Revisiting Poverty-Migration Nexus:

Causes and Effects of Cambodia-Thailand Cross-Border Migration

by

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Abbreviations

CBLM	:	Cross-Border Labor Migration
CDRI	:	Cambodia Development Resource Institute
GDP	:	Gross Domestic Products
ILM	:	International Labor Migration
ILO	:	International Labour Organization
IOM	:	International Organization for Migration
MHHs	:	Migrant Households
MoLVT	:	Ministry of Labor and Vocational Training
MoU	:	Memorandum of Understanding
NELM	:	New Economics of Labor Migration (theory)
NIS	:	National Institute of Statistics
Non-MHHs	:	Non-Migrant Households
RGC	:	Royal Government of Cambodia
U.S.	:	United States
UNDP	:	United Nations Development Programme
WB	:	World Bank

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Chapter 1: Introduction

1.1 Problem statement

This dissertation analyses the relationship between poverty and South-South cross-border labor migration (CBLM), as a type of international labor migration (ILM), by focusing on how poverty affects South-South CBLM and vice versa.[1]

The possibility that ILM may result in either positive or negative impacts on origin countries has led to increasing endeavors to examine the effects of ILM. The results from empirical studies have sparked off intense theoretical and policy debates on the developmental roles of ILM since findings on its effects reveal a mix of both positive and negative cases. One important explanation for the inconsistent findings on the effects of ILM is that research tends to study its causes and effects separately (de Haas, Blackwell, Castles, Jonsson & Vezzoli, 2009). The ability to migrate is conditioned by the varying degree of systemic constraints which limit the extent that ILM can promote structural changes. This explanation has led to a renewed interest in understanding the causes of ILM.

In order to understand the role of poverty as a cause of ILM, it is necessary to understand the concept of migrant selectivity first. There are three types of selectivity:

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[1] It is necessary to note on the use of terminology related to migration in this dissertation. Simply, the term 'migration' refers to a movement of people from one place to another within the country or across borders, while the term 'labor migration' refers to migration for employment. However, in this study, the terms 'labor migration' and 'migration' are used interchangeably for convenience reason, except in Chapter 3. In Chapter 3, the term 'migration' refers to general migration, regardless of destination and the purpose of moving. And in the same chapter, when I mean labor migration, I use the full term 'labor migration'.

positive, intermediate and negative (Borjas, 1988). Positive selectivity means that migrants are the better-off group in their community or country in terms of, for example, human capital, economic condition or social status.[2] The reason why it is called positive selectivity is because migrants with better economic condition tend to have higher levels of human capital and thus are expected to have more ability to migrate and obtain greater benefits from ILM. On the other hand, ILM is said to be negative selectivity when migrants have low human capital or come from lower or the lowest income group. People in lower and the lowest income groups tend to have low human capital, which limits their ability to gain a high return from ILM. Finally, the term intermediate selectivity is used when migrants are drawn from the middle level in terms of any of the above aspects (for more detailed explanation of the concept, see Chapter 2).

Notwithstanding the prevalent belief that poverty causes ILM, it remains doubtful about the effect of income or wealth on ILM (Hanson, 2010: 4378). There seems to be theoretical and empirical regularities that the poorest are less capable of migrating due to burdens of migration-associated costs and risks (Waddington & Sabates-Wheeler, 2003: 5; de

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[2] Labor migration is selective in terms of demographic characteristics, health status, and economic condition of migrants. Generally observed, when compared to non-migrants, migrants are usually young men, though increasingly women also partaking, with relatively high education and better health and economic status. However, depending on the contexts and types of labor migration, selectivity may vary (Boyle, 2009: 100-101). Initially, selectivity was divided into only two types: positive and negative. However, research on the Mexico-U.S. labor migration has increasingly found that migrants are drawn from the middle of wage or schooling distribution (see, for example, Feliciano, 2001; Hanson and Chiquiar, 2005; Orrenius and Zavodny, 2005).

Haas, 2008: 5; Vargas-Lundlus, 2008: 27; de Haas et al., 2009). In other words, the poorest are extremely limited in their ability to undertake ILM as a livelihood strategy.[3]

However, Durand and Massey (1992) and de Haan and Yaqub (2009) have raised several caveats regarding the conclusion on migrant selectivity. Firstly, while positive selectivity is visible in the case of South-North ILM, South-South ILM is less costly and thus could be more affordable for the poor and the poorest. The constraints are further minimized in the case of CBLM between countries sharing a porous border and historical and cultural similarities. Secondly, socio-economic class composition of ILM is determined by the growth and elaboration of migrant networks, and thus study on migrant selectivity should take migration networks into account. Thirdly, modest representation of the poorest in the survey and census is probably due to the limitation of those tools rather than the actual low propensity of the poorest to migrate. Because of the very low human capital and less access to network, the poorest might not be able to undertake formal ILM through recruitment agencies but rather migrate through illegal channels, which pose great challenges for the survey or census to capture. Unfortunately, studies on selectivity in the cross-border context have been concentrated mainly on education or skill rather than on economic condition of migrants. Therefore, more work on economic selectivity of CBLM is needed in order to enrich the understanding of the effect of poverty on CBLM as a type of ILM.

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[3] Bray (1984), Waddington and Satabes-Wheeler (2003), Clark, Hatton and Williamson (2003), and Azcona (2009) find that migrants are not drawn from the poorest group. Bhandari (2004), Sabates-Wheeler, Sabates and Castaldo (2008), and UNDP (2009) find that migrants are from the lowest income group.

Regarding the effects of ILM, literature in the field of development economics is very much concerned about whether ILM affects households' consumption or production. Generally, studies have found mixed results regarding the effects of labor migration on investment including, for example, land acquisition, agricultural production, and income diversification.[4] However, another group of studies, which examine households' remittance spending behaviors, nearly consistently finds that migrant households (MHHs) spend remittances on consumption including food, education, health care, housing and luxury goods more than on productive investment, although the effect of labor migration on education remain unclear.[5]

Based on the general observation that remittances tend to flow to households' consumption economy, especially luxury goods and housing, rather than investment economy, migration pessimists assert that labor migration is detrimental to development.[6] However, the New Economics of Labor Migration (NELM) theory (Stark, 1991) and some scholars argue that the effects of labor migration can be assessed in both the short-term and long-term (de Haas, 2007). In the short-run, remittances help provide supplementary incomes to finance household consumption in food, health care and education (Nyberg-Sørensen et al., 2002; de

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[4] For studies which find positive effects of labor migration on investment, see McCarthy et al. (2006) and Wouterse and Taylor (2008). For studies that find negative effects, see Rozelle, Taylor & de Brauw (1999), Damon (2010), and de Brauw (2010).

[5] For studies on the effects of remittances on households' consumption, see, for example, de Brauw & Rozelle (2008) and Quisumbing & McNiven (2010).For studies on the effects of labor migration on education, see Edwards & Ureta (2003), Yang (2005), Thieme & Wyss (2005), and Adams (2005).

[6] For review of the debates on developmental roles of labor migration, see Taylor, Arango, Hugo, Kouaouci, Massey & Pellegrino (1996), Nyberg-Sørensen et al. (2002), and de Haas (2006).

Brauw & Rozelle, 2008). In the long-run, after long-term migration, labor migrants have often accumulated assets, skills and knowledge necessary to make investment in their home areas. The question, thus, does not concern the types of effect but whether or not the positive effects exist and what determines the existence of the effects.

Another strand of literature has revealed several factors that can explain the varying effects of labor migration. Those factors include the gender of the migrant, destination of labor migration whether it is domestic or international, duration of labor migration, and amount of remittances. However, the initial economic condition of MHHs seems to have been overlooked by past studies when examining the effects of labor migration. Hanson (2010) reviews literature on labor migration and warns that careful attention is needed when concluding that remittances increase households' spending on consumption, education, or investment because the increased expenditure may be correlated with households' unobserved wealth that makes labor migration possible. He further stresses that the developmental impacts of labor migration would be greater if remittances improve the livelihoods of the poor rather than those of the non-poor households, but broad empirical evidence is not yet available to prove this effect. Therefore, whether MHHs with different initial economic conditions have varying ability to reduce their poverty is a question that has yet to be answered.

CBLM from Cambodia to Thailand is growing. It has been estimated that the stock of Cambodian migrants in Thailand was 248,000 in 2008, of which the majority were irregular cross-border migrants, and that by 2018 the number will increase to 316,000 (Maltoni, 2010:

23). Cambodian workers are the second largest group of irregular migrants in Thailand, after workers from Myanmar.

However, notwithstanding this growing phenomenon, the relationship between poverty and CBLM in Cambodia remains doubtful. Existing studies reported conflicting findings regarding the role of poverty in explaining CBLM of Cambodian workers to Thailand. For example, while an empirical study found that the poorer asset a household has, the more likely is its member to migrate (Yagura, 2006), another descriptive study reported that Cambodian migrants are actually not from the poorest group in their communities but from the poor and medium levels (CDRI, 2007). Moreover, while it is generally believed that poor Cambodian people migrate due to landlessness, a recent study on Cambodian migrants to Thailand showed that 80 per cent of their sampled migrants and households owned land (Maltoni, 2010).

Similarly, past studies on Cambodia could not provide concrete evidence on how CBLM affects poverty. There are a number of studies on the effects of labor migration including CBLM on poverty in Cambodia (see Chea & Tsuji, 2005; Dahlberg, 2005; CDRI, 2007; Tong, 2010; Tong et al., 2011), but only few studies employed rigorous analytical methods and focused on ILM (see Chea & Tsuji, 2005; Tong, 2010). Using the national representative household survey data, Tong (2010) found that remittances from internal and international migrants contribute to poverty reduction by reducing the level, depth and severity of poverty. The effect of international remittances is stronger than that of the internal remittances. However, since his study focused on the macro-level effect of poverty, the

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relative effects of labor migration on various aspects of poverty at the micro/household level has not been ascertained.

In short, there is a shortage of evidence to unveil the relationship between poverty and ILM, especially in the case of South-South CBLM. While crossing border to work in Thailand is a widespread phenomenon in Cambodia, information on the attribution of poverty as a cause of CBLM and on the change in households' poverty status as a result of CBLM is not yet enough. Therefore, more study on the relationship between poverty and CBLM in Cambodia is clearly needed.

1.2 Objectives of the study

Based on the problems mentioned above, there is paramount importance to study the relationship between poverty and South-South CBLM by taking Cambodia-Thailand CBLM as a case study. This study, therefore, is conceived with two main objectives. The first objective is to analyze how poverty affects CBLM from Cambodia to Thailand. Concretely, I analyze the effect of poverty whether it leads to positive, intermediate or negative selectivity of Cambodian labor migrants to Thailand and whether the influence of poverty as a constraint to CBLM reduces in the recent outflow of migrants and subsequent migrants in each MHH. Continued from the first objective, the second objective aims to examine the effects of CBLM on poverty reduction. Specifically, I analyze whether or not CBLM affects households' consumption-based poverty and production-based poverty and what explains variations in the effects of CBLM. To achieve these two objectives, I address two main research questions and several sub-research questions accordingly as follows:

1. *How does poverty affect South-South cross-border labor migration?*

    1.1. Does poverty affect migrant selectivity?

    1.2. Does the effect of poverty vary depending on year of migration?

    1.3. Does poverty affect the sending of subsequent migrants?

2. *What are the effects of South-South cross-border labor migration on poverty reduction?*

    2.1. Does CBLM affect households' consumption-based poverty and production-based

        poverty?

    2.2. What factors explain variations in the effects of CBLM?

In addition to the effect of poverty on migrant selectivity, I analyze the effect of poverty by year of migration and sequence of migration for two reasons. Firstly, Durand and Massey (1992) explain that the role of migration network is cost reduction for subsequent migrants and throughout time migration networks have reached a threshold level which makes labor migration accessible to the mass in the region, not just the upper class like in the early period of labor migration. In order to confirm this assumption, I address the second sub-research question to examine whether the influence of poverty becomes stronger or weaker in the later period of labor migration. Secondly, if the assumption that migration network helps reduce the cost of labor migration for subsequent migrants is correct, it is reasonable to assume that households should face less financial constraints in sending subsequent migrants. Although the assumption made by de Haan and Yaqub (2009) regarding the possible negative selectivity in the case of South-South CBLM is correct, it is unknown whether which group of households – among the poorest, poor, and non-poor – is able or more likely to send

subsequent migrants. It is important to address these two additional sub-research questions since the literature has revealed that the duration of migration and the number of migrants are possible factors that explain the variations in the effects of labor migration.

Following the broader definition of poverty and development, I examine the effects of CBLM on both households' consumption-based poverty and production-based poverty. On the consumption side, there are three aspects of poverty: 1) ownership of durable goods, 2) house quality, and 3) education. At the same time, I examine the effects of CBLM on two aspects of households' production: 1) ownership of agricultural tools and 2) income diversification. I analyze the effects of migration on these five aspects of poverty due to three main reasons.

First, while past studies on remittance spending behaviors tend to consistently report that MHHs spend remittances on housing and durable goods, there is a dearth of research investigating why the effects exist. More importantly, it is unknown whether MHHs with different initial economic conditions have different spending behaviors towards housing and durable goods. Since the expenditures on housing and durable goods enhance the well-being of MHHs, I analyze the effects of CBLM on house quality and durable goods and explain why the effects exist or do not exist in order to fill these gaps.

Second, the effect on education is important because it leads to high knowledge, which is essential for freeing people of poverty. While the conventional definition of productive investment did not regard expenditure in education, health, food, housing and other community projects, Sen's capability approach of development suggests that these

expenditures should be considered as development because they lead to an improvement in human's well-being (Sen, 1987). While past studies have tended to investigate the effect of migration on education in terms of educational expenditure, I analyze the effect of CBLM on education in terms of number of household members currently enrolled in school. While the indicator 'educational expenditure' can capture only the short-term effect of labor migration, the indicator applied in this research measures the long-term effect of labor migration, which is very important since past studies find countervailing effects of labor migration on education. On the one hand, migration-associated remittances enable larger expenditure on education of household members, but on the other hand labor migration may reduce household's incentives to invest in education, which leads to earlier drop-out from school of household members.

Finally, the importance of agricultural tools and income diversification is very explicit as they are indicators of investment that can lead to the increase in household income and better risk management. The NELM theory proposes that households may send out one or more members to earn additional income to finance new investment in agricultural production or new economic activity, which they are unable to do due to credit constraint. Therefore, I examine the effects of CBLM on these two aspects as they can capture the long-term effect of labor migration on poverty reduction.

More specifically, the investment in agricultural tools represents the long-term effect of labor migration on agricultural intensification, and the investment in a new economic activity informs about the long-term effect of labor migration on income diversification. These two strategies are very important for ensuring a sustainable rural livelihood. Basically,

there are three strategies to intensify agricultural production: 1) to increase inputs used, 2) to change from a low-value to a high-value output, and 3) to advance technology to raise land productivity (Carswell, 1997: 3). Therefore, the investment in mechanical agricultural tools falls into the third strategy, which is particularly relevant in this study because Banteay Meanchey, which is the research site, is one of the major rice producing provinces in Cambodia, and people generally plough their land and harvest the crop by tractor or hand tractor. In addition to being helpful for their own farming, households can rent their hand tractor to other households for additional income.

Similar to the agricultural intensification, the income diversification can also be achieved through three strategies (International Food Policy Research Institute, 2003: 9). First, rural households may choose to diversify by just increasing number of income sources regardless of the output value. Second, they may diversify by switching from food production to commercial agriculture or we call agricultural commercialization as in the case of African farmers. Third, diversification may involve switching from low-value crops, which are often measured in terms of value per unit of weight, to higher-value crops, livestock, or non-farm activities.

When compared to the studies on the effects of labor migration on agricultural production and consumption, relatively smaller number of existing studies has examined the effect of labor migration on income diversification. Moreover, those studies are more interested in examining the effect of labor migration on the third strategy of income diversification (see, for example, Hull, 2007; Wouterse & Taylor, 2008) rather than on the

first strategy. Although the evidence on the effect of plural activities on households' total income is mixed of both positive and negative cases, this strategy enhances households' ability, especially the poor, to manage risk in the absence of insurance market (Haggblade, Hazell & Reardon, 2007: 121). Therefore, I took a different approach from the existing studies by examining the effect of migration on the first strategy of income diversification i.e. the effect on households' ability to increase their number of economic activities.

1.3 Scope of the study

There are three reasons for limiting the scope of this study to only long-term CBLM from Cambodia to Thailand.

First, as the review earlier has shown, more than 80 percent of migrant workers in some major receiving countries come from the countries they share the border with. As in the case of the Greater Mekong Sub-Region (GMS), Thailand is the biggest destination of irregular cross-border migrants from countries in the region including Cambodia, Laos, and Myanmar. It has been estimated that the stock of Cambodian migrants in Thailand was 248,000 in 2008, of which the majority were irregular cross-border migrants, and that by 2018 the number will increase to 316,000 (Maltoni, 2010: 23). Cambodia workers are the second largest group of irregular migrants in Thailand, after workers from Myanmar. In addition to social and cultural similarity, people along the borders of the two countries have long had official economic exchange since the early 1990s. Therefore, it is reasonable to expect that the growth of migration networks may have already reached its threshold, which makes the case

of Cambodia-Thailand CBLM being a suitable case to study the effect of poverty on cross-border migration.

Second, ILM, especially CBLM, is very important for the development of Cambodia. The estimated amount of remittances flowing into Cambodia accounted for 3.23 percent of Cambodian GDP in 2005 and 3.40 percent of that in 2008 (GDP in 2008 was US$9.57 billion) (Chan, 2009: 1; Royal Government of Cambodia: RGC, 2010). Having limited ability to create local jobs and facing demographic pressure of new entrants into the labor market every year, the RGC has set ILM as one element of the employment generation policies. However, at the same time, the government is also working cooperatively with Thailand to reduce the illegal border crossing of Cambodian people as it frequently leads to problems such as smuggling, human trafficking, and violation of workers' rights. Hence, the RGC needs to be well informed about the causes of labor migration, so that it can take appropriate corrective measures.

Finally, while the topic of labor migration is being hotly debated and there is a considerable number of studies on labor migration in Cambodia (Acharya, 2003; Asian Migration Centre, 2005; Chea & Tsuji, 2005; Dahlberg, 2005; Maltoni, 2007; Cambodia Development Resource Institute: CDRI, 2007; Chan, 2009; Tong, Hem & Santos, 2011), there are only a few studies (for example, Chea & Tsuji, 2005; Tong et al., 2011) using rigorous quantitative research methods to examine determinants and effects of CBLM migration. Most of the studies are based on anecdotal evidence and focus on internal rather than international labor migration. Migration literature has suggested that long-term or

international labor migration seems to have stronger impacts – either positive or negative – than short-term or internal labor migration. Due to their weak methodology and limited scope, the existing studies could not provide concrete evidence on the causes and effects of CBLM in Cambodia.

1.4 Research methodology

1.4.1 Data and setting

To achieve the research objectives, I conducted two rounds of data collection in Cambodia: August-September 2010 and December 2010-January 2011. The methods of data collection were questionnaire interviews and in-depth interviews. The survey included data on 234 households, of which 154 are MHHs. As mentioned above, the study focuses on 'long-term cross-border labor migrants'. Regardless of the actual duration of stay in Thailand, as long as the intended length of migration is long-term, people are considered long-term migrants. Thus, a household from which one or many of its members have left for work in Thailand since 2000 is considered a migrant household. I selected only MHHs whose member(s) started migration in the year 2000 or later. This is because some past studies on Cambodia showed that migration to Thailand increased sharply in 1996 and peaked in the first half of 1997, [7] but declined in 1998 due to the Thailand's economic downturn and illegal

[7] The increase of labor migrants, including Cambodian migrants, to Thailand in 1996 and until mid-1997 could be attributed to two factors. First, before the 1997 financial crisis, Thailand focused on light manufacturing industries, which required both skilled labor and unskilled labor. Second, however, due to improved levels of education, Thai labor force was not interested in the unskilled jobs generated in the light manufacturing industries as well as in the agriculture sector, which resulted in an official permission for local businesses to legally employ existing illegal migrants in Thailand. This policy served as a magnet of new labor migrants to Thailand (Chalamwong, 2008: 7).

migrant repatriation policy (Chan & So, 1999). As the Thai economy started to recover in around 2000, it is reasonable to assume that new out-flow of labor migration from Cambodia should have been noticeable since then.

