** **	0.06		
Time to reach the market	**-0.23***	0.13		
Distance to other public infrastructure (log)	**-0.27*** **	0.09		
Log distance from village to district headquarter (km)			**-0.209*** **	0.053
Ubon province	0.09	0.10		
Buriram province	**-0.05***	0.03		
Ha Tinh province (1-Yes, 0-No)			**0.535*** **	0.142
Thua Thien Hue province (1-Yes, 0-No)			0.253	0.155
HH experienced demographic shocks (1-Yes, 0-No)	**-0.15** **	0.06	0.108	0.084
HH experienced health / social shocks (1-Yes, 0-No)	-0.02	0.06	0.096	0.180
HH experienced agriculture shocks (1-Yes, 0-No)	0.04	0.07	**0.146***	0.087
HH experienced economic shocks (1-Yes, 0-No)			**0.273***	0.159
Constant	-0.38	0.61	**-1.836*** **	0.310
Number of observations	**2,096**		**1,432**	
LR chi^2 (24) / Wald chi^2(18)	**501.58**		**231,09**	
Prob>chi^2			**0.00**	
R^2 / Pseudo R^2	**0.18**		**0.16**	
Log likelihood / Log pseudolikelihood	**-1,178.54**		**-582.86**	

Note: In case, two variables are specified in one line, the first label refers to Thailand and the second one to Vietnam; ***significant at 1%, **at 5%, *at 10%.

Source: Compiled from Amare et al. (2012) and Nguyen et al. (2013) based on the DFG Rural Household Survey.

Table 2: Migrants' working and living conditions (% of total)

	Thailand	Vietnam	
	Across all sectors	**Industry/ production sector**	**Public/ private service sector**
Subjective assessments			
Income is stable	60	72	71
Working conditions have improved	80	68	74
Living conditions have improved	76	86	86
Objective assessments			
Migrant has accumulated savings	80	32	50
Migrants with above average income[†]	40	52	52
Migrants have written employment contract[††]	24	56	48

Note: [†] Average income is computed across all migrants with employment in either the industry and production or service sector.
[††] For Thailand, the contracts are also unlimited.

Source: Compiled from Amare et al. (2012) and Nguyen et al. (2013) based on the DFG Migrant Survey 2010.

Table 4: Difference-in-difference estimates of the impact of migration on household income growth

Outcome variables	Treatment	Control	Difference in average outcomes ATT
Thailand			
Income growth (Kernel)	1.28	1.10	0.17***(2.87)
Income growth (Nearest-Neighborhood)	1.28	1.06	0.22***(2.88)
Vietnam			
Income growth (Kernel)	0.56	0.36	0.20*(0.09)
Income growth (Nearest-Neighborhood)	0.55	0.28	0.27*(0.11)
By province categories (Kernel)			
Thailand			
Ubon province (Kernel)	1.90	1.43	0.47**(2.15)
Buriram province (Kernel)	1.02	0.67	0.35*(1.93)
Nakhon Phanom (Kernel)	0.61	0.26	0.35(1.52)
Vietnam			
Ha Tinh province	0.88	0.54	0.34*(0.14)
Thua Thien Hue province	0.40	0.28	0.12(0.14)
Dak Lak province	0.17	0.08	0.09(0.15)

Note: ***, **, and * denote the statistical significance at the 1%, 5%, and 10% level, respectively. Standard errors (in parentheses) are bootstrapped using 1,000 replications of the sample. Estimates are derived by means of the difference-in-differences matching technique based on propensity score matching.

Source: Compiled by Amare et al. (2012) and Nguyen et al. (2013) based on the DFG Rural Household Surveys 2008 and 2010.