All the 234 households were selected from four villages in Nimith commune. The commune is located in Ou Chrov district, Poi Pet city, Banteay Meanchey province. The province has a population of approximately 600,000 in totally nine districts, four of which border Thailand. In Poi Pet alone, the population is around 100,000 (Development Analysis Network: DAN 2005). Regarding migration, Banteay Meanchey is a major sending province and transit spot for migrants from other provinces to Thailand. A study conducted by the International Labor Organization (ILO) on CBLM in Banteay Meanchey province has revealed that Nimith commune is a major sending commune of migrants to Thailand (ILO, 2005). Based on information from in-depth interviews with staff of a local organization working on migration-related issues and the leader of Nimith commune, I selected four out of 15 villages in Nimith commune – Dong Aranh, Soriya, Thmor Sen and Nimith Mouy – as the research site for two reasons: prevalence of long-term CBLM and different socioeconomic characteristics.

There are advantages and disadvantages of conducting fieldwork in Cambodia and choosing Nimith commune as a research site. Due to their illegal working status, Cambodian migrant workers are afraid of revealing their identity. Hence, it is not possible to approach them in Thailand. Even in Cambodia, local authorities also do not have any record of the location of MHHs. Data enumerators and I, therefore, tried to select households as randomly

as possible by walking around the villages in all directions and approaching the houses regardless of their conditions. Because Nimith commune is a major sending commune of irregular migrants to Thailand, selecting the commune as a research site enables a wide access to migrant households. However, due to long social and economic exchanges between people in this province and Thais, it requires caution when applying findings of determinants of CBLM in this research site to migration from other parts of the country.

Data enumerators and I conducted semi-structured interviews with members of migrant and non-migrant HHs (non-MHHs) by using questionnaires with closed and open-ended questions. The questionnaires were designed to collect detailed data on household members, including their gender, age, education, marital status, and migration experience; decision to migrate or not to migrate; and current and past household economic condition and economic activities. For past information, I collected information prior to migration for MHHs and in year 2000 for non-MHHs. In addition to respondents from both groups of households, I also interviewed the commune leader and staff of a local organization in order to collect information of the commune and overall migration situation in the commune.

Following Sabates-Wheeler, Sabates and Castaldo (2008) who used recalled data on subjective past poverty of migrants from Ghana and Egypt, I used recalled data on past economic condition to deal with the problem of reverse causality. This problem is a prevalent challenge faced by existing studies attempting to examine determinants of migration. A household's current economic condition is potentially affected by labor migration of household members. Caution on this issue is clearly warranted since past migration studies

tend to show consistently that left-behind households are most likely to spend remittances on housing and durable goods. Hence, using the current economic condition to investigate determinants of labor migration potentially raises the problem of reverse causality. Most past studies commonly use ready-collected survey or census data and thus are less flexible in terms of solution to the problem.

However, it is important to note that the recall method has both strength and weakness. In terms of strengths, the retrospective data help solve problem of reverse causality when estimating the determinants of labor migration. However, due to its nature, the recall method prohibits the collection of some data that is prone to recall errors. A very clear example is the information on income prior to migration or in year 2000 and amount of remittances. Respondents could not correctly recall the amount of their income prior to migration or in year 2000 or the amount of remittances they have received so far. As a result, some respondents refused to provide answers regarding the amount of received remittances. Another limitation is that it is not possible to collect information on any events or changes occurring in the community that can influence the effect of labor migration.

1.4.2 Methods of data analysis

The study employed quantitative methods to answer the two research questions.

For the first research question (how does poverty affect South-South cross-border labor migration?), I did three Probit regressions for data analyses. The first regression analyzed the effect of poverty on migrant selectivity, and the dependent variable is 'dummy for migration status', which was dichotomously coded as '1' for migrant household and '0'

for non-migrant household. The objective of this regression is to analyze the effect of poverty on migrant selectivity. The second regression analyzed whether the financial constraints or the effect of poverty becomes stronger or weaker in the recent period of migration when compared to the early period. The dependent variable is 'dummy for year of migration', which has a value of '1' if the household started migration in year 2006 or afterwards and '0' if the year of migration was before 2006. Finally, the third Probit regression aimed at examining if poverty is a constraint for the households to send subsequent migrants to Thailand. The dependent variable in this regression is 'dummy for subsequent migration', which takes on the value '1' if the household has subsequent migration and 0 otherwise (a detailed explanation of each regression provided in Chapter 4).

To answer the second research question (what are the effects of cross-border labor migration on poverty reduction?), I applied two quantitative methods: Double-Difference method (DD) and First-Difference method (FD). I used DD method to analyze the effect of CBLM on households' consumption-based poverty and production-based poverty and FD method to analyze factors that explain variations in the effects of CBLM. These two methods were used because of the characteristics of data and in order to control for the effect of initial characteristics of households prior to migration, since they may potentially influence the effect of labor migration as suggested by de Haas et al. (2009). Simply, the methods compare the net changes in interested indicators of poverty between MHHs and non-migrant households (non-MHHs) to identify the effects of CBLM on households' consumption and production and among MHHs to determine factors that explain the variations in the observed effects (a detailed explanation of each method provided in Chapter 5).

Although past studies used different units of analysis to examine determinants and effects of labor migration, this study uses 'household' for three reasons. First, de Haan and Yaqub (2009: 3) stresses that analysis on labor migration should be placed at the household level because experience of various countries has shown that labor migration is frequently circular in nature, with continuous interaction between migrants and their households in origin areas, rather than a one-way and one-off move as suggested by the rural-urban migration model of Harris and Todaro (Harris & Todaro, 1970). Second, labor migration is a household decision because there are many cases in which costs of labor migration are beyond the resource owned by an individual; therefore, households need to pool resources in order to support out-migration of one or many individuals (Quinn, 2001). Finally, for a study on the relationship between poverty and labor migration, household level is more appropriate because findings from the dominant kind of poverty studies are mostly at household level (de Haan & Yaqub, 2009: 3).

1.5 Significance of the study

The study is expected to make four main theoretical contributions.

First and foremost, although ILM has a long history, the academic research in this field is still at an early stage, especially from the perspective of development economists (Hanson, 2010: 4366). A possible reason for this is that cross-country data on out-migrant stocks have become available only in this decade (Hanson, 2010: 4366). Despite its infancy, the academic literature on ILM has been divided by several disciplines. For example, labor economists tend to study whether ILM is good for destination countries, while development

economists are more interested in examining whether it is good for origin countries. However, while there is an abundance of studies in the field of labor economics on the effects of ILM on destination countries, only little evidence on the developmental impacts of ILM on origin countries is available. This study aims to add to this evidence and thus contribute to the field of development economics.

Second, the study adds more evidence to the current discussions on migrant selectivity and its influence on the effects of labor migration. There is a wealth of existing studies on migrant selectivity in terms of education and skills but only very few on the economic aspect. Moreover, notwithstanding a large body of studies on the effects of labor migration, there is a lack of research considering the influence of migrant selectivity in terms of economic aspect on the effects of labor migration.

Third, by using retrospective data, this study can tackle the problem of reverse causality and thus is expected to provide a better estimation of the determinants of labor migration. Only a few existing studies have estimated the determinants of labor migration by using data of households' initial characteristics.

Finally, there is also paucity of labor migration studies that examine such a comprehensive effect of labor migration on poverty reduction and, especially, in the case of South-South CBLM. Most studies just focus on the effects on agricultural production or MHHs' remittance spending behaviors. Moreover, as the existing body of literature on CBLM is dominated by the United States-Mexico CBLM, this study enhances the understanding of the causes and effects of CBLM in the case of South-South direction.

In addition to the theoretical contributions, the study is also expected to make practical contributions by providing concrete evidence on causes and effects of CBLM in Cambodia. This information is essential for the RGC to take appropriate measures to promote more positive contributions of CBLM and tackle its negative causes and effects. Notwithstanding the prevalence of CBLM there is a dearth of rigorous studies on the causes and effects of CBLM in Cambodia.

1.6 Organization of the dissertation

The dissertation consists of six chapters. Following this introductory chapter, Chapter 2 reviews the literature on relationship between poverty and labor migration. It aims to improve the understanding of how poverty affects labor migration and vice versa and pinpoints gaps in the existing literature regarding the poverty-migration relationship. Finally, an analytical framework for the study is drawn based on this review.

Chapter 3 places labor migration in the Cambodian context. It provides a brief overview of poverty situation in Cambodia, explains why labor migration is significant for Cambodia, describes forms of labor migration in Cambodia, and reviews Cambodian labor migration policies and regulations. As the case is Cambodia-Thailand CBLM, a brief discussion on the importance of CBLM from neighboring countries for Thailand is also provided. Finally, the chapter pinpoints what remains unknown about labor migration in Cambodia regarding its causes and effects.

Chapters 4 and 5 provide answers to the first and second research questions accordingly. They explain in detail the methods of data analysis and variable construction and

presents research findings which include regression results and supporting descriptive information.

By way of conclusion, Chapter 6 presents a summary of findings and implications drawn from the study for the current theoretical debates and policy interventions that the RGC should make in order to promote positive impacts of migration so that it can serve as a mechanism for development. The chapter finishes by outlining directions for future research.

Chapter 2: Conceptual Understanding of Poverty-Migration Nexus

Chapter 1 has already set the scene for what the study will touch upon. This chapter, in particular, mainly discusses relevant theories and conceptual assumptions regarding the relationship between poverty and labor migration. To start with, Section 2.1 is devoted to providing a brief review on the concept of poverty and its determinants. As the topic of labor migration involves multiple academic disciplines, there are various terms used, a fact which might create confusion. Therefore, Section 2.2 reviews definitions and typologies of migration. Section 2.3 briefly reports on the modern history of labor migration. Section 2.4 enhances the understanding of labor migration by providing a detailed description of the paradigm shift in the field of labor migration. Sections 2.5 to 2.7 discuss relevant theories and empirical evidence on the causes and effects of labor migration in relation to poverty. Section 2.8 presents an analytical framework drawn for this study. Finally, Section 2.9 summarizes the chapter and provides a preview of Chapter 3.

2.1 Understanding poverty

2.1.1 Dimensions of poverty

The simplest or most straightforward definition of poverty seems to be the one provided by the World Bank in its 'World Development Report 2000/2001: Attacking Poverty'. The report describes poverty as 'pronounced deprivation in well-being' (WB, 2000: 15). Although the old definition of poverty in the World Development Report 1990

recognized only the material deprivation in terms of income or consumption, the new definition encompasses other dimensions of well-being or poverty, such as education and health. Generally, there are three perspectives of well-being/poverty (United Nations Development Programme: UNDP, 1997; Kanbur & Squire, 2001; Haughton & Khandker, 2009).

The first view is a traditional one that considers well-being as 'the command over commodities'. Generally, this means that as long as people have access to adequate resources to fulfill their needs, they have good well-being. A typical way to measure poverty in this approach is to define a threshold of income or consumption and compare individuals' or households' income or consumption against that threshold. People are considered poor if their level is below the threshold. This approach measures only the 'income poverty'.

The definition of well-being in the second view goes beyond income or consumption matter; instead, it is concerned with whether or not people are able to gain a specific type of consumption goods. Those consumption goods may include education, health care, food, shelter, amenity, and so on. In terms of measurement approach, the question is also not about how much income individuals or households earn or their level of consumption, but it is about, for example, what materials their houses are constructed from or whether people have proper shelter. The approach measures 'poverty from a basic needs perspective'.

The final approach is called the 'capability approach,' which was proposed by Amartya Sen (1987). In his view, individuals' or households' well-being is determined by their capability to function in a society. In other words, when individuals or households have

substantive freedom to lead the kind of life they want, their well-being is improved. The poor tend to be those who are highly vulnerable, voiceless or powerless. This broader approach to poverty implies that poverty is multi-dimensional, and thus a broader range of policy is needed to effectively tackle poverty. For example, together with income generating policy, the government should also implement measures to insure the poor against risks or shocks and create mechanisms through which the poor can express their needs or concerns.

2.1.2 Determinants of poverty

Poverty can be caused by many factors inherent in the region, community, household and individual (Ellis, 2000; Haughton & Khandker, 2009). The following description focuses on the immediate but not necessarily the biggest causes of poverty. Regarding the regional/national characteristics, poverty tends to be highly concentrated in areas which are isolated and have scarce resources, low rainfall, and other unfavorable conditions. Furthermore, several macro factors, such as good governance; a good environmental policy; economic, political and market stabilities, mass participation; and a fair, functional, and effective judiciary also determine the extent of poverty of a nation. Finally, a high level of some social indicators, such as gender, ethnic, and racial inequality may fail development efforts and thus accelerate poverty in the region.

While the regional factors have macro-level effects, the community factors have stronger and more direct impacts on households. Among all the factors, infrastructure plays a very important role in reducing or exacerbating poverty in the community; thus, it has become a popular variable in econometric measures to estimate the poverty level of the community.

Some examples of the proxies of infrastructure include distance to paved roads or local administrative office, availability of electricity, proximity to large market, and availability of schools and health centers. Other community factors may consist of the level of human resource development, availability of employment, social mobility and representation and land distribution.

Regarding the household and individual level characteristics, several demographic, economic, and social factors can explain why some people or households are poor and others are not. As with the demographic factors, the poor and non-poor are frequently different in terms of household size and structure. Studies on various countries have revealed that the poor tend to have larger household size with many children under age 15 and slightly fewer elderly people over age 60 than the non-poor. Measuring the dependency ratio also can inform whether a household or individual is poor. Since the ratio reveals the weight of burden a household or individual has, its association with poverty is positive. Finally, there is a general belief that the poor and non-poor households or individuals are dissimilar in terms of the gender of household head and that the poor households tend to be headed by women.

Although income and consumption are commonly used indicators of poverty, there are various other important economic characteristics that can be employed to measure poverty. Some key indicators include household employment and the property and assets owned by the households. Economists collect information on household employment through questions on, for example, employment status i.e. being employed or not, hours of work, numbers of jobs and frequency of changing employment. Household' s properties or assets can include

tangible assets – such as land, livestock, agricultural equipment, machinery, buildings, household appliances, and other durable goods – and financial assets. All of these indicators are important for two reasons. First, they specifically reveal the inventory of wealth of the household and also influence the flow of household's income. Second, they can better capture the economic condition of the household because some households may be poor by the income indicator but non-poor by the asset indicator.

Finally, a number of social characteristics – namely health, education and shelter – are widely known to have a significant effect on poverty. Frequently used indicators of health include nutritional status (weight for age, height for age, and weight for height), disease status (e.g. malaria, respiratory infection, diarrhea, and sometimes poliomyelitis), availability of health care services, and the actual use of these services. Regarding education, there are three indicators: specifically, the level of education of household members, the availability of educational services, and the actual use of these services. Similar to education, three characteristics of shelter are of high importance. The first characteristic is related to housing, which is about the type of building, means of access to the house (renting or owning), and household equipment. The second indicator is concerned with the availability of services, such as safe drinking water, telecommunication, and electricity. Environmental indicator is the third indicator of shelter. The indicator is about the level of sanitation, the degree of isolation, and the degree of personal safety.

To sum up, this section provided a brief review on the nature of poverty, how it is measured and what causes it. Poverty is not restricted to only income deprivation but also

refs to the non-fulfillment of basic and social needs. Poverty is a multi-faceted phenomenon that is caused by many factors related to the region, community, household and individual.

2.2 Definitions and typologies of migration

Continued from the preceding section which reviewed definitions and determinants of poverty, this section explains various types of migration. To avoid confusion, it is necessary to define what labor migration refer to in this study and the type of migrants that the study focuses on.

2.2.1 Definitions of migration

Until now, there has been neither a universal definition of migration nor of migrants except the fact that migration is defined from a geographical standpoint, and migrant is defined from a human standpoint (Trager, 2005: 10). Despite their different emphases, a consistency among the myriad definitions is that migration is a human movement which involves two areas. Three examples of how migration has been defined are shown below:

> *"Migration is a permanent or semi-permanent change of residence……
> No matter how short or how long, how easy or how difficult, every act of
> migration involves an origin, a destination and an intervening set of
> obstacles (Lee, 1965 as cited in Cohen, 1996: 16-17).*

> *"Migration is the movement of people from one place to another. It is the
> act of moving from one country or region and settling down in another,
> especially in a particular time of the year (Chinnavaso, 1993: 25).*

> *"Migration is the movement of a person or group of persons, either across
> an international border, or within a State. It is a population movement,
> encompassing any kind of movement of people, whatever its length,
> composition and causes; it includes migration of refugees, displaced*

persons, economic migrants, and persons moving for other purposes, including family reunification".[8]

2.2.2 Typologies of migration

The presence of multiple definitions is a result of the multi-disciplinary nature of migration phenomenon. The topic of migration has been studied and discussed by scholars in various disciplines, and the scholars in each discipline define who a migrant is to fit their particular contexts. However, the common definitions of migration are concerned with a range of perspectives including geographic, economic, and legal. These perspectives distinguish migration pattern of one country from another.

A popular, geographically related, classification of migration is between internal and international directions, with migrants being labeled as internal and international migrants accordingly. The internal migration or migration within country consists of four directions: rural-rural, rural-urban, urban-rural, and urban-urban. International migration, as the name suggests, is a human movement between country boundaries.

Migration could also be defined according to the purpose of moving. People can move to further their study, to follow their husband or wife after marriage, to seek for political asylum as refugees, or to search for employment as laborers. The latest reason of moving is called 'labor or economic migration', and those who move for this reason are named "labor or economic migrants". Employment is the main reason of moving for migrants all over the world (Fan, 2009: 89).

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[8]Key migration terms: http://www.iom.int/jahia/Jahia/about-migration/key-migration-terms/lang/en. Last access: February 20, 2012

Scholars in the legal field seemed to face more challenges in defining migration. The conventional polarity of migration in this particular discipline is between 'legal migration and illegal migration'. Some critics claimed that the term "illegal" seemingly implies that migrants break the rules to move, while in some cases other actors or institutions are violators and migrants are sufferers (Faist, 2004: 204). As a result, the terms 'regular migration and irregular migration' come into existence. Simply, the irregular migration refers to a movement which violates the migration norms of the country of origin, transit, or destination. Generally, these norms are associated with the exit from a country, entry into a country, employment and residence in a country (Faist, 2004: 204). 'Undocumented migration', which means crossing countries' border without legal documents, is a subset of the irregular migration. Although they use the term illegal migration, Portes and DeWind (2008: 288) clearly categorize irregular migration into three different groups – 1) illegal crossing of the border; 2) crossing of the border in a seemingly legal way, using falsified documents which one is not entitled to, or using legal documents for illegal purposes; and 3) staying after expiration of the legal status.

Finally, migration could also be defined based on the duration or degree of permanence. Although the terms "short-term migration" and "long-term migration" are apparently clear-cut, they create confusion in empirical studies as to how long migration needs to be for it to be considered as long-term. The very early assumption in the field of migration was that migration is permanent, but study after study has shown that it is not the

case (Trager, 2005: 11). People move for varying length of time. Sometimes migration is just during a specific period of time, while in some other times it may involve repeated trips.

The current study focuses on 'long-term cross-border labor migrants'. There are two types of migrants in the research site. One type of migrant crosses the Cambodia-Thailand border to work in Thailand and return in the evening of each day, but another type does not return in the evening of each day. The latter group aims to stay in order to work in Thailand for a long period of time, although some people in this group are not able to cope with the difficulties in Thailand and returned after only a few months of departure. Regardless of their actual duration of stay in Thailand, as long as their intended length of migration is long-term, they are eligible to be the samples of the study. The majority of the migrants are irregular migrants.

2.3 Modern history of labor migration

ILM is not a new phenomenon, but its patterns have changed over time. From geographers' perspective, the modern history of ILM is divided into four periods: mercantile, industrial, autarkic, and post-industrial (WB, 2009a: 149). A brief review of this history is clearly warranted as it can shed light on why a study on CBLM is needed.

Migrants from Europe outnumbered migrants from other nations in the mercantile and industrial periods or the first period of economic globalization. During the mercantile period (1500-1800), the European migrants consisted of diverse occupations such as agrarians, settlers, administrators, artisans, entrepreneurs and convicts. Their total number in the industrial period was roughly 48 millions. During these two periods, ILM did not occur due to

the sluggish economies of European countries. In contrast, some analysts found a positive relationship between the outflow of labors and the level of industrialization of the country (WB, 2009a).

Migration in the autarkic period or the period of economic nationalism seemed to be caused by political reasons. The period started in 1910, which was the time when individual countries closed their economies by placing restrictions on trade, investment, and immigration. Such restrictions obstructed the flow of capital and labor. Migrants in this period possessed political motives rather than economic motives to move (WB, 2009a). The majority of migrants were refugees and displaced persons.

Unlike the three earlier periods, the post-industrial period has changed the history of migration. Since the 1960s, European migrants have no longer dominated the flow of ILM. People in developing countries, mainly in Latin America, Africa and Asia, started to move in search of better opportunities either in developed countries or other developing countries. In the 1970s, the direction of ILM had altered. Italy, Portugal and Spain, which were formerly major sending countries of labors to Northern Europe and the Americas, started to receive labor from Africa and the Middle East. By the 1980s, some Asian countries including Japan, Hong Kong, the Republic of Korea, Malaysia, Singapore, Taiwan, and Thailand had experienced both in-flow and out-flow of labors (WB, 2009a: 150). Thus, the new pattern of ILM in the post-industrial period consisted of both South-North and South-South directions.

Globalization is one of the factors explaining the proliferation of migration within and between countries. Due to improvements in transportation, mass media, telecommunication,

and other infrastructures, people find it easier to move both within their country's boundary and across national borders. According to the Human Development Report 2009, the total number of internal migrants was 740 million, which was four times larger than that of international migrants (UNDP, 2009: 1). However, although there seems to be a consensus on costs and benefits of internal migration, the debates on costs and benefits of international migration remain unsettled (WB, 2009a: 161).

Given its huge volume, international migration largely occurs between countries sharing borders with each other, especially for developing countries. Globally, over 43 percent of the world migration is from developing countries to other developing countries (WB, 2011: 18). The share of migrants from the border-sharing countries in the total number of migrants was only 10 percent in the U.S., 20 percent in France, and 10 percent in Germany, but it was as large as 81 percent in Côte d'lvoire, 99 percent in the Islamic Republic of Iran, and 93 percent in India (WB, 2009a: 151).

Generally, cross-border migration tends to flow from the less developed regions to the more developed regions or from the lagging economies to the leading economies of the region (Fan, 2009: 89). The less developed regions include Africa, Asia and Latin America, whereas the more developed regions consist of North America and Europe (Fan, 2009: 89). Within each region, there is a tendency for migrants from West African countries to migrate to Côte d'lvoire; from Southern African countries to South Africa; from countries in the Greater Mekong Region in South Asia to Thailand; and from Bolivia, Chile, Paraguay and Peru to Argentina (WB, 2009a: 152).

Concomitant with the changing patterns, characteristics and reasons for migration in the 20th and 21st centuries are also getting more complex (de Haas, 2005: 3). Migrants have various reasons to move, they manage their journeys through different channels, and they prefer myriad destinations. The old assumption that only young men move in search for employment no longer holds true as research has increasingly shown that there is a feminization of labor migration and that people at different stages in their life posses different reasons to migrate, such as for education, health facilities, a better living environment, and employment. In brief, the patterns and reasons of migration have changed over time. While the former patterns were North-North and South-North and mostly for economic reasons, the new pattern also includes South-South direction, especially between countries sharing borders with each other.

ILM or migration for economic reason is predicted to remain at least for the next few decades. From the demand side, the decline in fertility and the increase in the aged population force highly-developed countries or some emerging economies to seek foreign labor, both skilled and unskilled, to fill the gaps in their labor market. Developing countries have 31 percent of their population below the age of 14, while it is only 18 percent in developed countries (Chan, 2009: 2). From the supply side, young people in developing countries, under the pressure of low income and insecurity and with accelerated access to improved infrastructure, education and mass media, tend to undertake ILM for survival or better opportunities.

In brief, the patterns and reasons of migration have changed over time. While the former patterns were North-North and South-North, the new pattern also includes South-South, especially between countries sharing borders with each other, and is much more motivated by economic factors.

2.4 Debates on the developmental roles of labor migration

Migration for economic reasons or labor migration has dominated theoretical and empirical debates over the past four decades. De Haas (2007) has classified the post World War II theoretical and policy debates into four different periods. The first period (1950s and 1960s) was dominated by the "developmentalist" optimistic thinking of labor migration and development. In contrast, the second period (1970s and 1980s) was occupied by the structuralist pessimistic thinking, inspired by the dependency theory. The third and fourth periods (1990s onwards) were a revival of optimistic thinking, and studies in these periods seem to more frequently report the positive effects of labor migration.

During the 1950s and 1960s, which was the first period of the debate, labor migration was deemed good for development. The main argument of pro-migration is on remittances, experiences and skills of return migrants as a key to economic take-off of developing countries. Besides the fact that the 1950s and 1960s were a period of developmental state or state-centered development, these two decades were a time in which South-North labor migration reached its momentum (de Haas, 2007). Governments of developing countries viewed migration as a growth engine with the hope that it would lead to the transfer of investment capital and knowledge generated through migrants' exposure to modern, liberal

society (de Haas, 2007). The neoclassical economic theories, seemingly the oldest theories of migration (Massey et al., 1993), consider rural-out labor migration good for development as it helps solve the problem of rural labor surplus and provides support to industrial sector which is deemed significant for national economic growth. However, this early perception fails to explain the role of migration-associated remittances in development.

The 1970s was a decade of paradigm shift and a turning point of migration thinking. This decade was the second period of the debate. The oil crisis in 1973 seriously affected the world economy and thus led to a cessation of transnational employment. This event influenced the world to change their development thinking towards a structuralist view. The change of development view and the increase of negative micro-level empirical evidence on labor migration have led to a pessimistic thinking of labor migration and development (de Haas, 2007).

The migration pessimists have raised several issues to discredit the contribution of labor migration in development. For example, they first claimed that labor migration has brought concomitantly negative social changes in rural setting such as growing inequality, an increase in individualism, and the breakdown of traditional culture. Second, remittances have led to a culture of dependency which turns rural communities into passive and non-productive ones. Third, absorption of young, productive labor force from rural areas impedes rural development. Fourth, against what is commonly expected by the migration optimists, micro-level studies have revealed that remittances are largely and frequently spent on luxury, consumer goods rather than on productive investment, for instance agriculture or business.

Fifth, as the process of labor migration is selective where the poorest in community and the poorest developing countries are excluded, it is not reasonable to expect that labor migration contributes to poverty reduction (Taylor et al., 1996; Nyberg-Sørensen et al., 2002; de Haas, 2006). Therefore, instead of being a driving force of development in rural areas, labor migration may turn to be a cause of further underdevelopment (de Haas, 2006: 566). Finally, although remittances are a considerably important source of income for MHHs and developing countries as a whole, critics claimed that the income from labor migration is temporary and artificial and thereby not a sound basis for development (de Haas, 2007: 6). In short, migration pessimists consider labor migration as detrimental to economic development of developing countries and a "cause of development of underdevelopment" (de Haas, 2007).

As a response to the overly rigid views of the two groups, NELM theory (Stark, 1991) emerged in the 1980s and gained popularity in the 1990s, which were the third and fourth periods of the debate, and remains popular until now as an alternative theoretical explanation for the manifold effects of labor migration (de Haas, 2007: 7). NELM theory revitalizes the academic thinking of labor migration by providing a clearer interpretation of migration-development nexus. Under this new theoretical perspective, labor migration is welcome as a road towards development. NELM theory argues that remittances enable MHHs to overcome market constraints and risks on agricultural production (Stark, 1991). In the short-run, remittances help provide supplementary incomes to finance household consumption in food, health care and education (Nyberg-Sørensen et al., 2002; de Brauw & Rozelle, 2008). In the long-run, after long-term migration, migrants have often accumulated assets, skills and

knowledge necessary to make investment in their home areas; and this investment leads to development of rural economy (de Brauw & Rozelle, 2008).

During this last period of debate, empirical studies tend to report more positive effects of labor migration despite the existence of negative findings, and scholars have approached such conflicting findings with a more open mind. Concomitant with the existing interest to examine the effects of labor migration, they also recognize the necessity to investigate factors that explain the variations in effects of migration. De Hass et al. (2009) have explained the tendency of past studies to find inconsistent findings on the effects of labor migration that those studies tend to examine causes and effects of migration separately. Ability to migrate is conditioned by a varying degree of systemic constraints, and consequently such a variation limits the extent that migration can promote structural change. This argument has led to a renewed interest in understanding the causes of labor migration and how they are related to the outcomes of labor migration.

2.5 Poverty and migrant selectivity

Regarding the causes of labor migration, the key question is what determines labor migration. Poverty is generally believed to cause labor migration; however, the discussion on migrant selectivity casts doubts on the role of poverty in explaining labor migration. Generally, migrants are either self-selective or selected among population subgroups as a result of several factors (Feliciano, 2005: 132). First of all, migrants may decide themselves whether or not to leave given their desire and required resources such as physical and financial. Second, although some subgroups are eager to migrate, they may not be able to do

so due to restrictive policies of receiving countries, which prefer to accept only certain groups of workers and not others. Third, the selective process of labor migration can possibly be a result of political and economic conditions of the sending country as well. Finally but equally influential, demand of labor in the receiving countries also determines characteristics of economic migrants.

Common aspects of migrant selectivity are concerned with some characteristics, namely gender, age, education level, health status, and socio-economic conditions of migrants (Feliciano, 2005; Boyle, 2009). Selectivity is generally classified into three types: positive, intermediate and negative (see Borjas, 1988 for a detailed theoretical explanation of each type of selectivity). The former means that migrants are the better-off group in their community or country in terms of, for example, human capital, economic condition or social status. The reason why it is called positive selectivity is because migrants with better condition in terms of the above aspects are expected to be better able to migrate and obtain greater benefit from migration. On the other hand, labor migration is said to be negatively selective when migrants have low human capital or come from the lower or lowest income group. People in the lower or lowest income group tend to have low human capital, which limits their ability to gain high return from labor migration. Finally, the term intermediate selectivity is used when migrants are drawn from the middle level in terms of any of the above aspects.

As a modified model of the Lewis's two-sector model, the Harris-Todaro model (Harris & Todaro, 1970) draws attention to migrants' expected income differentials as a driver of labor migration (de Haas, 2008: 4). Several factors including the real wage

differential, the perceived probability of getting a job in the destination area and the associated costs of labor migration influence migrants' cost-benefit calculation. The expected benefits of labor migration can be enhanced by several factors, such as education, skills, labor-market experience and the health condition of migrant. When compared among different income groups, the non-poor tend to have better performance on these aspects than the poor and the poorest. Migration costs may include travelling cost, cost of becoming unemployed during migration and early settlement at destination areas, and the psychological costs of migration. An individual will move if the benefits of labor migration overweigh the costs of labor migration.

This burden of costs and the low level of human capital suggest that labor migration is less favorable and less affordable for the poor and the poorest (Skeldon, 2002; de Haas, 2005 & 2008: 5). It is less favorable in the sense that the non-poor tend to have higher level of human capital which can help them get a better job with higher salary at the destination area than the poor and the poorest. Because of poverty, the burden of cost makes labor migration unaffordable for the poor and the poorest. This issue of poverty and capability to move becomes more serious when it comes to ILM, which involves more risks and higher costs than internal labor migration. These financial and physical burdens tend to exclude, if not the poor, then the poorest from ILM (Waddington & Sabates-Wheeler, 2003: 5; de Haas, 2008: 5; Vargas-Lundlus, 2008: 27). Moreover, there is a general observation that in any community, initial/first migrants are frequently people who are innovative and dynamic.

It is noteworthy that the early studies on migrant selectivity largely focused on educational selectivity of migrants, especially those going to the U.S. Borjas (1988) found that migrants to the U.S., Australia and Canada were positively selected in terms of education, but migrants to the U.S were the least positively selected among the three. Notwithstanding Borjas's finding, Feliciano (2005) revealed that the level of selectivity of migrants to the U.S. has become more intense recently. Regardless of decades of successive labor migration, Mexican migrants to the U.S. are still positively selected, but the level of selectivity has reduced. This finding concurs with Massey's hypothesis (1988) that the selectivity becomes less visible over successive waves of migration from the same country. Similarly, Chiquiar and Hanson (2005) also found positive selectivity of Mexican migrants to the U.S. In contrast, by using a different dataset which records information of migrants prior to their leaving for the U.S., Moraga (2011) found that on average migrants are negatively selected in terms of wage and education, but positive selection exists in rural Mexico which is probably due to credit constraints. He attributed the difference between his findings and those of previous studies on the Mexico-U.S. labor migration to the new dataset that he used and the omission of unobservable factors in past studies. The U.S. data sources utilized by past studies undercount unskilled migrants.

When compared to the educational selectivity, there have been relatively few studies that have directly analyzed the economic selectivity of migrants. Nonetheless, studies on the determinants of labor migration seem to provide varying implications on the economic selectivity of migrants, which is not always positive selection as suggested by the migration

optimists. For example, Bray (1984) revealed that despite a strong desire to migrate, some people in the Dominican Republic could not leave due to legal and financial constraints and even illegal migrants were not from the poorest areas of the country. Waddington and Satabes-Wheeler (2003) similarly found that Indian and sub-Saharan African migrants are mostly the poor but not the poorest due to their limited ownership of assets. Similarly, Clark et al. (2003) studying the determinants of CBLM in Latin America concluded that ILM, regardless of its legality, is expensive and unaffordable for the poorest. Espousing the finding of Clark et al. (2003), by conducting a review on participatory poverty assessments of 14 countries, Azcona (2009) suggested that labor migration of the poorest tends to be rural-rural or rural-urban but not across borders.

On the other hand, another group of scholars found negative selectivity of migrants in terms of economic condition. Bhandari (2004) reported that most relatively deprived Nepalese households, in terms of landholding, were more likely to send a member away than the reference group, and the relatively well-off households were less likely to have a migrant when compared to the reference group. Sabates-Wheeler et al. (2008) found that subjectively poor and very poor Ghanaian and Egyptian individuals are more likely to migrate than the subjectively non-poor individuals. Likewise, migrants from Mexico and Paraguay are from the bottom of the income and education distributions, but migrants in Peru, Nicaragua and China are not from the poorest families (UNDP, 2009). Thus, while the positive selectivity of migrants in terms of education appears to be a nearly universal phenomenon, doubt remains about the effect of income or wealth on labor migration (Hanson, 2010: 4378).

Several scholars have provided some explanations for the inconsistent findings on the economic selectivity of migrants. First, Chiswick (1999) suggested in his theoretical paper that positive selectivity is most likely to exist when labor migration requires a large amount of out-of-pocket money and is made to a country with relatively smaller skill differential. Second, de and Yaqub Haan (2009) stressed that while positive selectivity is visible in South-North labor migration, South-South labor migration is less costly and thus could be more affordable for the poor and the poorest, especially when it is between countries sharing a porous border and historical and cultural similarities. Third, Durand and Massey (1992) and McKenzie and Rapoport (2007) stated that educational and socio-economic class composition of migrants is determined by the growth and elaboration of migrant networks.[9] Finally, the modest representation of the poorest in the survey and census is probably due to the limitation

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[9] Components of migrant network are classified in different ways by various scholars. Massey et al. (1993: 448) generally define network as 'sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin'. More specifically, Faist (2004: 31) classifies migrant network into two groups: strong ties (families and households) and weak ties (network of potential movers, brokers, and current migrants). This categorization takes into account the depth of relationship between migrant and the networks. To best explain the functions of networks in facilitating undocumented migration, Akm (2009: 7) divides migrant networks into two types: 'interpersonal networks' and 'recruiting networks'. The former is composed of the ties that link migrants with relatives, neighbors and friends abroad or returned, while the latter is made up of agents, brokers and those who receive payment for their services in assisting migrants to move (Akm, 2009: 7). Rather than substituting for one another, each component of migrant networks supplements each other to make migration possible. Migration networks help reduce positive selectivity of migrants by reducing both pecuniary and non-pecuniary costs and risks associated with migration (Massey et al., 1993: 448). The pioneer migrants send back home information about the destination area including job and living conditions, provide assistance in terms of housing, employment and other resources which can lower the costs and risks of subsequent migration of their relatives or friends; this connection induces a new flow of migration (Massey et al., 1993; de Haas, 2008: 19)

of those tools rather than the actual low propensity of the poorest to migrate (de Haan and Yaqub, 2009). Because of the very low human capital and less access to network, the poorest might not be able to undertake formal labor migration through recruitment agencies but rather migrate through illegal channels, which pose great challenges for the survey or census to capture.

Summarily, although labor migration is generally believed to be caused by poverty, the theoretical and empirical discussions on the economic selectivity of migrants have strongly suggested that not all people can migrate as they wish and migrants are generally positively selected. However, a number of explanations of the existing scholars as discussed above suggest that migrant selectivity is determined by several factors, such as costs of migration, skills required in the destination areas, direction of migration (whether South-North or South-South), migration history of the sending area or country, and source of data used for analysis. Therefore, migrants may not always be positively selected as suggested by the migration optimists. In addition to poverty, several other factors also influence labor migration. The following section provides a brief review on the effects of those factors.

2.6 Determinants of labor migration

Similar to poverty, labor migration can be caused by many factors inherent in the region, community, household and individual. At the regional/national level, past studies have revealed a large number of macro determinants of labor migration. Different factors are significant in different contexts. Traditionally, past studies were so keen to test the effect of wage differential between sending and receiving areas on labor migration. Gradually, research

has found the influence of other macro factors which are not necessarily economic-related. For example in the case of Philippines, Agbola and Acupan (2010) revealed that the level of unemployment, adult literacy, population density and government instability influenced labor migration. Naudé (2010) found the evidence of primary effect of armed conflict and lack of job opportunities and secondary effects of demographic and environmental pressures as determinants of out-migration from 45 Sub-Saharan African countries. The domestic political situation, in addition to the economic differential, is also an influential factor on labor migration from 86 African and Asian countries to Germany (Rotte & Vogler, 1998).

Several community factors, for example infrastructure, level of human resource development, availability of employment, play a very important role in determining the outflow of labor migration from the community. However, the effects can be both positive and negative. For example, Massey, Williams, Axinn and Ghimire (2009) have found in the case of Nepal that, in the short-run, the expansion of economic and human capital infrastructures reduced the outflow of labor migration, but this development enabled the individuals and households to accumulate human and social capital, which induced out-migration in the long-run. Therefore, development of economic and social infrastructures in the community has countervailing effects on labor migration.

Regarding household and individual level characteristics, several demographic, economic, and social factors can explain why some households have migrants while others have not, but their effects are also mixed. While Görlich and Trebesch (2008) revealed in their study on migration in Moldova that household size had a positive and significant effect on

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labor migration; Hagen-Zanker, Siegel and de Neubourg (2009) found a negative and significant effect of this variable in the case of Albania and also Moldova. Sabates-Wheeler et al. (2008) reported that migrants were from medium and large households in Ghana but from small households in Egypt. Thus, the effect of household size on labor migration is unclear.

One plausible explanation for the inconsistent effects of household size lies with household structure/composition. While poor households tend to have greater number of household members aged 15 or younger, it is unclear how the presence of these dependents affects migration decision in the households. In the case of rural Ecuador, Gray (2009) found complex effects of the household structure on labor migration. Local mobility increased with the number of minors in the household but decreased with the number of older adults; urban labor migration increased with the number of adult women; but ILM decreased with the number of minors and older women. Likewise, Görlich and Trebesch (2008) also showed that the number of dependents (aged 15 or younger) had a negative and significant effect on labor migration from Moldova but when it was replaced by the number of household members aged 6 and younger, the variable became insignificant in explaining labor migration.

While there is an abundance of studies testing whether or not migrants are selective in terms of age, marital status, gender and education as these factors represent a level of human capital (Adams, 2005; Germenji and Swinnen, 2005; Görlich & Trebesch, 2008; de Haan & Yaqub, 2009; Gray, 2009), little evidence is available regarding the effects of these characteristics in the case of household heads. Using data from Turkey, Tunali (2000) found that education of parents had a positive effect on labor migration of their children.

NELM theory claims that households consider labor migration as a means to overcome credit constraints on investment in agricultural production or new economic activities (Stark, 1991). Thus, if the proposition of NELM theory holds true, then households that have fewer numbers of economic activities should be highly motivated to migrate. Germenji and Swinnen (2005) analyzed the determinants of Albanian irregular labor migration and found that household's increased access to alternative income source and credit reduced the propensity to migrate.

Ownership of property or assets also determines out-migration. One of the most influential assets on poverty as well as labor migration is land. However, while its effect on poverty is relatively clear, its effects on labor migration remains doubtful and can change over time (de Haan & Yaqub, 2009). Past studies on the effects of land can be classified into three groups. In line with the conventional wisdom that poverty causes labor migration, the first strand of literature found that large landholding decreased out-migration (Jokisch, 1997; Davis, Stecklov & Winters, 2002; Vanwey, 2005; Mendola, 2008; Azcona, 2009). In contrast, the second strand of literature showed that migrants are less likely to come from landless households or households with small size of landholding (de Haan, 1999; Waddington and Sabates-Wheeler, 2003; Vanwey, 2005). Finally, the third strand shows conflicting findings on the effect of landholding on different types of labor migration (Massey and Espinosa, 1997; Laurian and Bilsborrow, 2000; Gray, 2009).