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Appendix

Appendix Table 1 Thailand: Summary Statistics of Households by Migration Status

Variable Description	Unit	Migrant Households	Non-Migrant Households	Difference (Significance)
Household size	No.	3.95	4.13	ns
Female headed	%	0.28	0.26	ns
Household head age	years	53.11	54.48	ns
Mean age of the household (years)	years	36.26	37.48	ns
Household head schooling (years)	years	4.68	5.34	**
Households members below primary school	No.	1.70	1.61	ns
Households members who completed primary school	No.	2.66	2.11	**
Households members who completed secondary school	No.	1.13	0.67	***
Households members who completed above secondary school	No.	0.29	0.17	***
Dependency ratio		1.67	1.61	ns
Income from remittance per month per capita	$PPP	0.47	0.28	**
Land per capita	ha/HH member	0.60	0.57	ns
Households reporting demographic shocks	%	0.21	0.20	ns
Households reporting health shocks	%	0.35	0.39	*
Households reporting agricultural shocks	%	0.48	0.46	ns
Households reporting economic shocks	%	0.31	0.28	ns
Total income per capita per month in 2010	$PPP/HH member	161.41	123.26	***
Time needed to reach the hospital	minutes	21.55	20.41	ns
Time needed to reach the market	minutes	20.13	18.34	ns
Distance to other public infrastructure	minutes	14.2	13. 8	ns

Note: Household demographics, income, asset, and remittance data are from 2008 unless otherwise specified.
Source: DFG Rural Household Surveys (2008 and 2010).

Appendix Table 2 Vietnam: Summary statistics of variables included in the probit model (1)

Variables	Obs*	Mean**	Std. Dev.	Min	Max
Dependent variables in 2008 or 2010					
Migrant HH (1-Yes, 0-No)	1432	0.19	0.39	0	1
Employment migrant HH (1-Yes, 0-No)	1432	0.10	0.31	0	1
Education migrant HH (1-Yes, 0-No)	1432	0.04	0.21	0	1
Independent variables in 2007					
HH experienced demographic shocks (1-Yes, 0-No)	1432	0.42	0.49	0	1
HH experienced social shocks (1-Yes, 0-No)	1432	0.04	0.21	0	1
HH experienced agriculture shocks (1-Yes, 0-No)	1432	0.25	0.43	0	1
HH experienced economic (1-Yes, 0-No)	1432	0.07	0.26	0	1
Female headed HH (1-Yes, 0-No)	1432	0.17	0.37	0	1
Age of HH head (years)	1432	47.23	14.62	0	91
Dependency ratio	1432	0.31	0.28	0	1
HH members w/ completed secondary school	1432	0.65	0.92	0	6
HH members w/ completed professional education	1432	1.76	1.30	0	8
HH members belong to political or social organization (1-Yes, 0-No)	1432	0.68	0.47	0	1
Log of monthly HH per capita income (PPP$ in 2005)	1432	4.07	1.02	1.49	6.80
Household engaged in off-farm activities (1-Yes, 0-No)	1432	0.50	0.50	0	1
Household is indebted (1-Yes, 0-No)	1432	-2.38	1.37	-8.01	2.02
Vulnerability to poverty 2007	1432	0.69	0.46	0	1
Village road condition (1-Good condition, 0-Bad condition)	1432	0.48	0.50	0	1
Log distance from village to district headquarter (km)	1432	2.31	0.86	-1.61	4.32
Ha Tinh province (1-Yes, 0-No)	1432	0.31	0.46	0	1
Thua Thien Hue province (1-Yes, 0-No)	1432	0.35	0.48	0	1
Dak Lak province (1-Yes, 0-No)	1432	0.34	0.47	0	1

Note: ** For binary variables, the mean refers to the share of migrants for which the dummy is equal to 1.

* 121 observations had been dropped to control outliners

Source: Nguyen et al. (2013) based on the DFG Migrant Survey 2010, DFG Rural Village Survey 2007, and the DFG Rural Household Surveys 2008 and 2010.

Appendix 3:

Table . **Thailand: Daily Wage Income of Migrants**

Daily Wage Income (in baht)	**Percent**
<200	19
201–300	49
301–400	16
401–600	11
601–800	3
>800	2
Median of Wage Income	264
Mean Wage Income	350
Minimum Wage, Bangkok Area, 2010	206

Source: Amare et al. (2012) based on DFG Bangkok Migrant Survey 2010.

Vietnam: Daily income of migrants with wage-employment (% of total)

Daily wage income (1,000 VND)	**Industry/ production sector (N=106)**	**Public/private service sector (N=127)**	**Total sample (N=233)**
>150	1.9	9.4	6.0
101-150	7.5	15.7	12.0
51-100	52.8	33.1	42.1
<50	37.7	41.7	39.9
Stdev (1,000 VND)	44.1	56.2	51.3
Median (1,000 VND)	66.7	66.7	66.7
Average (1,000 VND)	65.1	76.2	71.2

Source: Nguyen et al. (2013) based on the DFG Migrant Survey 2010.