Vanwey (2005) outlines four ways in which land can influence labor migration, which can explain why the findings on effects of landholding are not uniform. Firstly, if it represents

household's wealth, large landholding enables the household to finance costly labor migration. Secondly, large landholding can mean available employment for household members, which make migration unnecessary. Thirdly, if land represents the needs for investment, then it is reasonable to expect the curvilinear effect of land on labor migration. For example, Winters, de Janvry and Sadoullet (2001) found in the case of Mexico that the positive effect of land is not observed, unless households own about 15 hectares of land or more; otherwise land has a negative effect on labor migration. Finally, in the case of relative deprivation, merely landholding does not have any effect on labor migration, but the equity of land distribution surely does, and relatively smaller size of landholding induces labor migration. For example, Bhandari (2004) found in the case of Nepal that most relatively deprived households in terms of land were more likely to send a migrant away for work than the reference group.

2.7 Effects of labor migration on poverty

2.7.1 The New Economics of Labor Migration (NELM) theory

Although the neo-classical micro economic theory throws some light on how individual/household's poverty affects labor migration, it does not touch on the effects of labor migration on household's poverty. Moreover, de Haan and Yaqub (2009: 2) have pointed out that a weakness of this theory is that its two-sector characterization simplifies patterns of labor migration by overlooking some patterns of labor migration common to the poor and the poorest, for example rural-rural labor migration or South-South labor migration; therefore, it cannot explain well the effect of labor migration by the poorest. On the other

hand, NELM theory, which is the currently dominant migration theory, discusses in relative detail about the effects of labor migration on households.

Unlike the neoclassical micro economic theory which focuses on the individual as a decision maker deciding whether or not to migrate, NELM theory emphasizes the role of family. Migrants and the rest of family members make an "implicit contractual arrangement" on the distribution of costs and returns of labor migration. According to this theory, remittances are sent home as a response to the contractual arrangement between migrants and families prior to migration (Stark, 1991: 25). This theory does not view migrants independently from their families but as mutually interdependent. Thus, labor migration is a "calculated strategy" of the households by which both migrants and their families are better off as a result of labor migration (Stark, 1991: 26).

It is worth noting that one of the criticisms raised by the migration pessimists is on the non-productive uses of remittances. In response to this criticism, NELM theory argues that the effects of labor migration should be assessed in the short-run and the long-run. In the short-run, remittances help provide supplementary incomes to finance household consumption in food, health care and education (Nyberg-Sørensen et al., 2002; de Brauw & Rozelle, 2008). In the long-run, after long-term migration, migrants have accumulated assets, skills and knowledge necessary to make investment in their home areas since households decide to undertake labor migration as a risk-sharing behavior and as a strategy to overcome credit constraints. Households under credit constraints, which are generated from the imperfection or absence of crop insurance market, future markets, unemployment insurance and capital

markets (Massey et al., 1993), may send their children to work in the urban area or abroad in order to gain additional income to fund their agricultural production or new economic activities (de Haas, 2007; de Brauw, 2010).

More concretely, de Haas (2007) has developed a framework to explain the relationship between stages of labor migration and effects of labor migration on households left-behind. As shown in Table 2.1, at the first stage of labor migration, migrants are still in the process of settling down in the destination areas, and they thus are not able to send a big amount of remittances. As a result, remittances could just fulfill households' most urgent needs such as food, health care, debt repayment, or expenditure on education of children. It is not until the second stage of migration when migrants have relatively more stable job and are better settled down that the amount of remittances is large enough to finance housing construction, land investment, or the purchase of household amenities.

At the final stage of labor migration, there could be three possible outcomes. First, after a significantly long period of labor migration with migrants continuing their work at the destination areas, households would be able to invest in higher education of their children or diversify their economic activities. However, in addition to the significantly large amount of remittances, to what extent they can invest depends on the investment climate of their home area and the socio-economic conditions of migrants and their households. Second, upon their return, migrants can continue their household's investment which is financed by their remittances. Finally, it is possible that after a long period of stay in the destination area, migrants may bring their family along. Traditionally, this family reunification is considered

negative for development of the origin areas as migrants will no longer send home their remittances. Instead, they will spend their income in the destination areas. However, empirical evidence has weakened this view as migrants seem to maintain their original identities, keep contacts with their relatives and make productive investment in the origin areas. In short, the framework supports NELM theory regarding the short-term and the long-term effects of labor migration

Table 2.1: Relationship between Stages and Effects of Labor Migration

Stage		Labor Migration	Consumption and investment patterns
I		Migrant is in the process of settling	Most urgent needs are filled if possible; food, health, debt, repayment, education of children
II		Migrant is settled and has more or less stable work	Housing construction, land purchase, basic household amenities, continued education
Three possible outcomes	IIIa	Ongoing stay	(Higher) education of children and diverse investment: commercial housing and land, shops, craft industries, agriculture. Magnitude, spatial and sectoral allocation, depending on household income, macro and local development/investment context
	IIIb	Return	Continuing investment (as IIIa) if the household has access to external income (for example, pensions, savings or creation of business)
	IIIc	Family reunification	Traditional view: no significant investment besides help to family/community members; this view is challenged by the evidence that more and more migrants seem to adopt transnational lives and identities, which may be associated with continued home countries engagement and/or investment

Source: de Haas (2007:16)

2.7.2 Empirical evidence on the effects of labor migration

Notwithstanding the NELM 's proposition on the short-term and the long-term effects and de Haas 's framework on the three stages of labor migration, past studies are more interested in testing the long-term effects of labor migration on agricultural production and

economic activities because they are investments that lead to higher household income and thus are good for poverty reduction. The mixed results on the production effect have attracted another group of scholars to explain why the negative production effect exists. The common approach employed by the latter group of scholars is to analyze household's remittance spending behaviors, and their results frequently reveal that MHHs tend to spend their remittances on consumption such as food, housing, education, health care and other basic needs rather than investment. Below is a brief review of the existing empirical findings.

The findings on the production effects, which commonly include land acquisition, agricultural production and investment in a new economic activity, are mixed. For example, although the evidence is not strong, Damon (2010) found that labor migration and remittances led to agricultural asset accumulation in the form of land and livestock. By using household survey data from four villages in Burkina Faso, Wouterse and Taylor (2008) found that inter-continental migration, which provides a larger amount of remittances, can help households diversify into livestock production through reducing entry barriers generated by imperfect credit markets. McCarthy et al. (2006) found that remittances could compensate for the loss of labor in Albanian migrant households and eventually led to improvement in the agricultural production and household income.

However, another group of studies, in contrast, found negative effects of migration on agricultural production. For example, by using four-year panel data, Damon (2010) found that in El Salvador MHHs who receive remittances relocated land use away from commercial cash crops toward less labor-intensive production of subsistence food crops. Likewise, migration has led to decreased agricultural productivity because of imperfect substitution of labor in China and North Vietnam but to an increased production in other crops (Rozelle et al., 1999; de Brauw, 2010). Finally, based on household survey data from four villages in Burkina Faso,

Wouterse and Taylor (2008) found that inter-continental migration has negative effects on the staple production and diversification into any higher return but labor-intensive activity.

The main argument behind the unsupportive role of labor migration for agricultural production is that households spend remittances on consumption rather than investment. This has guided direction of research into studying how the remittances are used by households left-behind. De Brauw and Rozelle (2008), in their study on China, found that migrants from non-poor villages used remittances to improve their current quality of life, for example investing in house and buying durable goods, while migrants from poor villages could just use remittances to increase their current consumption on basic needs. Neither poor nor non-poor migrants made any productive investment such as investing in agricultural production or in small businesses. Similarly, in the case of Philippines, remittances also have a positive impact on housing, consumer goods, non-land assets, total expenditures (per adult equivalent), and educational expenditures but not on agricultural production or other productive investment (Quisumbing & McNiven, 2010).

Notwithstanding the consistent findings that MHHs spend remittances on consumption more than on productive investment, the effects of labor migration on education remain unclear. For instance, remittances are found correlated with an increased investment in education of left-behind household members in Philippines (Yang, 2005), and the share of educational expenditure is greater for MHHs than non-MHHs in Guatemala (Adams, 2005). In El Salvador, the receipt of remittances is a key explanatory variable for the reduced drop-out rate, and the effect is much more significant in urban areas than in rural areas (Edwards & Ureta, 2003). Studies in Mexico and Nepal also found attribution of remittances in the

improved educational performance of children in MHHs (Thieme & Wyss, 2005; Hanson & Woodruff, 2002 cited in Rapoport & Docquier, 2005).

On the other hand, labor migration can negatively affect education through reducing households' incentives to invest in education. If the opportunity to migrate is very attractive and seems to provide higher economic returns, households may be less motivated to invest in education. This is often the case in low-skilled and undocumented labor migration. Findings from studies in Mexico showed that children's education is negatively affected by ILM (McKenzie and Rapoport, 2011). In other words, incentives to migrate are bigger than incentives to stay in education. Hence, labor migration and remittances can have either negative or positive impact on education depending on various factors such as existing incentive structures, migration opportunity and perceived size of economic returns.

Taking the NELM 's proposition and de Haas 's framework into consideration, it is not surprising that past migration studies report mixed effects of labor migration on productive investment and consumption. Both types of effects are important for development, and migration pessimists' denial of the contribution of migration due to its non-productive effects is weakened for two reasons. First, different definitions of productive investment can also lead to different conclusion on impacts of labor migration (Conwey & Cohen, 1998: 34). While the conventional definition of productive investment did not regard expenditure on education, health, food, housing and other community projects, Sen's capability approach of development suggests that they should be considered as development because these expenses lead to improvement in human's well-being (Sen, 1987). For example, the investment in

education, health and food boosts individuals' physical and mental strengths, which determine their current and future economic capability. Moreover, the investment in housing provides MHHs a clean, safe and spacious living environment. This explanation concurs with the definition of poverty in Section 2.1.1, which considers expenditures on education, food, health, and housing a part of human's basic needs. Hence, the fact that remittances from labor migration satisfy these needs already signifies the role of labor migration in poverty reduction although it has no substantial effects on agricultural production or income generating activities.

Second, the criticisms on migrant's unproductive use of remittances ignore structural rigidities in migrant sending areas (de Haas, 2007). In developing countries where security is a concern, investment in a house, which is a relatively safe type of asset, is deemed the best option. Adams (1991) concluded in his study on the use of remittances in Egypt that on a practical level, the distinction between consumption, durables and investment is obscure, especially when examining from the MHHs' point of view. MHHs considered housing investment and land purchase the best investment option in the midst of increasing price of land, inflation rate and lower return of other investments. Therefore, given the uncertainties prevailing in developing countries, MHHs' spending on house, land and other speculative investments is considered rational.

In summary, apparently it is of little importance whether labor migration leads to households' higher consumption level or more investment in agricultural production or economic activities; instead, what matters is the existence of the positive effects. Based on the

review on the definition of poverty in Section 2.1.1, as long as labor migration produces an improvement in any of these two aspects (either consumption or investment), it clearly contributes to development. The question, thus, does not concern the type of the effects but whether or not the positive effect exists and what determines the existence of the effects. What follows is a discussion of the factors that influence the effects of labor migration.

2.7.3 Determinants of the effects of labor migration

Although there is an assumption, reached after a long period of debate, that factors causing labor migration may also affect the outcomes of labor migration and that future research should take determinants of labor migration into consideration, only a few studies have considered the effect of migrant selectivity.

A substantial, seemingly unchallenged, criticism made by migration pessimists is that instead of contributing to poverty reduction, labor migration may exacerbate poverty and inequality in communities since the poorest in communities and the least developing countries cannot afford labor migration as a livelihood strategy. Due to the burden of costs and risks, especially for ILM, only the non-poor with better human capital and economic conditions are able to undertake labor migration and obtain higher benefits from it. Although in some cases the poor also migrate, their lower level of human capital reduces the benefits they can obtain from labor migration. However, based on de Haan and Yaqub (2009)'s caveats on migrant selectivity that positive selectivity can be less visible in the case of South-South CBLM, there is a possibility that migrants may include people from the lowest income group as well. In this

case, it is unknown to what extent the poorest could reduce their poverty after labor migration when compared to the poor and non-poor.

A review of the findings of existing studies has revealed that the effects of labor migration are determined by some migration characteristics. For example, migration of men or women, in short-term or in long-term, or internally or internationally produces different impacts on MHHs.

The effects of migration may depend on the gender of the migrant. Findings from various studies tend to suggest that female migrants are more committed to send money home. This commitment is reflected not in terms of the amount of remittances due to their lower wage but in terms of frequency of remittance sending (Osaki, 1999; Tacoli, 1999). This finding is explicable in terms of women's stronger emotional attachment to their family and their expected social obligation (de la Brière, Sadoulet, de Janvry & Lambert, 2002; Blue, 2004). Moreover, female migrants seem to prefer the use of remittances to improve households' well-being, while generally male migrants remit in the hope of subsequent inheritance or for their future investment (de la Briere et al., 2002; Vanwey, 2004; Pfeiffer and Taylor, 2007). For example, Mexican male migrants, to a higher degree than female migrants, intended to return to their home areas and thus were motivated to remit the money for their family to make investment in areas such as agricultural production, housing, business, and land (de la Cruz, 1995 as cited in Guzmá, Morrison & Sjöblom, 2008). On the other hand, female migrants were more concerned about education and the health condition of left-behind family members rather than their own future returns. Similarly, Moldova female migrants

stated that they prefer their remittances to be used on consumption – including food, clothes, and household equipments – and productive investment such as education, health, furniture and loans, while male migrants wanted their remittances to be spent on investment (IOM, 2005).

Likewise, the destination of labor migration also has influence on the migration outcomes. With their higher level of skills, international migrants are expected to remit more than internal migrants. International remittances, therefore, enable households to invest in agricultural production and small business (see for example de Haas, 2001; Rapoport & Docquier, 2005), whereas internal remittances result in agricultural hindrance and underdevelopment of rural areas (see for example de Haas 2001; Regmi & Tisdell, 2002). In the case of Bangladesh, households that engage in ILM tend to adopt modern farming technology and achieve higher productivity than internal MHHs (Mendola, 2008). Many commentators believed that ILM, with its larger amount of remittances, enables migrant households to sustain their living in rural areas (de Haas, 2007).

Finally, the effects of labor migration may be determined by the duration of migration as well. The amount of remittances is observed to increase with the duration of migration (de Haas, 2007). In their study on CBLM from Cambodia, Lao PDR and Myanmar to Thailand, Jampaklay and Kittisuksathit (2009) found that the amount of remittances peaked at three-year duration but declined when the duration reaches 10 years.

2.8 Analytical framework

Based on the above theoretical and empirical reviews, I developed an analytical framework for use in this study. Figure 2.1 shows how poverty affects CBLM and how CBLM affects poverty reduction in terms of households' consumption and production.

Figure 2.1: Analytical Framework
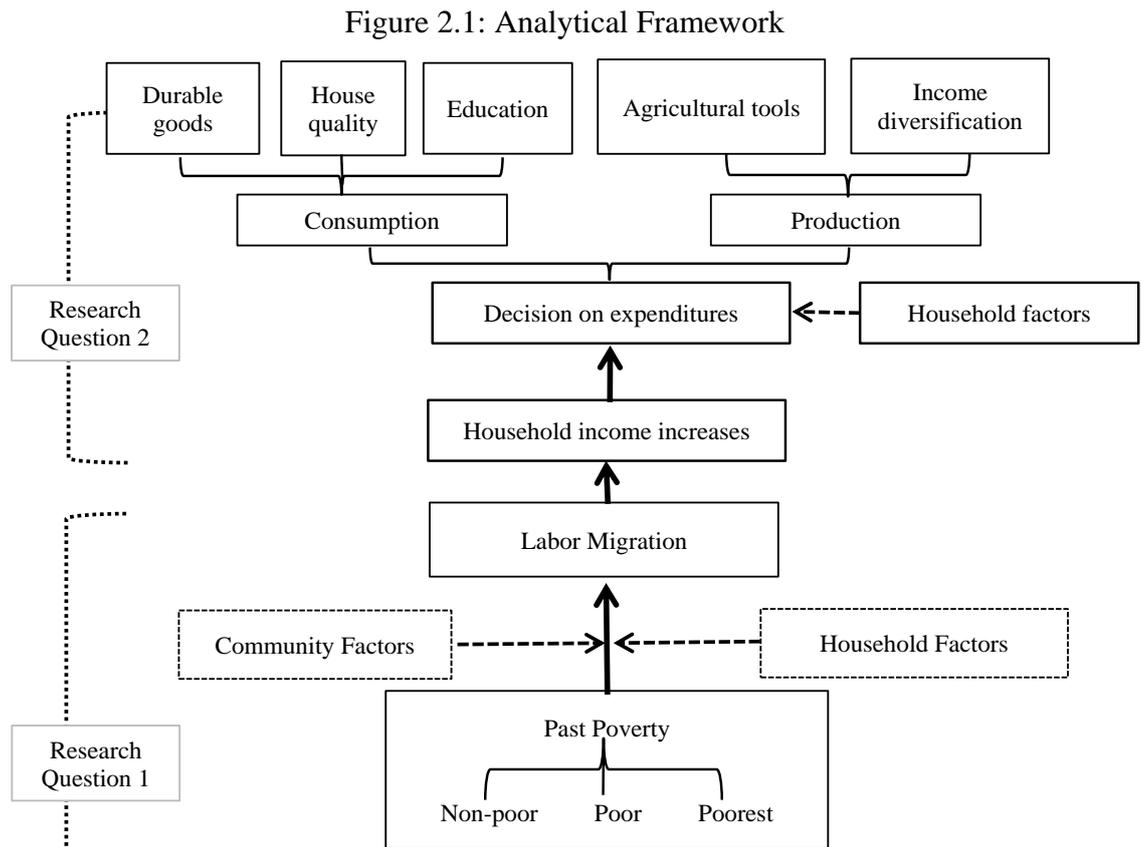
Source: Modified from Malek & Usami (2010)

The probability to migrate differs depending on household economic condition. Based on the assumption of the neo-classical micro economic theory, non-poor households should have the highest probability to migrate and be able to finance subsequent migrants at the same time. However, according to the caveats addressed in existing studies (Durand & Massey, 1992; de Haan & Yaqub, 2009), in the border context where extensive migration networks

exist, poorest household may have high representation in the migration outflow as well. However, due to the lack of empirical studies on the economic selectivity of cross-border labor migrants in South-South direction, it remains unknown whether or not the general belief on migrant selectivity can be applied to South-South CBLM.

At the same time, the debates on poverty-migration nexus still revolve around whether or not labor migration contributes to poverty reduction. As discussed in Section 2.7, there seem to be three strands of literature on the effects of labor migration. The first strand tends to examine the effects of labor migration or remittances on households' productive investment and reports conflicting findings. The second strand, in contrast, uses alternative approach to explain the effects of labor migration by examining households' remittance spending behaviors and often finds that remittances are spent on consumption more than on production. The final strand of literature tries to explain why the production or consumption effect exist in some cases but not in the other cases by focusing on, for example, gender aspect, duration or destination of migration. Although the debates on poverty-migration nexus involve the issue of migrant selectivity, the final strand of literature fails to consider the influence of migrant selectivity when examining the effects of labor migration. The quality of the current debates on labor migration seem to suffer from a lack of research examining the effects of labor migration on broader/comprehensive aspects of poverty and the determinants of the effects by including migrant selectivity together.

To fill the gap in the existing literature, I examine how poverty affects CBLM as the first research question. In this first research question, I measured households' poverty by their

size of landholding. Concretely, I first analyze whether poverty leads to positive, intermediate or negative selectivity of Cambodian labor migrants to Thailand. Secondly, I analyze whether the influence of poverty as a constraint to CBLM declines recently, and thirdly I examine if the influence of poverty as a constraint to CBLM declines as each subsequent labor migration occurs in a certain household. If the existing literature is correct in predicting the effect of migration networks in reducing the costs of labor migration for subsequent migrants, the poorest and the poor should be more able to migrate recently and send out more migrants than the non-poor since the research site has a long history of CBLM.

I classify households into three different groups according to their size of landholding. The poorest households are those who own less than a hectare of land; poor households are those who own from a hectare to less than two hectares of land; and finally non-poor households are those who own more than two hectares of land. As shown in the lower part of the analytical framework, households' labor migration is affected by their poverty level, community characteristics, and other household factors. Therefore, I control for the effect of several community and household factors when analyzing the effect of poverty, measured by the size of landholding, on households' CBLM (a detailed explanation of methods and variables provided in Chapter 4).

Moreover, I also aim to fill the gap by examining the effects of CBLM on poverty reduction as the second research question. Specifically, I analyze whether or not CBLM affects households' consumption and production and what explains variations in the effects of CBLM. As shown in the upper part of the framework, as a result of CBLM, households could

increase their income. They need to decide whether they spend their income on the consumption or the production side. However, their decision may be influenced by community and other household factors. Due to the limitation of data and characteristics of the method used for analyses, I could control only the effects of a few household factors (a detailed explanation of methods and variables is provided in Chapter 5).

Following the broader definition of poverty, any positive effect on either consumption or production is considered contributing to poverty reduction. Therefore, in this study, I examine the effects of CBLM on three indicators of consumption effect – ownership of durable goods, house quality and education – and two indicators of production effect – ownership of agricultural tools and households' income diversification. According to NELM theory (Stark, 1991) and de Haas's framework (2007), labor migration is expected to finance consumption in the short-run and promote production/investment in the long-run. Therefore, remittances from CBLM may contribute to poverty reduction by fulfilling MHHs' basic needs in terms of ownership of durable goods and house quality in the short-run and education in the long-run. After fulfilling their consumption needs, MHHs may be able to invest in their production. So, the production effect is likely to occur in the long-run.

2.9 Chapter summary

This chapter has shown that the changing patterns and characteristics of labor migration have led to growing interests in studying the causes and effects of CBLM. Drawing on the substance of debates on the relationship between poverty and labor migration, it is apparent that the effects of poverty on labor migration and vice versa have not yet been

clearly proved. Poverty may have different effects on labor migration in the South-North and South-South directions. While it is generally observed that positive selectivity exists to a great extent in the case of South-North direction, evidence is still lacking in the case of South-South labor migration, especially in the border context where porous border and extensive migration networks exist. As for the effect of labor migration, little is known about how migrant selectivity influences the effects of labor migration on poverty reduction. These gaps serve as a motivation for this study.

Chapters 4 and 5 provide empirical evidence on the causes and effects of South-South CBLM by taking the CBLM from Cambodia to Thailand as a case study. However, before presenting the research findings, it is necessary to understand background information about Cambodia, especially its labor migration and poverty situation, and to consider why Cambodia is appropriate as a case study. The following Chapter 3 provides this information.

Chapter 3: Poverty and Labor Migration in Cambodia

To better understand the relationship between poverty and labor migration in Cambodia, it is necessary to firstly understand the poverty situation in Cambodia. This chapter, therefore, is organized as follows. Sections 3.1 and 3.2 review the overall progress of poverty reduction in Cambodia and the characteristics of Cambodian people living in poverty. To explain why a study on the causes and effects of labor migration is needed for Cambodia, Section 3.3 describes the significance of ILM for Cambodia by examining firstly the economic performance of Cambodia and its implications for the labor market and secondly how labor migration is integrated into various national development plans as an element of employment generation strategy. Section 3.4 presents detailed information about Cambodian labor migration including key statistics, typology of migrants, migration process and problems migrants in each destination are facing. Section 3.5 reviews the regulatory framework and policies that regulate the outflow of Cambodian workers to foreign countries. Since the present study focuses on the Cambodia-Thailand CBLM, I provide a brief review of the importance of CBLM for Thailand in Section 3.6 and summarize the cited causes and effects of labor migration in Cambodia in Section 3.7. Finally, Section 3.8 concludes the chapter.

3.1 Overall progress of poverty reduction

Similar to other developing countries, the RGC has been working very hard to achieve an overriding goal of poverty reduction, but the achievement is not very satisfactory despite remarkable economic growth in the past decade. According to the household data from three

Cambodia Socio-Economic Surveys (CSES),[10] the poverty level in Cambodia has experienced a constant decline but at a low rate. Overall, by headcount index, poverty in Cambodia fell from 39 percent in 1993/94 to 34.78 percent in 2004 and 30.14 percent in 2007. The incidence of poverty is lower when measured by the food poverty line. However, the average food poverty line of Cambodia experienced only a modest decline from 20 percent in 1993/94 to 19.71 percent in 2004 and 17.98 percent in 2007.

Poverty is not equally distributed across regions, and it is highly concentrated in rural areas. In 2007, the poverty rate in Phnom Penh, either by the poverty line or the food poverty line, was less than one percent, and the rate in other urban areas was 21.85 and 12.73 percent by the poverty line and the food poverty line respectively. However, the rural areas of Cambodia had as high as 34.7 percent by the poverty line and 20.78 percent by the food poverty line, which is higher than the poverty rate of Cambodia in both respective lines (see Figure 3.1). Thus, it can be seen that poverty in Cambodia is primarily a rural phenomenon.

Figure 3.1: Changes in Poverty Incidence (%), 1993/94-2007
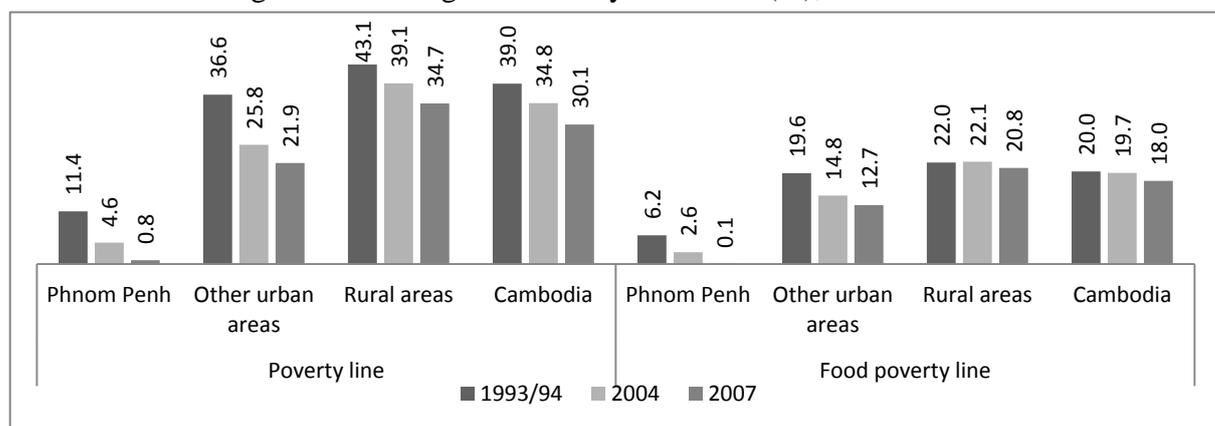
Source: RGC (2006) and WB (2009b)

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[10] The three CSES were conducted by the National Institute of Statistics in 1993/1994, 2004, and 2007. The 1993/94 survey covered only 56 percent of the rural areas, 62 percent of total population and 65 percent of rural households. The coverage could not be nation-wide due to security reasons. The 2004 survey instead covered samples from all areas in the entire country. The 2007 survey in contrast excluded some provinces due to cost and other reasons but included some areas covered by the 2004 survey.

3.2 Characteristics of people living in poverty

In addition to the economic indicators, social indicators are another important aspect to measure the progress in poverty reduction of a country and can be observed at village, household and individual levels. As this study focuses on out-migration from rural areas, I present the progress in poverty reduction on several social indicators which are more relevant for rural areas. Since the principal interest is how the poorest, poor and non-poor differ from each other, I present all indicators by consumption quintiles: 1: poorest, 2: poor, and 3: middle/non-poor, 4: next richest, 5: richest. The value of each indicator is a result of the 2007 CSES.

The Poor and the non-poor in Cambodia are different with regards to several characteristics of the village in which they live. The poorest tend to live in smaller villages with smaller available agricultural land and further from the nearest lower secondary school when compared to the poor and non-poor (see Table 3.1).

Table 3.1: Selected Village Characteristics by Consumption Quintiles, 2007

Indicator	Consumption Quintiles					Cambodia
	1	2	3	4	5	
Village population	1118.0	1392.0	1463.0	1750.0	2935.0	1734.0
Agricultural land (hectares)	232.0	273.0	251.0	271.0	196.0	246.0
Distance to the nearest lower secondary school (km)	4.8	4.3	4.2	0.9	0.2	0.8

Source: WB (2009b)

The characteristic of the household head is also an important indicator to inform about poverty level of the household. On average, household heads in Cambodia are about 45 years old, and the poorest households tend to have youngest heads (44.4 years old), compared to the other two groups (poor = 44.9 and non-poor = 45.1 years old). Although the general belief is that households headed by women have poorer economic condition than those headed by men, the result of the 2007 CSES has shown that only 16.6 percent of the poorest households are headed by women, whereas 19.2 percent of non-poor households are managed by women. The poverty level is not significantly different by marital status of the household heads but does differ by education and occupation. Heads of the poorest households tend to be lower educated than those of poor and non-poor households and mainly engage in agriculture more than non-poor households (see Table 3.2)

Table 3.2: Selected Characteristics of Household Head by Consumption Quintiles, 2007

Indicator	Consumption Quintiles					Cambodia
	1	2	3	4	5	
Age (years)	44.4	44.9	45.1	45.2	48.4	45.6
Female (%)	16.6	16.2	19.2	19.1	20.2	18.3
Married (%)	83.4	82.9	83.3	82.9	81.9	82.9
Highest school grade completed	3.3	4.0	4.3	4.9	7.4	4.8
Main job is in agriculture (%)	64.8	67.0	62.1	48.9	20.0	52.6

Note: % is percentage of household in each quintile.

Source: WB (2009b)

Household size and composition vary systematically among consumption quintiles. The richest quintile has the smallest household size and is least likely to have children under age 15 but is most likely to have working-age adults when compared to the four poorer groups (see Table 3.3).

Table 3.3: Selected Household Characteristics by Consumption Quintiles, 2007

| Indicator | Consumption Quintiles | | | | | Cambodia |
	1	2	3	4	5	
Household size (persons)	6.4	5.8	5.4	5.2	5.3	5.7
Children under age 15 (%)	42.8	38.5	34.3	32.6	26.2	35.3
Working-age adults, 15-59 (%)	52.7	55.8	60.6	61.6	66.7	59.1

Note: % is percentage of household in each quintile.
Source: WB (2009b)

The Poor and non-poor are also different in terms of house quality and ownership of durable goods. Houses of the poorest are more likely to be small, with thatched roofs, and to have walls made of wood, logs or plywood than those of the poor and non-poor. Moreover, the poorest are less likely to own several common durable goods including a radio, a television, a cell phone and a motorbike than the poor and non-poor (see Table 3.4).

Type of income sources differentiates the poorest, poor and non-poor. The poorest are more likely to engage in the agricultural work, livestock farming, fishery, or the collection of common natural resources, for example firewood, than the poor and non-poor (see Table 3.5). However, the poorest are least able to undertake the high-return but high-cost economic activity, namely small business.

Table 3.4: House Quality and Ownership of Durable Goods by Consumption Quintiles, 2007

| Indicator | Consumption Quintiles | | | | | Cambodia |
	1	2	3	4	5	
Number of rooms per capita	0.2	0.2	0.3	0.3	0.5	0.3
Thatched roof (%)	35.2	26.6	21.5	11.3	3.9	19.7
Tiled roof (%)	24.2	29.9	29.3	35.2	26.4	29.0
Having walls of wood, logs or plywood (%)	38.6	41.8	54.5	54.6	43.9	46.7
Radio (%)	28.8	32.6	41.2	43.5	49.4	39.1
Television (%)	42.5	51.4	59.5	72.3	90.6	63.3
Cell phone (%)	3.6	8.9	15.5	33.7	73.3	27.0
Motorbike (%)	14.8	24.5	34.3	51.0	74.7	39.8

Note: % is percentage of household in each quintile.

Source: WB (2009b)

Table 3.5: Income Sources of Households by Consumption Quintiles, 2007

| Indicator | Consumption Quintiles | | | | | Cambodia |
	1	2	3	4	5	
Owns or operate agricultural land (%)	89.1	85.1	83.7	72.0	39.1	73.8
Grows crops (%)	88.4	84.3	80.8	66.4	32.9	70.5
Raises livestock (%)	88.8	86.8	83.2	71.6	37.2	73.5
Catches fish/seafood (%)	75.2	66.1	58.9	41.6	17.0	51.7
Collects firewood or other forest products (%)	91.3	86.6	78.3	62.6	25.2	68.8
Operates one or more businesses (%)	23.4	23.9	32.2	43.2	56.5	35.8

Note: % is percentage of household in each quintile.

Source: WB (2009b)

Finally, each consumption quintile is dissimilar in several aspects of education. In 2007, the poorest quintile had the highest percentage (31.2 percent) of individuals aged 5 and over still enrolling in school, but the enrolled grade and the highest completed grades were lower than those of individuals in other quintiles. Similarly, the poorest quintile also had the smallest percentage of individuals who had attended school when compared to other quintiles (see Table 3.6).

Table 3.6: Education Characteristics by Consumption Quintiles, 2007

Indicator	Consumption Quintiles					Cambodia
	1	2	3	4	5	
Currently enrolled in school, age 5+ (%)	31.2	30.8	29.7	29.9	28.4	30.0
Grade in which currently enrolled	3.8	4.4	4.9	5.5	7.4	5.2
Highest grade completed, age 5+	3.0	3.6	4.0	4.6	6.8	4.4
Ever attended school, age 5+ (%)	55.9	63.8	69.0	73.1	84.4	69.4

Note: % is percentage of individual in each quintile.
Source: WB (2009b)

In short, poverty is still an issue of great concern in Cambodia, especially in rural areas. Similar to other countries, the determinants of poverty in Cambodia exist in all levels including individual, household and village. The following section discusses why the efforts to reduce poverty have only had moderate success despite the remarkable economic growth in the past decade and potential roles of labor migration in poverty reduction in Cambodia.

3.3 Significance of ILM for Cambodia

Poverty reduction does not progress at the same pace as economic growth because the growth is not pro-poor. While the majority of the poor reside in rural areas and their main source of income is in agriculture, the sector does not achieve much growth in terms of output and employment generation. Pressured by the annual increase in new entrants into the labor market and a limited ability to create new domestic jobs, the RGC has considered ILM as an element of employment generation policy. A review of the economic performance of Cambodia and its implications for the labor market can shed light on the importance of ILM for Cambodia.

During this last decade, the value of Cambodian GDP has continuously increased. It rose from US$3.44 billion in 1997 to US$10.98 billion in 2008 in current prices or US$3.73 billion in 1997 to US$7.07 billion in 2008 in constant 2000 prices (ADB, 2009). The annual growth rate stayed high around 11 percent between 2004 and 2007 but drastically fell to 6.8 percent in 2008 due to the global economic crisis.[11]

Similar to other developing countries, the share of agriculture sector in GDP has witnessed a constant drop. In 1997, the agriculture sector, service sector, and industry sector occupied 46.3, 36.6, and 17.1 percent of GDP but later changed to 32.5, 45.1, and 22.4 percent respectively in 2008 (ADB, 2009). More specifically, Cambodia's high economic growth has been sustained by only a few products, including: garment and footwear, construction and services. The garment industry accounted for 75 percent of the total valued added of manufacturing sector in 2005 (Heng, 2009).

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[11] I calculated the value of GDP in US$ and its growth rate using "average of period" exchange rate in ADB Key Indicators 2009. The growth rate is calculated using GDP in constant 2000 prices.

In terms of employment structure, agriculture sector employs the largest number of workers, compared to other industries, but has a lower rate of new job creation. In 2008, 53 percent, 31 percent and 16 percent of the labor force were employed in the agriculture, service and industry sectors respectively (RGC, 2010). Nonetheless, with regards to new job creation, the agriculture sector generated only around 80,000 jobs throughout the growth period, whereas the industry and service sectors together created about 100,000 new jobs per year (RGC, 2010). Garment industry is the largest source of formal job which employed around 353,000 workers by September 2008 (BFC, 2009). However, this high dependency had serious consequences for the economy as well as the labor market when the garment industry was hit hard by the 2008 global economic and financial recession. In addition to 24,000 job lost in 2008, another 30,000 jobs were lost as a result of the closure of 77 factories in the first three quarter of 2009.[12] As the majority of the garment workers are youth, the layoffs have exacerbated the problem of youth unemployment in Cambodia.

Although the number of new jobs has increased during the past decade, it has not been as fast as the economic growth. While the economy achieved an average growth rate of 6.8 percent between 1994 and 2004 and 10.5 percent between 2005 and 2007, the average growth rate of employment was only 3.3 and 2.0 percent respectively (RGC, 2010). By examining the employment elasticity of output growth, it becomes clear that high performance of Cambodian economy in the past decade did not necessarily translate into high employment generation (see Table 3.7). Some analysts called such growth as "jobless growth" (USAID, 2006: 11).

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[12] 77 garment factories closed in 2009 and more suspended their operations. Available at: http://www.betterfactories.org/ content/documents/media/2009-10-05%20CAM.gif. Last access: October 6, 2009.

Table 3.7: Employment Elasticity of Output Growth

	1994-2004	1998-2004	2005-2007	Medium term*
Aggregate output growth	6.8%	7.1%	10.5%	7.0%
Aggregate employment growth	3.3%	3.4%	2.0%	3.0%
Aggregate elasticity	0.485	0.479	0.190	0.428

Source: RGC (2010)

The problem of the low number of new jobs created is becoming gloomier when taking account of the high number of new entrants into the labor market and the concept of underemployment. With a total population of around 13.4 million (13,395,682 persons) in 2008, more than half of the population (6,935,246 persons) are economically active (NIS, 2009). Remarkably, youth population (aged 15-24) constitutes the largest share among the working-age groups (15-64) but the smallest share in the employed population; hence, youth have the largest share in the total unemployment (see Table 3.8).[13]

Table 3.8: Share of Working-Age Groups in Total Population, Employment and
Unemployment in Cambodia, 2008

Age	% of each working-age group in total population	Economic activity rate of each working-age group	Unemployment rate of each working-age group
15-24	22.31	60.12	3.33
25-34	14.39	91.33	1.6
35-44	11.82	93.34	0.76
45-54	8.54	91.59	0.67
55-64	4.99	84.15	0.88

Source: NIS (2009)

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[13] The United Nations defines youth as persons aged 15-24; this group is further divided into teenagers (15-19) and young adults (20-24) (Morris, 2007: 26). Cambodia employs a strict definition of unemployment which defines an unemployed person as a member of the labor force who did not work or had no business during the reference week but was available and actively looking for work (Morris, 2007: 25).

While the "strict definition" of unemployment shows apparently a very low rate, the "relaxed definition" of unemployment shows a higher rate, for it includes those who are available for work but are discouraged from looking for one during the reference period. As in 2004, while the average unemployment rate of population aged 10 and over was just 0.8 percent following the strict definition, the unemployment rate based on the relaxed definition was six percent (Morris, 2007).

However, the current approach to measure underemployment, which is based on time reference, could not inform well about the great need of remunerative jobs in Cambodia. Members of the labor forces who are discouraged from searching for a good quality job often end up underemployed in a low-income or low-productivity job such as a job in the informal economy or in subsistence agriculture.[14] A closer examination of employment by occupations in Cambodia reveals that own account workers and unpaid family workers constituted about 83 percent of the total employed persons in 2008, and the rate was higher for rural areas (see Table 3.9) (NIS, 2009).[15] Particularly, the number of youth as unpaid family members is almost 1.1 million (1,086,573 persons), and the majority of them (1,026,126 persons) live in rural areas. The 2004 CSES has shown that on average own-account workers work 42 hours and unpaid family workers work 34 hours, and about two-thirds of all women in Cambodia and almost three-fourths of women in rural areas were employed seasonally (Morris, 2007: 33). Although the rural residents work more than 30 hours – the limit in Cambodia's definition of underemployment – the majority of them, especially men, still want an

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[14] Cambodia defines an underemployed person, by the time definition, as a person who works less than 30 hours a week and is still seeking an additional job (Morris, 2007: 34 & 36).

[15] An own-account worker is a person who operates his or her own enterprise, trade or profession without hiring any paid employee. An unpaid family worker or a contributing family member is a person who works without receiving payment in an economic enterprise operated by a related person living in the same household (Morris, 2007).

additional job. This is understandable since major economic activities of rural residents are mostly related to subsistence agriculture and informal economy with low and unstable returns. Therefore, creating more remunerative jobs is absolutely an urgent issue on which RGC needs to work.

Table 3.9: Distribution of Employed Persons by Employment Status, 2008

	Employer	Paid Employee	Own Account	Unpaid Family worker	Other	Total
Total						
15-24	2,061	408,379	247,171	1,086,573	1,440	1,745,624
25-34	2,755	347,577	647,802	738,685	666	1,737,485
35-44	2,423	234,400	725,020	507,677	400	1,469,920
45-54	1,680	134,284	564,464	343,220	219	1,043,867
55-64	858	54,202	331,494	172,653	186	559,393
Urban areas						
15-24	677	218,825	53,676	60,447	414	334,039
25-34	1,181	199,596	106,305	49,944	310	357,336
35-44	1,010	119,938	107,229	30,560	202	258,939
45-54	684	69,833	85,100	22,388	92	178,097
55-64	328	26,161	42,274	9,910	63	78,736
Rural areas						
15-24	1,384	189,554	193,495	1,026,126	1,026	1,411,585
25-34	1,574	147,981	541,497	688,741	356	1,380,149
35-44	1,413	114,462	617,791	477,117	198	1,210,981
45-54	996	64,451	479,364	320,832	127	865,770
55-64	530	28,041	289,220	162,743	123	480,657

Source: Author based on data of NIS (2009)

To deal with the issue of unemployment and underemployment particularly of youth, the RGC has set out several policy priorities, which were echoed by the ILO, one of which is the promotion of international labor migration (ILO, 2007; Morris, 2007).[16] In addition,

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[16] The employment generation policies include 1) promoting small and medium enterprises (SME) and foreign direct investment (FDI) especially in agriculture, agro-industry, labor-intensive industries and tourism; 2) increasing agricultural productivity to generate more rural employment opportunities; 3) establishing technical vocational education and training networks to equip workers with necessary skills; and 4) assisting Cambodian workers seeking employment in other countries (RGC, 2006).

together with other policies, the international labor migration has also been stipulated in the National Strategic Development Plan (NSDP) 2006-2010 and 2009-2013 (RGC, 2006 & 2009). Following the NSDP, the Ministry of Labor and Vocational Training (MoLVT) has provided services to job-seekers regarding labor market information inside and outside the country. As a result, thousands of Cambodian workers have legally obtained employment abroad every year. Moreover, in 2010, the RGC issued the first labor migration policy, which details what it does and will do to promote and manage migration movement from Cambodia.

In short, the review in this section indicated the significance of ILM as a potential employment promotion strategy to deal with Cambodia's current stagnated labor market and showed how the RGC has focused on promoting ILM. The next section provides some facts and figures on labor migration in Cambodia.

3.4 Overview of labor migration in Cambodia

3.4.1. Basic information on migration in Cambodia

According to the 2008 national census, the share of migrant in total population was 26.52 percent (3,552,173 persons). The share of migrants in the population of urban areas was 57.93 percent, and the share was 18.90 percent in rural areas (NIS, 2009: 98). Male migrants accounted for 52.26 percent (1,792,519 persons) of the total number of migrants in Cambodia (NIS, 2009: 98).

Cambodian migrants have various reasons for moving or changing residence. By far, the biggest reason is to follow a family member (37.86 percent), and the second largest reason is to search for employment (21.52 percent) (see Table 3.10) (NIS, 2009: 99). Migration in search for employment or labor migration has become noticeable since the mid-1990s (CDRI, 2009).

Table 3.10: Distribution of Migrants by Reasons of Migration, 1998 and 2008

| Reasons for Migration | Percentage of Migrants | | | | | |
| | Both Sexes | | Males | | Females | |
	1998	2008	1998	2008	1998	2008
Number of migrants*	3,460,019	3,538,130	1,720,696	1,785,521	1,739,323	1,752,609
Total %	100.00	100.00	100.00	100.00	100.00	100.00
Transfer of workplace	8.11	9.22	12.93	13.83	3.33	4.52
In search of employment	**14.55**	**21.52**	**17.78**	**24.19**	**11.35**	**18.80**
Education	2.22	2.73	3.14	3.52	1.31	1.92
Marriage	13.15	14.62	16.97	18.57	9.37	10.59
Family moved	36.97	37.86	26.30	27.29	47.54	48.66
Repatriation/ return after displacement	13.92	1.19	12.69	1.25	15.15	1.13
Natural calamities	6.02	0.14	5.66	0.14	6.38	0.13
Insecurity	-	1.93	-	1.77	-	2.09
Orphaned	-	5.77	-	5.18	-	6.37
Lost land/lost home	-	0.36	-	0.38	-	0.34
Visiting only	1.60	3.67	1.43	2.68	1.76	4.68
Other	3.46	0.99	3.10	1.20	3.81	0.77

Note: i. *Excluding migrants who have not reported the reason for migration

ii. In 1998 "natural calamities" and "insecurity" were combined as one reason, and "orphaned", "lost land/home" and "visiting only" were combined with "other".

Source: NIS (2009: 99)

In terms of age, migrants aged 25-29 occupy the biggest share in total migrants with a relatively stable rate (14.09 percent in 1998 and 13.52 percent in 2008). While male migrants aged 25-29 outnumber their counterparts in other age groups, female migrants aged 20-24 occupy the largest share in the total number of female migrants. Although youth migrants are the largest group, people in other age groups including 15-19, 30-39 and 35-39 also take up a large share in the total migrants (see Table 3.11).

Table 3.11: Distribution of Migrants by Age Groups, 1998 and 2008

Age Group	Percentage to Total Migrants					
	Both sexes		Males		Females	
	1998	2008	1998	2008	1998	2008
Total number of migrants aged 10+	3,317,557	3,363,239	1,646,545	1,695,514	1,671,012	1,667,725
Total (%)	100.00	100.00	100.00	100.00	100.00	100.00
10-14	7.54	5.80	7.82	5.94	7.26	5.65
15-19	10.21	9.78	10.11	9.37	10.31	10.21
20-24	10.26	13.09	10.55	12.78	9.97	13.41
25-29	14.09	13.52	15.17	14.32	13.05	12.66
30-34	12.98	8.43	13.87	9.06	12.10	7.80
35-39	11.88	10.80	12.34	11.62	11.42	9.97
40-44	8.59	9.49	7.74	9.98	9.44	9.00
45-49	6.96	8.53	6.48	8.60	7.43	8.47
50-54	5.00	6.51	4.65	5.80	5.43	7.23
55-59	3.95	4.92	3.69	4.51	4.20	5.34
60-64	3.03	3.24	2.75	2.96	3.31	3.53
65-69	2.40	2.39	2.15	2.16	2.64	2.63
70-74	1.55	1.63	1.36	1.40	1.73	1.85
75+	1.56	1.87	1.32	1.50	1.80	2.25

Source: NIS (2009)

3.4.2 Typology of Cambodian labor migrants

Cambodian labor migrants can be classified according to the following three dimensions: destination, legality and duration.

1) By destination

In terms of destination, Cambodian labor migrants move to seek work either within Cambodia or abroad. Although Thailand has been and remains the major destination for Cambodian labor migrants, a few other destinations including Malaysia, South Korea, Saudi Arabia and Japan have recently emerged.

It is important to note that internal migrants for all purposes of moving accounted for 97.3 percent of the total migrants in 2008. Internal migrants move in four directions: rural-rural, rural-urban, urban-rural, and urban-urban. In the past decade, the proportion of rural-rural migrants has fallen about eight percent from 58 to 51 percent, while the share of rural-urban migrants has shown an increasing trend from 23.5 to 27.5 percent (see Table 3.12) (NIS, 2009).

Table 3.12: Share of Migrants in Each Internal Migration Stream

Direction of Migration	Percentage of Migrants					
	Both Sexes		Males		Females	
	1998	2008	1998	2008	1998	2008
Number of internal migrants*	3,387,140	3,457,228	1,685,986	1,744,044	1,701,154	1,713,184
Total %	100.00	100.00	100.00	100.00	100.00	100.00
Rural to rural	58.00	50.88	59.05	53.26	56.98	48.45
Rural to urban	23.50	27.53	22.50	25.56	24.48	29.54
Urban to rural	5.16	6.48	5.37	6.79	4.95	6.16
Urban to urban	13.34	15.11	13.08	14.39	13.59	15.85

Note: *Excluding migrants from outside Cambodia
Source: NIS (2009: 101)

According to the 1998 census data, five provinces of Cambodia are top-sending areas of migrants: Kandal, Kampong Cham, Prey Veng, Takeo, and Battambang (NIS, 2008). This pattern of out-migration was fairly stable from 1996 to 1998 (Godfrey, So, Tep, Pon, Katz & Archaya, 2001). Based on the same data, we can identify six top-migrant-receiving provinces including Phnom Penh, Kandal, Kampong Cham, Banteay Meanchey, Battambang, and Koh Kong (NIS, 2008). In this past decade, the pattern of internal migration has not changed at all. All of the provinces which were reported in the 1998 census as the top receiving provinces remain so. This pattern also applies to the case of labor migration. Phnom Penh and other six

provinces have received the largest number of labor migrants. In descending order, those six provinces include Battambang, Banteay Meanchey, Kampong Cham, Kandal, Siem Reap and Preah Sihanouk (see Figure 3.2) (NIS, 2009).

Figure 3.2: Total Number of Migrants and Labor Migrants in Each Province, 2008
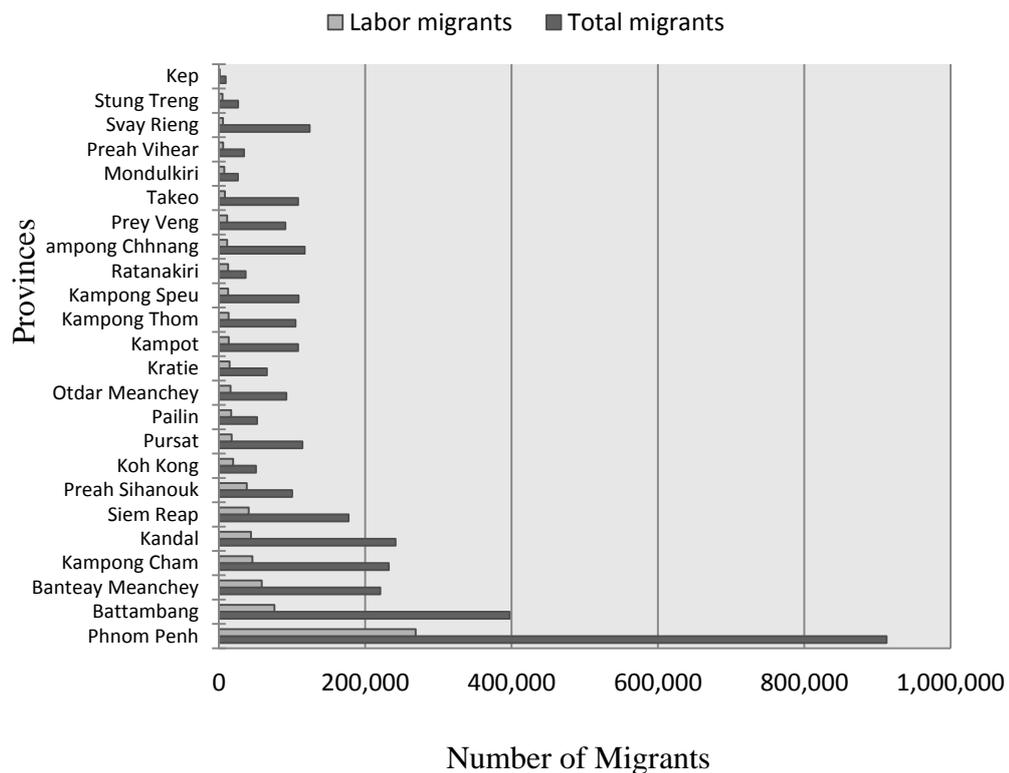
Source: Author based on data of NIS (2009)

Comparing internal migration with international migration, there is a difference in terms of sending areas. For labor migration to Thailand, the major sending provinces are Banteay Meanchey and Battambang, which border with Thailand. In addition to being sending areas of migrants, these provinces also serve as transit spots for migrants from other provinces to Thailand (Chan, 2009). As seen in Figure 3.2, Battambang and Banteay Meanchey appear as the second and third top-migrant-receiving provinces after Phnom Penh.

2) By legality

Legality is not an issue for Cambodian workers who move within Cambodia, but it characterizes Cambodian labor migrants abroad. From the aspect of legality, there are two types of labor migrants: 1) legal, documented or regular workers and 2) illegal, undocumented or irregular workers. Documented migrants are those who are legally recruited through private agencies and registered at the MoLVT. So-far, the RGC has legally sent workers to five destination countries: Malaysia, South Korea, Thailand, Saudi Arabia and Japan. From 1998 to 2008, the government officially sent a total of 25,580 Cambodian workers to work abroad. Of this number, Malaysia accepted 13,324; Thailand accepted 8,231; Korea accepted 3,983 and Japan accepted 42 (Chan, 2009) (see Table 3.13). Although 34 legal workers were sent to work in Saudi Arabia, the RGC has decided to stop this sending due to its inability to monitor workers' situation there (IOM, 2006). Moreover, on October 15, 2011, the government also issued a notice to temporarily ban the sending of Cambodia female workers to work as housemaids in Malaysia due to frequent reports of worker abuses (RGC, 2011).

On the other hand, undocumented workers are those who have made illegal migration to work in foreign countries or migrated without the government's recognition. Thailand, confronting a shortage of unskilled labor, has been acting as a prime destination for migrant workers from Cambodia and other countries in the Greater Mekong Sub-region (Kaur, 2007). To deal with the issue of illegal CBLM, the RGC and the Thai government signed a Memorandum of Understanding (MoU) in May 2003 to regulate labor migration from Cambodia to Thailand (for content of the MoU, see Chan, 2009: 41-44). Subsequently, a task force of the MoLVT was sent to Thailand in 2004 to work on the legalization of existing illegal migrants with cooperation of the Ministry of Interior of Thailand. As a result, in 2004, 104,789 Cambodian migrant workers received a two-year work permit to work in Thailand

(see Table 3.14) (WB, 2006). [17] The RGC has proposed to the Thai government to send those who failed to be regularized back to Cambodia, so that those workers could return to Thailand through a legal process instead (Chan, 2009) (a detailed discussion on the Thai policies towards the inflow of foreign workers is provided in Section 3.6).

Table 3.13: Number of Officially Sent Cambodian Migrant Workers by Destination

	Malaysia			Korea			Thailand			Japan		
	Total	M	F	Total	M	F	Total	M	F	Total	M	F
1998	120	0	120	--	--	--	--	--	--	--	--	--
1999	86	0	86	--	--	--	--	--	--	--	--	--
2000	502	307	195	--	--	--	--	--	--	--	--	--
2001	846	342	504	--	--	--	--	--	--	--	--	--
2002	1,049	246	803	--	--	--	--	--	--	--	--	--
2003	573	73	500	756	638	118	--	--	--	--	--	--
2004	809	105	704	674	519	155	--	--	--	--	--	--
2005	1,776	467	1,309	468	432	36	--	--	--	--	--	--
2006	1,690	231	1,459	1,501	1,341	160	445	226	219	--	--	--
2007	3,219	174	3,045	584	499	85	5,670	3,935	1,735	3	3	0
2008	2,654	53	2,601	--	--	--	2,116	1,425	691	39	13	26
Total	**13,324**	**1,998**	**11,326**	**3,983**	**3,429**	**554**	**8,231**	**5,586**	**2,645**	**42**	**16**	**26**

Source: RGC (2010: 13)

Table 3.14: Number of Work Permits Issued to Cambodian Workers in Thailand, 2004

No.	Sectors	# of Workers	No.	Sectors	# of Workers
1	Agriculture	18,816	7	Stone factory	280
2	Domestic services	8,746	8	Ice making	387
3	Construction	24,463	9	Transportation	1,770
4	Fish processing	4,666	10	Mine factory	93
5	Fishing	22,874	11	Others	22,508
6	Rice mill	186		Total	104,789

Source: WB (2006)

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[17] However, according to the Asian Migration Yearbook 2005, number of registered Cambodian workers in Thailand as of October 2005 is 182,007 persons (Asian Migration Centre, 2005).

When classified by the duration, labor migration phenomenon in Cambodia shows an interesting pattern. Internal labor migration to urban areas mainly Phnom Penh involves two durations: seasonal and long-term. Due to the distance and costs, labor migrants to Malaysia, Korea and Japan opt to go long-term. On the other hand, there are three patterns of duration for Cambodian migrants to Thailand: 1) long period (seven months and more), 2) seasonal work (three to four months) and 3) daily commuting (ILO, 2005; Chan, 2009). Table 3.15 is a matrix showing the three typologies of Cambodian migrant workers.

Table 3.15: Typology of Cambodian Migrant Workers

		Destination				
		Internal	International			
			Thailand	Malaysia	Korea	Japan
Legality	Legal/documented	*	*	*	*	*
	Illegal/undocumented		*			
Duration	Daily		*			
	Seasonal	*	*			
	Long-term	*	*	*	*	*

Source: Author

3.4.3 Process of ILM from Cambodia to each destination

If looking at the migration process of documented workers, Cambodia shares a commonality with other sending countries. Mainly, there are 3 stages of legal labor migration: recruitment, deployment and overseas work residence. Documented migrant workers are mostly sent through private recruitment agencies. Legally, those agencies are responsible for recruiting, delivering pre-departure training and providing necessary preparation and

assistance to workers. However, they have not performed their roles well. No proper training and assistance is provided to workers. The poor performance of recruitment agencies and the limited capacity of RGC to protect workers put workers in a vulnerable position during their work abroad (IOM, 2006).

Unlike documented workers, the undocumented labor migrants to Thailand made their moves through middlemen/brokers (or *Mekyal* in Khmer language). They are either former migrants or professional brokers from Thailand. They know the situation in Thailand well and are connected to Thai employers. These people charge broker fees from workers. According to an NGO working on women's issues, workers in Prey Veng province paid up to US$90 to a middleman/broker to be smuggled into Thailand (Lee, n.d.). Therefore, brokers are the key persons to determine the ultimate outcomes of labor migration. If workers are connected to professional middlemen, experience of labor migration can be positive; however, if they use unskilled or dishonest middlemen, they may end up with a bitter experience of labor migration (Maltoni, 2007).

Characteristics of Cambodian labor migrants to South Korea are different from others. They had been sent through two programs: the "Industrial Trainee System (ITS)" and the "Employment Permit System (EPS)". The former program accepted migrants to work in manufacturing, construction and service sectors in Korea. Recruitment process is similar to that of Malaysia. However, results of the internal evaluation made by the Korean government put an end to this system in December 2006 due to frequent criticisms including poor working conditions, low wages and limited protection of worker rights.

In parallel with the ITS, Cambodian workers have been sent through the EPS. The system is a result of the Korean government's adoption of the "Act on Foreign Workers" on August 16, 2003 (IOM, 2006: 40). Since 2006, the Korean government has accepted

Cambodian workers only through this system. Every two years, the Korean government will conduct an evaluation on each partner to determine the continuation of EPS (IOM, 2006). This practice forces sending countries including Cambodia to be highly committed to monitor their labor force in Korea.

The requirement of language proficiency has stood out as a great barrier for Cambodian workers to go to South Korea. Before leaving for Korea, workers need to go through two or three months of training. A Korean language test is mandatory. Because of such a high requirement from the Korean side, the MoLVT sought the cooperation of IOM to provide general pre-departure training to workers. It also enlisted the cooperation of the National Polytechnics Institute of Cambodia to deliver technical and computer training, so that Cambodian workers can reach the same standards with Korean workers.

3.4.4 Problems faced by Cambodian workers in each destination

Although there are four main international destinations for Cambodian workers, information on problems that workers face are only available from two countries. Unlike Thailand and Malaysia, there is no report or information about conditions of migrant workers in South Korea and Japan.

1) Thailand

As for Thailand, Cambodian workers are employed for unskilled jobs. Men are commonly seen in fisheries, construction and agricultural sectors, while women are concentrated in domestic, entertainment and sex-related sectors (IOM, 2006). Mostly, they work as irregular or seasonal workers, for example working for two weeks and being unemployed for two weeks.

Due to their undocumented status, they are more vulnerable than workers to other destinations. Generally, they have limited freedom to move due to the fear of being arrested

and deported back to Cambodia. They are subject to violence, discrimination, dangerous working conditions and language problem. In terms of welfare, their undocumented status restrains them from accessing regular work, health service, education for their children, proper and safe remittance transfer system and information about rights, laws and registration process (IOM, 2006).

2) Malaysia

It is interesting that if compared to migrant workers to South Korea, female workers to Malaysia outnumber male workers. They are mostly employed to work as domestic workers, factory workers, shop assistants, plantation workers, and construction workers. Although they first entered Malaysia as regular migrants, many later became irregular migrants. They primarily work in the entertainment sector.

However, despite the documented status, Cambodian workers to Malaysia could not escape from problems. Common reported difficulties being encountered by Cambodian workers are confiscation of travel documents, withholding or deduction of salary, harsh working conditions, lack of freedom to communicate and move (controlled by house-owners), lack of access to bank accounts or inability to keep pocket money for emergencies, limited or no access to health facilities, and sexual harassment (IOM, 2006).

3.5 Laws and regulations regulating ILM in Cambodia

Despite acknowledging the potential contribution of ILM, the RGC is still at an early stage of ILM management. The first legal instrument is the Sub-decree 57 issued in 1995 to regulate the sending of Cambodian migrant workers abroad. There were three ministries jointly drafting this sub-decree: the Ministry of Social Affairs, Labour, Vocational Training and Youth Rehabilitation (MoSALVY former name of MoLVT), the Ministry of Interior (MoI) and the Ministry of Foreign Affairs (MoFA). As stipulated in the Sub-degree, the

MoLVT acts as a "providing party" whereas the recruitment agency acts as a "receiving party" of labor migrants. This legal instrument signified the RGC's initial recognition for the necessity of ILM in dealing with the problem of employment shortage in Cambodia.

With increasing recognition for the potential contribution of ILM, the MoLVT issued two more legal documents to facilitate ILM. The first document is the Prakas 108 issued in May 2006 regarding "the education of HIV/AIDS, safe migration and labor rights for Cambodian workers abroad", and the second document is the Sub-decree 70 subsequently issued in July 2006 on "the creation of the manpower training and overseas sending board," particularly for managing labor migrants to Korea (Chan, 2009).

However, analysts have pointed out two serious inconsistencies between provisions of the Sub-decree 57 and the RGC's objective to promote legal overseas employment of Cambodian workers. These inconsistencies prevent expansion of private sector's involvement in the promotion of ILM, which should not be the case due to the limited capacity of RGC.

Firstly, the Sub-decree requires each recruitment agency to place US$100,000 as a guarantee deposit with the MoLVT if they want to send workers abroad. Officials of the MoLVT explained that a reason for such a huge amount of no-interest deposit was that the ministry can use the deposit to repatriate workers from abroad if anything goes against the terms and conditions of the employment contract. Nevertheless, analysts estimated that it would cost less than US$30 to send a worker back home and thus should not be more than US$30,000 if the company sends 1,000 workers. Although the Sub-decree states that the company can get back the deposit when the employment contract is achieved definitively, in practice the MoLVT still keeps the deposit. That the employment contract is achieved definitively means that workers successfully return home. However, it is difficult to monitor if workers return home or continue to stay in Thailand by signing a new contract with another

company (Chan, 2009). This may be due to the limited monitoring capacity of the RGC and the recruitment agencies.

Secondly, the Sub-decree also requires recruitment agencies to pay the initial cost for services and preparation of relevant documents to the MoLVT. As currently estimated, the total cost of sending per worker is US$600 (Chan, 2009). Thus, if the company sends 1,000 workers, the company would need to pay US$60,000 in addition to the US$100,000 guarantee deposit. As a matter of procedures, employers in Thailand pay money to the recruitment agency in Cambodia in two or three installments as hiring fees for prospective Cambodian workers to be sent from Cambodia. Later, employers will deduct between 10 to 12 months from the migrants' salary.

This practice poses risks for both Thai employers and recruitment companies in Cambodia. There are often reports that legal migrants run away from their employers and join the group of illegal migrants to avoid responsibility of repaying the cost. In case of desertion, the companies in Cambodia need to recruit a new worker for the Thai employers and pay the cost by themselves. To cope with this potential risk, the recruitment agencies have recently increased the cost for workers to Thailand up to US$600-US$700 and US$800-US$900 for workers to Malaysia (Chan, 2009).

To share the responsibility, the RGC has allowed the recruitment agencies to require migrant workers to pay the cost of passport and medical examination by themselves. The passport fee is between US$50 to US$150. Analysts believed that requiring migrants to share the cost of migration is beneficial as it makes migrants more committed to their work abroad (Chan, 2009).

The review in this section has shown the RGC's commitment to reduce illegal ILM and increase legal ILM. However, as the current strategy only tackles the labor supply-side

constraints but not demand-side constraints, the extent to which the strategy can lead to a growing use of legal channel to migrate is still questionable. Therefore, good understanding of the causes of ILM is warranted. The following section reviews economic performance and demographic change in Thailand in order to understand the causes of demand for unskilled foreign labor in Thailand as a pull factor of ILM from Cambodia, especially the illegal CBLM.

3.6 Understanding labor migration in Thailand

3.6.1 Inward and outward labor migration in Thailand

Like other countries, Thailand experiences both inflow of foreign labors and outflow of nationals to foreign countries. Despite fluctuation, there is a growing trend of Thai nationals seeking employment abroad. In 1990, there were only 63,000 Thai workers deployed abroad, but the number increased substantially to 161,917 workers in 2007 (Huguet & Punpuing, 2005; Chalamwong, 2008). So as the number of workers increased, albeit with fluctuations, the amount of remittances flowing into Thailand has also progressively increased from around US$0.9 billion in 1990 to approximately US$1.24 billion in 2006 (Huguet & Punpuing, 2005; Chalamwong, 2008) (see Appendix 3.1 for the number of workers deployed abroad and the amount of received remittances, 1990-2007). A higher wage in many foreign countries has been a main pull factor for Thai workers. Thai workers seem to concentrate on a few types of job: skilled workers in various businesses (34 percent), low-skilled workers (25 percent), factory workers and machine operators (23 percent), sales and service workers (8 percent), and technical and related workers (3 percent) (Chalamwong, 2008: 10).

The international labor migrants working in Thailand can be classified into two groups: legal and illegal migrant workers.[18] The legal category is further divided into six types of workers: 1) temporary or general permit migrant, 2) permanent resident or lifetime permit migrant, 3) national verification permit migrant, 4) migrant worker under Section 11 or MOU, 5) migrant worker under Section 12 or BOI, and 6) migrant workers under Section 14 or border workers (Paitoonpong, 2011).[19] However, there are still a few groups of migrant workers not included in these six categories but still considered legal due to diplomatic reasons. On the other hand, the illegal migrant workers are classified into only two groups: workers from Cambodia, Laos and Myanmar (CLM) and other minorities.

There seems to be no agreement on the number of legal and illegal migrant workers in Thailand. According to the statistic from the Office of Foreign Workers Administration of Thailand, there were a total of 344,686 legal migrant workers and 955,595 illegal migrant workers as of December 2010 (see Appendix 3.2 for the statistic of migrant workers in each category of legal and illegal migrants above). However, based on various sources, Martin

[18] The Thai government defines a migrant worker as 'an alien or a foreigner who temporarily enters the Kingkom and works, legally or illegally (Paitoonpong, 2011: 3).

[19] According to Paitoonpong (2011: 3-5), the temporary or general permit migrants are high-skilled foreign workers usually sent from the headquarters of foreign firms in Thailand; the permanent resident or lifetime permit migrants are those who entered Thailand before 1972; the national verification permit migrant are formerly illegal migrant workers from Cambodia, Laos and Myanmar (CLM) who become legal through a process of national verification and are granted a temporary passport or a Certificate of Identification; the migrant workers under Section 11 or MOU are those sent from CLM under the Memorandum of Understanding (MOU); the migrant workers under Section 12 or BOI are those coming to Thailand under the Investment Promotion Act or related laws; and the migrant workers under Section 14 or border workers are those from neighboring countries who enter through passport or border pass and work seasonally in the border areas.

(2008) presents the total number of 460,014 registered workers and 1,339,986 non-registered workers in 2007, with a total of 1.8 millions (see Table 3.16). On the other hand, Abella (2008) wrote in his paper that the number of illegal labor migrants in Thailand only was found to increase to over 1.8 million, which equals about five percent of the total labor force in Thailand. Therefore, the number of illegal migrant workers in Thailand should be treated with caution since different sources may have different statistics.   However, one similar implication from all the sources is that the number of illegal labor migrants has been increasing. Similar to Thai nationals who move to work in foreign countries, one main pull factor of foreign workers, especially from CLM, to Thailand is the higher wage in Thailand.

Table 3.16: Foreign Workers in Thailand, 1996-2007

Year	Registered	Non-registered	Total	Registered (%)
1996	293,652	406,348	700,000	42
1997	293,652	424,037	717,689	41
1998	90,911	870,556	961,467	9
1999	99,974	886,915	986,889	10
2000	99,956	563,820	663,776	15
2001	568,249	281,751	850,000	67
2002	409,339	558,910	968,249	42
2003	288,780	711,220	1,000,000	29
2004	849,552	149,848	999,400	85
2005	705,293	807,294	1,512,587	47
2006	668,576	1,104,773	1,773,349	38
2007	460,014	1,339,986	1,800,000	26

Source: Martin (2008: 4)

Notwithstanding the inconsistency among various data sources, it is still necessary to get a picture of the employment of Cambodian workers in Thailand. According to the data from the Office of Migrant Workers Administration of Ministry of Labour, the main three

employment sources for CLM workers are farming and livestock sector (171,857 workers), construction sector (148,211 workers), and fisheries and its related sector (101,849 workers) (Paitoonpong, 2011: 13). The sum of manufacturing and other sectors also constitutes a significant share of CLM workers. The following section examines the demographic transition of Thailand in order to explain why the country faces a shortage of labor supply, especially unskilled labor, as a pull factor of the influx of foreign labor to Thailand.

3.6.2 Demographic transition

Asia has remarkably reduced its total fertility rate (TFR) by more than half, from 5.9 in 1950-55 to only 2.7 in 1995-2000 (Abella, 2008: 9).[20] Thailand is no exception. As an effort to reduce poverty, the Thai government has implemented the population control policy through a birth planning program. As a result, its current TFR is just 1.7, a figure that is much below the 2.1 replacement level (Chalamwong, 2008: 4; Martin, 2008: 23). While the policy has greatly contributed to the successful poverty reduction in Thailand in the early stage of development as reviewed in the following section, it also has unfavorable impacts on the Thai economy as well as labor market.

It is predicted that the population growth rate of Thailand would fall from 0.75 percent between 2000 and 2010 to only 0.42 percent between 2020 and 2030 due to the decline in young population aged 0-14. The decline in TFR results in the decreasing growth rate of total young population aged 0-14 in the next 30 years, whereas the total working age population

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[20] TFR is the average number of children that would be born alive to a woman during her lifetime, if she were to bear children at each age in accord with prevailing age-specific fertility rates (UNDP, 1990).

would only gradually increase in the next 20 years and decline in the period 2020-2030 (Chalamwong, 2008: 4). On the other hand, Thailand would face a problem of high dependency ratio due to the increase in the aged population. The total population of people aged 60 years and over is predicted to increase from 5.8 million in 2000 to 11.8 million in 2020 and exceed the number of young people aged 0-14 in the period 2020-2030 (Chalamwong, 2008: 4).

Concomitant with the demographic transition, the government's current effort to promote education of Thai labor force may exacerbate the existing problem of shortage of low-educated labor force. The government has extended the basic education from 9 to 12 years and designed scholarship schemes to help those who cannot afford the education. This initiative would further reduce the labor force with lower secondary education but increase the highly-educated new entrants into the labor market. This changing pattern of labor supply would not respond to the need of the labor market if the economic structure of the country did not also change (Chalamwong, 2008: 5).

In short, the current demographic transition and the educational development strongly suggest that, in the next 10 to 20 years, Thailand will face a serious problem of an ageing population and the escalating shortage of labor supply, especially low-skilled labor. The following section reviews the economic performance of Thailand and its implications on the labor market.

3.6.3 Economic performance and labor market

Thailand has started as a developing country and transformed itself into a less-developed country through a couple of decades. Thanks to the economic boom in the early 1986, the annual growth rate before the 1997 financial crisis was seven to eight percent (Chalamwong, 2008: 5). The country was successful in promoting export of agricultural and manufactured products, expanding its tourism industry, and attracting foreign direct investment. In addition, the country has achieved good results in poverty reduction and population control.

Unfortunately, the adoption of financial liberalization policy from 1991 to 1993 has weakened the country's ability to control macro-economic stability, negatively affected the export, and caused the problem of asset bubble. This disaster has led to a negative growth rate of minus 13 percent in 1998 (Chalamwong, 2008: 6).

However, the period of stagnation did not last long. The early year of recovery was 2000 with a growth rate of 4.4 percent but dropped to only 1.5 percent in 2001 (Chalamwong, 2002: 377). Despite the inauspicious beginning, the Thaksin government (2001-2006) was still successful in revitalizing the economy through the implementation of the 'dual-track policy', which was aimed at promoting both FDI and small- and medium-sized enterprises (SMEs) simultaneously. The 2006 coup de'etat did not seriously disrupt the Thai economy because the military did not control the country but handed over the administrative power to General Surayuth Chulanond, a respectful member of the Privy Council. As a result, the GDP growth rate remained at approximately 4.7 percent in 2007. Although the inevitable effects of

the Sub-prime crisis from the United States in 2008 were not negligible, the remarkable performance of the economy along with the high employment creation during the past 30 years did not put the country in a serious crisis of unemployment (Chalamwong, 2008: 6).

The changing economic performance has very strong implications on the labor market of Thailand. Before the 1997 financial crisis, Thailand had already involved itself in light manufacturing industry. The transformation required higher skilled labor in the field of science and technology, but the domestic educational system could not produce skilled labor to cope with the emerging need, resulting in the import of engineers and other skilled labors from foreign countries. In the midst of this structural change, the federation of the Thai Industries and the fishery and related groups complained that Thai workers had become choosy and tended to reject the 3Ds job (i.e. dirty, dangerous and difficult). This has led to the official employment of illegal migrants since 1996 (Chalamwong, 2008: 7).

While the aftermath of the 1997 financial crisis negatively affected the domestic career opportunities and job prospects of Thai skilled workers, it seemed to have a positive effect on the employment of illegal foreign workers. The total number of Thai nationals leaving for a better employment abroad in 1999 was 1.65 million and rose to 1.9 million in 2000. The primary destinations for Thai workers were OECD countries, whereas non-OECD countries were secondary destinations. On the other hand, the number of illegal foreign workers in Thailand slightly increased in 2000 as a response to the increasing demand of local businesses to reduce employment costs and to fill the vacant positions (Chalamwong, 2002: 380).

Since 2000, the Thai economy has gradually recovered and has now achieved a level of performance comparable to that of the pre-crisis period. The growth was accompanied by employment creation, resulting in the increase of employed people from 33.48 million in 2001 to 37.12 million in 2007 (Chalamwong, 2008: 8). This remarkable employment generation was mirrored by a decrease in the number of unemployed from 0.896 million in 2001 to only 0.56 million in 2007. However, although they are unemployed, Thai people have become choosy in accepting a job due to the improvement in their education level and economic conditions. Therefore, the local businesses could not fulfill their demand of unskilled labor by the unemployed Thai people.

Although the Thai government has opened a door for the formal employment of unskilled labor from Cambodia and Laos under the MoUs, the supply is not large enough to meet the demand. For example, by September 2007, Thai employers could only receive 4,448 out of 62,094 requested Laotian workers and 6,143 out of 39,010 requested Cambodian workers (Chantavanich, 2008: 20) (see Appendix 3.3 for the total demand for migrant workers and the number of supplied workers, by sector). Factors that limited the supply of formal migrant workers include high formal recruitment fees, long waiting time, complex procedures, and the requirement that the recruitment agencies could not send the workers to Thailand unless they have gathered enough workers as requested (Chantavanich, 2008).

As a solution to the acute need of primary workers and the high cost of employing local workers, the Thai businesses, especially in the labor-intensive industry, have opted to

employ illegal migrant labors from CLM countries, resulting in the increasing inflow of illegal migrants from CLM countries as shown in Table 3.16.

3.6.4 Socio-economic impacts of CBLM on Thailand

Migrants have significantly contributed to the Thai economy but at the same time brought about several social problems. There have been various studies on the effects of migrants on the Thai economy. Using the 1995 Social Accounting Matrix-Computable General Equilibrium (SAM-CGE), Martin (2008) found that in 1995, when the estimated number of migrants was 700,000 workers (about 2.2 percent of the labor force), migrants' share in the then GDP was already US$839 million at current prices (GDP = US$168 billion) or US$600 million in 2000 constant price (GDP = US$120 billion). In 2005, with the estimated total number of migrant of around 1.8 million (about 5 percent of the labor force), the share of migrants in GDP increased to almost US$2 billion at current price (GDP = US$ 176.6 billion) or around US$1.8 billion in 2000 current price (GDP = US$156.7 billion) (Martin, 2008: 9).

Concomitant with the favorable impact on GDP, illegal labor migrants also have negative impacts on the Thai economy. For example, in 2010, Pholpirun and his colleagues conducted a study on the impacts of ILM on seven aspects of the Thai economy: production (GDP), productivity, labor cost, competitiveness, innovation, skill development, and investment. They found that without foreign migrants, the Thai GDP would be reduced by 31,823 million Baht. The agriculture sector would be most affected (-1.33 percent) and followed by the manufacturing (-0.9 percent) and the service sectors (-0.53 percent). However,

the additional 10 percent employment of unskilled migrants would lead to a five percent decline in the labor productivity, while the additional 10 percent employment of skilled migrants would raise the productivity by around 28 percent. Although the additional 10 percent employment of unskilled migrants could help firms save about 5,746 Baht per person per year, firms may face a problem of low competitiveness due to the decline in labor productivity and are less motivated to promote innovation and skill development (Pholpirun, Pungpond & Jongkon, 2010).

In addition to the countervailing economic impacts as reviewed above, migrants were also criticized for bringing about several social problems. The problems are related to, for example, security and crime, contagious diseases, HIV/AIDS, human trafficking, prostitution, child labor, poor labor standards, drug trafficking, illegal logging and timber trafficking, ethnic minorities, and stateless children (Paitoonpong, 2011: 24).

In summary, despite several unfavorable economic and social impacts, illegal labor migrants from CLM countries have made a great contribution to the growth of Thai economy. These economic contributions can explain why the number of illegal labor migrants in Thailand kept increasing in the past and possibly continues to grow in the future. Thus, the pull factor is most likely to keep playing a role in explaining CBLM from Cambodia in the future. However, since labor migration occurs as a result of both push and pull factors, the following section reviews cited causes and effects of labor migration in Cambodia.

3.7 Cited causes and effects of labor migration in Cambodia

3.7.1 Causes of labor migration

Generally cited causes of labor migration in Cambodia both internal and international, regardless of destinations, are more of push factors. The problems include lack of employment, inability to access markets, and environmental degradation (Acharya, 2003; Asian Migration Centre, 2005; Dahlberg, 2005; Maltoni, 2007; CDRI, 2007; Chan, 2009: 3). Particularly for cross-border migration, improved infrastructure and communication make migration possible (Chan, 2009: 3).

The pull factors for Cambodian workers are only the high demand of low-skilled or unskilled labor with higher wages in urban areas as well as foreign countries (Chan, 2009: 2). Particularly in Thailand, the negotiation between business people and the government has paved the way for migration of foreign unskilled labors (a detailed review was already provided in Section 3.6.5).

Despite being similarly affected by the macro factors, not everyone could migrate. They need to have assistance to facilitate their journey and settlement in the destination area. Cambodian migrant workers largely make their move through migration networks. Internal migrants and undocumented international migrants depend on former or current migrants who are their relatives or informal brokers to reach the destination areas. It is not rare that in one family, two of its members migrate because the first migrant serves as a network for the second migrant (CDRI, 2007). In contrast, documented migrants cross the country through recruitment agencies.

Existing studies have also pointed out several micro-level factors that influence labor migration decision. However, their effects have not yet been clearly shown. First, gender

tends to determine the duration of labor migration. Female migrants to Thailand are often involved in daily commuting, while men are more inclined to long-term migration (residing and working in Thailand) (IOM, 2006; NCPD, 2008). This is probably due to different levels of risk aversion and the home responsibility between men and women.

Second, labor migrants are different from non-migrants in terms of education but not household size. The CSES reported that labor migrants tend to have higher education than their counterparts in rural areas. Internal labor migrants to Phnom Penh and Poi Pet were found to be young, both single and married, and higher educated (average year of schooling is 6.39) than those who stay at home (CDRI, 2007), but labor migrants to Thailand could neither read nor write and had only primary education (ILO, 2005). A study by CDRI concluded that household size is not a determinant because average household size of youth labor migrants in the study is 5.3, which is slightly higher than the national household size (4.7) reported in the 2008 national census (CDRI, 2007; NIS, 2009).

Third, notwithstanding the general assumption that poverty is the cause of labor migration, findings from several studies do not support this belief. While an empirical study found that the poorer asset a household has, the more likely is its member to migrate (Yagura, 2006), another descriptive study conducted by the CDRI (2007) reported that labor migrants are actually not from the poorest group in their communities but from the poor and medium levels. Moreover, as land and labor are the two key assets that rural poor possess, when they have no land or only a small area of land, their only strategy to generate income is labor migration. Therefore, labor migration is a coping livelihood strategy for Cambodian rural dwellers (CDRI, 2007). However, only one out of ten respondents in the CDRI's study on labor migrants to Phnom Penh and Poi Pet reported insufficient land as their reason for migration. Similarly, a very recent study on Cambodian labor migrants to Thailand showed

that 80 percent of their sampled labor migrants and households owned land. Therefore, it is also questionable on the effects of land on labor migration.

As far as the issue of migrant selectivity is concerned, this review has shown that findings of the existing studies on Cambodia are not capable of providing rigorous evidence on how labor migrants are selected, especially in the context of CBLM. Therefore, more study is needed to fill the gap.

3.7.2 Effects of labor migration

Although the topic of effects of labor migration is being hotly debated, very few studies on Cambodia have examined the topic with rigorous analytical methods. However, none of them has analyzed the effects of labor migration on poverty reduction comprehensively. Using the Cobb-Douglas production function, Chea and Tsuji (2005) examined the effects of non-farm income from garment industry on rice output. However, they did not include any migration variable except a dummy variable of household characteristic as having received remittances or not. Hence, their approach could not provide complete understanding on the effects of labor migration on households left-behind as the review in Section 2.7.3 has shown that there are many factors influencing the effects of labor migration on households. Tong et al. (2011) revealed that migration does not affect agricultural intensification in terms of rice double-cropping. Using the national representative household survey data, Tong (2010) found that remittances from internal and international migrants (including labor migrants and non-labor migrants) contribute to poverty reduction by reducing the level, depth and severity of poverty. The effect of international remittances is stronger than that of the internal remittances. However, since his study focused on the macro-level effect of poverty and general migration in Cambodia, the relative effects of labor migration on various aspects of poverty at the micro/household level has not been ascertained.

Information from various descriptive studies on how MHHs spend remittances has shed some light on the possible effects of labor migration on several aspects of poverty. Generally, existing studies seem to concur that MHHs spent most share of remittances on consumption and some parts on agricultural production. Dahlberg (2005) found that Cambodian MHHs mainly used remittances to buy food, repay debt, cover medical expenses, purchase seed and fertilizer, supply for education of migrants' siblings, improve house conditions, put in savings, and buy consumer goods. Yet, some households could prioritize their use of remittances as firstly for buying food, secondly buying agricultural inputs such as rice seed, fertilizer, cattle or a tractor, thirdly spending on social functions such as wedding and religious rituals, fourthly repaying debt and fifthly investing in children' education (CDRI, 2007). However, none of the existing studies has provided concrete evidence of the effects nor explained whether the effects of labor migration differ among MHHs with different economic conditions. Hence, they also are not able to provide evidence on the influence of migrant selectivity on the effects of labor migration.

In addition to the weakness of existing studies, more work on the effects of labor migration in Cambodia is needed for two reasons. First, most existing research focused on internal rather than international labor migration. Studies from various countries have found that the effects of labor migration differ by type of migration and migrants. Therefore, applying the findings on internal labor migration to the case of ILM is not an appropriate method. Second, some existing studies on Cambodia have suggested that consumption pattern of migrant households should not be taken as they are because many factors can alter households' remittance spending behaviors. For example, different economic activities of family members still living in the province and/or receiving money are likely to yield different usage of remittances as well (Dahlberg, 2005).

3.8 Chapter summary

In summary, this chapter expanded the understanding of poverty and labor migration in Cambodia. It first reviewed the progress in poverty reduction and the characteristics of people living in poverty. It then discussed the reasons why ILM is important for Cambodia and provided an overview of labor migration in Cambodia by touching upon some basic statistics, typology of migrants, migration process of documented and undocumented workers and finally the problems that Cambodia workers faced during their work abroad. The chapter enriched the understanding of the causes of labor migration in Cambodia by reviewing the importance of CBLM and the legal instruments that regulate labor migration in Thailand. Finally, the chapter discussed the cited causes and effects of labor migration in Cambodia.

Chapter 2 discussed the theoretical linkage between poverty and labor migration, especially migrant selectivity; however, very little is known about the actual linkage in Cambodia. There is a growing interest of the RGC in promoting ILM as a strategy to deal with the problem of demographic pressure of excessive new entrants into the labor market every year and the limited ability to create sufficient new jobs. As poverty and labor migration in Cambodia are both rural phenomena, it is important to examine how poverty affects labor migration and vice versa. Given all of these practical necessities, I selected Cambodia as a research site. The following chapter presents empirical findings on how poverty affects South-South CBLM by taking CBLM from Cambodia to Thailand as a case study.

Chapter 4: Effects of Poverty on South-South CBLM

4.1 Introduction

The review in Chapter 2 has presented the current theoretical and empirical debates on poverty-migration nexus. Notwithstanding the prevalent belief that poverty causes labor migration, the discussions on migrant selectivity suggest that different income groups have different propensities to migrate. The implication of neo-classical micro economic theory and extensive empirical evidence seem to suggest that labor migration, especially ILM, is generally inaccessible to the poorest. While the non-poor are financially capable of migrating, they may be less motivated to move due to their comparative advantage at home. Since the poorest are most likely to be excluded from the labor migration stream, the effects of labor migration on poverty reduction are questionable.

However, Durand and Massey (1992) and de Haan and Yaqub (2009) have raised three caveats regarding the effect of poverty on migrant selectivity. First, while positive selectivity is visible in the case of South-North labor migration, South-South CBLM is less costly and thus could be more affordable to the poor and poorest (de Haan & Yaqub, 2009). Second, when the growth of migration networks has reached a threshold level, labor migration becomes accessible to the mass in the region, not just the upper class like in the early period of the movement. Finally, low representation of the poorest in labor migration stream is probably caused by limitations of surveys or national census to capture their outflow rather than actual low propensity to migrate. Due to their very low human capital and less access to

networks, the poorest might make their move through illegal channels, which poses great challenges for surveys or census to capture. Unfortunately, studies on selectivity in the cross-border context have mainly concentrated on education or skill rather than on economic condition of labor migrants. Therefore, more work on economic selectivity of South-South CBLM is needed in order to enrich the understanding of the effect of poverty on ILM.

To fill the gap in the literature, I examine how poverty affects Cambodia-Thailand CBLM. Although the general assumption is that poverty causes labor migration out of Cambodia, findings from several studies seem do not support this belief. Therefore, it is necessary to examine the effect of poverty on CBLM in Cambodia. Concretely, I analyze whether poverty, measured by the size of landholding, leads to positive, intermediate or negative selectivity of Cambodian labor migrants to Thailand and whether the influence of poverty as a constraint to CBLM has declined since 2006 and with regards to subsequent migration in each household. The analyses in this chapter address the first main research question (i.e., how does poverty affect South-South cross-border labor migration?) and its three sub-research questions (i.e., 1) does poverty affect migrant selectivity?, 2) does the effect of poverty vary depending on year of migration?, and 3) does poverty affect the sending of subsequent migrants?).

The answers to the second and third sub-research questions supplement the answer to the first sub-research question. While the answer to the first sub-research question informs about the type of selectivity of Cambodian cross-border labor migrants, the answer to the second sub-research question informs about whether the influence of poverty in terms of

landholding becomes stronger or weaker in the later period of labor migration. Durand and Massey (1992) explained that throughout time, migration networks have reached a threshold level, which makes labor migration accessible to the mass in the region, not just the upper class like in the early period of labor migration. Similarly, while the first sub-research question just examines the effect of poverty, measured by the size of landholding, on the decision to migrate, the third sub-research question additionally investigates whether the size of landholding, as an indicator of households' poverty status, affects the sending of subsequent migrants in each household. If the assumption that migration networks help reduce the cost of labor migration for subsequent migrants is correct, it is reasonable to assume that households should face less financial constraints in sending subsequent migrants. Although the assumption made by de Haan and Yaqub (2009) regarding the possible negative selectivity in the case of South-South CBLM is correct, it is unclear which group of households – the poorest, poor, and non-poor – is able or more likely to send more migrants. It is important to address these three sub-research questions together because the duration of migration and the number of migrants determine the amount of remittances that households can receive and use to improve their economic condition.

This chapter is organized as follows. Section 4.2 provides descriptions of data, methods and variables used in the analyses. Section 4.3 continues by presenting the regression results and is followed by Section 4.4 which provides descriptive background information to supplement the regression results. Finally, Section 4.5 concludes the chapter.

4.2 Data, methods and variables

4.2.1 Data

To analyze the effect of poverty on CBLM, I used retrospective household data collected through a field survey in Cambodia during two periods: August-September 2010 and December 2010-January 2011. The survey included data on 234 households selected from four villages in Nimith Commune, located in Ou Chrov District, Poi Pet City, Banteay Meanchey Province. Out of the 234 households, 154 are MHHs. The study focuses on 'long-term cross-border labor migrants'. Regardless of the actual duration of stay in Thailand, a long-term labor migrant is a person whose intended length of work in Thailand is for years. When asked for how long migrants plan to work in Thailand, respondents from migrant households responded that it would be for some years, but they did not know the exact duration. On average, the actual migration duration of the samples is 4.67 years (ranging from less than a year to 11 years). Therefore, a household from which one or many of its members have left for long-term work in Thailand since 2000 is considered a MHH. In the same vein, a household member is defined as a person who shares income, expenditure, and workload regardless of whether he or she is present or absent. Those who stayed in the same house but did not share these characteristics are not considered household members.

Following Sabates-Wheeler et al. (2008) who used recalled data on subjective past poverty of labor migrants from Ghana and Egypt, I used the recall method to collect household information prior to labor migration for MHHs and in year 2000 for non-MHHs. I selected only MHHs whose member(s) migrated in year 2000 or later. This is because some

past studies on Cambodia have shown that labor migration to Thailand increased sharply in 1996 and peaked in the first half of 1997 but declined in 1998 due to the Thailand's economic downturn and illegal migrant repatriation policy (Chan & So, 1999). As the Thai economy started to recover around 2000, it is reasonable to assume that new out-flow of labor migration from Cambodia should have been noticeable since then.

I used retrospective data to deal with the problem of reverse causality, which is a prevalent challenge faced by existing studies in the attempt to examine determinants of labor migration. Household's current economic condition is potentially affected by the labor migration of household members. Caution on this issue is clearly warranted since past migration studies tend to show consistent results that left-behind households are most likely to spend remittances on housing and durable goods. Hence, using the current economic condition to investigate the economic determinants of labor migration potentially raises the problem of reverse causality. Most past studies commonly use ready-collected survey or census data and thus are less flexible in solving this problem.

4.2.2 Methods

As mentioned earlier, the objective of this study is to examine the effect of poverty measured by the size of landholding on Cambodian labor migration to Thailand, specifically whether it leads to positive, intermediate or negative selectivity of Cambodian migrants to Thailand, whether the influence of small landholding/landlessness as a constraint to migration reduces recently, and whether small landholding/landlessness prevents the sending of subsequent labor migrants in each household. To achieve the stated objective, the study

included three separate Probit regression analyses. Following Pfeiffer & Taylor (2007), I used the standard model specification for all the three regressions as follows:

$$\Pr[M_i = 1 | X_{Mi}, \beta_i] = F(X_{Mi}\beta_i) \qquad (4.1)$$

where in the first Probit model $M_i = 1$ if household i is observed as a labor migrant household and 0 otherwise, in the second Probit model $M_i = 1$ if household i is observed to start labor migration in year 2006 or later and 0 is the labor migration started between 2000 and 2005, and in the third Probit model $M_i = 1$ if household i is observed to have a subsequent labor migration and 0 otherwise. *X* is a vector of household and community variables which include gender, age, and education of household head, number of working-age members (15-64 years old), household's child dependency ratio, index of house quality, total number of household economic activities, dummies for household economic condition, duration of migration, distance to the market, and distance to the lower secondary school (see Tables 4.1 and 4.2 for the definition and expected signs of each variable respectively).

4.2.3 Variables

To measure the effect of poverty on CBLM, three dummies for household economic conditions, which were created based on the household's size of landholding, were specifically included as the key explanatory variables. I divided the size of landholding into three groups – the poorest (owning less than a hectare of land), the poor (owning from a hectare to less than two hectares of land), and the non-poor (owning from two hectares of land)

– according to the findings of the Asian Development Bank's (ADB) participatory poverty assessment in Cambodia (ADB, 2001).[21]

I used the size of landholding as a proxy for households' economic condition and measurement of poverty for two main reasons. First, controlling for the effects of common region- and community-level determinants of poverty, household-level determinants of poverty are very influential in determining households' decision to migrate. However, since the objective of the study is to examine the long-term effect of poverty on migration, some of the household-level factors, for example income and expenditure, are not suitable indicators because they may change by seasons or by any special events. In other words, households can be poor by an income indicator at the time of the survey, but they are not necessarily poor in terms of other assets, for example land. Moreover, compared to other tangible assets, land can best represent the effect of poverty on ILM. Large size of land can represent a source of capital to finance expensive labor migration, and thus its relationship with ILM is positive. On the other hand, when land represents employment or investment opportunity, it would have a negative effect on ILM. Second, the main economic activity of people in the research site is rice farming, and the culture of farming is similar – doing only wet-season rice once a year. Therefore, for households in the research site, the size of landholding is the key determinant of their economic condition and ability to move out of poverty.

The first regression analyzed the effect of poverty in terms of landholding on migrant selectivity, and the dependent variable is 'dummy for migration status' (HHstatus), which was dichotomously coded as '1' for MHH and '0' for non-MHH. The variables that inform about

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[21] In this study, the size of landholding equals the size of agricultural land plus the size of residential land. Those who lived on other people's land or rented the agricultural land are considered landless for the respective type of land.

the type of migrant selectivity are the dummies for households' economic condition. In the regression, I included two dummy variables – dummy for poor household (D_poor) and dummy for poorest household (D_poorest) – and used the dummy for non-poor household (D_nonpoor) as a reference group. Therefore, if the estimated coefficients of D_poor and D_poorest are positive, it implies that on average non-poor households are least likely to migrate among the three groups; thus, migrants are not positively selected. If the estimated coefficient of the D_poor has a bigger positive value than that of D_poorest, it indicates that on average CBLM from the research site has intermediate selectivity. On the other hand, if the estimated coefficient of D_poor has a smaller positive value than that of D_poorest, it implies that there is negative selectivity. Based on the existing literature, D_nonpoor can have either positive or negative estimated coefficient, while D_poor is expected to have a positive coefficient and D_poorest is expected to have a negative coefficient.

The second regression analyzed whether the financial constraint or the effect of land as an indicator of poverty becomes stronger or weaker in the recent period of labor migration when compared to the earlier period. The dependent variable is 'dummy for year of labor migration' (D_Y2006), which has value '1' if the household started labor migration in year 2006 or afterwards and '0' if the year of labor migration was before 2006. Similar to the first regression, I included the dummies for poor and poorest households in the regression and used the dummy for non-poor household as a reference group. The effect of small landholding/landlessness as a constraint to labor migration has declined in the recent period of labor migration if the estimated coefficient of D_poor and D_poorest are positive. If the estimated coefficient of D_poor has a bigger positive value than that of D_poorest, it suggests

that poor households responded more to the declining effect of small landholding/landlessness and vice versa. So-far, no studies have examined this aspect. However, if the assumption on the role of migration networks is correct, it is possible to expect a negative sign of D_nonpoor and positive signs of D_poor and D_poorest.

I chose year 2006 as a split point for analysis for two reasons. First, the distribution of migrants by the sequences of migration in their households has shown that although the number of labor migrants in the first outflow increased in year 2008, the number of migrants in the second outflow has significantly increased since year 2006 (see Appendix 4.1). Second, year 2006 was the starting year of economic recovery for Thailand after the decline in year 2005 due to several external and internal related problems.[22] The economic growth of Thailand might demand more unskilled laborers from neighboring countries including Cambodia. Therefore, by splitting the sample by year 2006, the regression result can inform about two things. One is the declining effect of poverty measured by the size of land, and the other is the relative effect of the demand for labor on the three groups of households.

Finally, the third Probit regression aimed at examining if poverty represented by the size of landholding is a constraint for the households to send subsequent labor migrants to Thailand. The dependent variable in this regression is 'dummy for subsequent migration' (D_SubMig), which takes on the value '1' if the household has subsequent labor migration

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[22] The Thai economy experienced a decline in 2005, after having enjoyed significant growth rate from 2002-2004, due to several setbacks such as rising oil prices, trade deficits, severe drought and floods, insurgency in the Southern part of the country, uncertainty of the future of Thaksin's government, and the tourism aftershocks of the Tsunami in 2004 (source: http://en.wikipedia.org/wiki/Economy_of_Thailand, last access: February 07, 2012).

and '0' otherwise. Like the previous two regressions, I also included the dummies for poor and poorest households in the regression and used the dummy for non-poor household as a reference group. If the estimated coefficients of D_poor and D_poorest are positive, it implies that poor and poorest households are more likely than non-poor households to send subsequent migrants to Thailand. In other words, small landholding/landlessness is not a constraint for poor and poorest households in sending many migrants to Thailand, or small landholding/landlessness pressures households to send many migrants to Thailand to seek additional household income. If the estimated coefficient of D_poor has a bigger positive value than that of D_poorest, it suggests that small landholding/landlessness is less of a constraint for poor households in sending subsequent labor migrants than for poorest households. Again based on the assumption regarding the role of migration networks, D_non-poor is expected to have a negative sign, while D_poor and D_poorest are expected to have a positive sign in this regression.

The review in Section 2.6 revealed that the determinants of labor migration inherent in individual, household, and community. However, as this study focus on the household level, I only controlled for the effects of household and community factors which include gender, age, and education of household head, household size, household's dependency ratio, index of house quality, total number of household economic activities, dummies for household economic condition, duration of migration, distance to the market, and distance to the secondary school.

Existing studies on Cambodia do not mention any effect of household head's age and gender. Age influences labor migration through a life-cycle effect since older household heads

are more likely to have teenage or adult children, who are in the age that can migrate (Lipton, 1980; Adams, 1993); thus, the variable is expected to have a positive relationship with labor migration. However, while some past studies reported its positive effect, some others found it to have insignificant effect (see, for example, Adams, 2005; Görlich & Trebesch, 2008). Based on the same logic, it is possible to also expect a positive relationship between the age of household head and the probability to migrate in Year 2006 or later and the probability to have subsequent labor migration. The increase in age of household head may be associated with increase in number of working-age members who can undertake labor migration, which was impossible in the past, or labor migration of more than one household member.

Unlike the age of household head, there have been only a few studies considering the effect of household head's education level. Using data from Turkey, Tunali (2000) found that education of parents had a positive effect on labor migration of their children. The explanation for this finding is that labor migration discriminates against the poor and the poorest who have low human capital, so MHHs tend to be those whose heads have higher education level. However, in their recent study, Tong et al. (2011) found a negative and significant effect of education of household heads on ILM in Cambodia. There are two plausible explanations for this opposite finding. Firstly, the majority of Cambodian migrants who migrated to work abroad, especially in Thailand, went through illegal channels. Thus, more educated household heads might strongly object to it. Secondly, households with more educated heads probably had a relatively good economic condition as suggested by the poverty study in Cambodia conducted by the ADB (2001), which made labor migration unnecessary or unattractive. Hence, it is unclear about the effect of education of household head on the decision to migrate, probability to migrate recently and to have subsequent labor migration.

Similarly, while Takahashi (2005) found that female-headed households in Cambodia tend to suffer more financial difficulty than male-headed households, a study of the RGC (2006) did not find any significant difference in poverty level by the gender of household head. Thus, no definite conclusion can be reached about the effect of gender of the household head.

In order to control for the effect of labor, I included two variables in the regressions: number of working-age members (aged 15-64) and household's child dependency ratio since an explanation for the inconsistent findings on the effect of household size is household composition by age groups (Germenji & Swinnen, 2005).[23] The number of working-age members represents available labor for migration. Davis and Winters (2002) find that the number of male household members aged 15-34 positively affects labor migration of both men and women and the number of female members aged 35-59 positively affects female labor migration. Therefore, it is possible to expect a positive effect of the number of working-age members on the probability to migrate and to have subsequent labor migration. However, the differences regarding this variable between households that migrated earlier and later remain unknown.

While the number of working-age members signifies the available labor force, the child dependency ratio may affect labor migration in two opposite ways. On the one hand, it represents the inactive labor force which reduces the propensity to migrate. Gray (2009) found that international migration decreased with the number of minors and older women. Likewise, Quinn (2001) and Görlich and Trebesch (2008) also found negative and significant effect of dependency ratio or the number of dependents aged 15 or younger on labor

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[23] Child dependency ratio is the ratio of household members defined as dependent aged under 15 to the working-age members, aged 15-64 (UNDP, 1990).

migration in Mexico and Moldova. On the other hand, it may represent a pressure for working-age members to migrate in order to earn more income. In this case, the poor and poorest may be more likely to migrate than the non-poor due to their higher dependency ratio. Therefore, it is unclear about the effect of this factor on migration.

House quality, which represents the ability to live in good conditions, is considered as another dimension of poverty. Examining house quality to identify the poor in Cambodia is one of the recommended methods (ADB, 2001; RGC, 2006). Arrehag et al. (2006) did not find any difference in terms of the number of rooms in the house between MHHs and non-MHHs in Albania. Quinn (2001) examined the effect of house quality – a combination of type of flooring, water and sewage facilities – on labor migration from Mexico and found no significant effect. In contrast to Quinn's house quality, the index of house quality in this study is a sum value of four indicators: 1) type of floor, 2) type of wall, 3) type of roof and 4) size of the house. This combination of house quality indicator is more suitable for the Cambodian case as access to clean water and sewage facilities is extremely limited in rural Cambodia and at the research site.

Each indicator of house quality has four ordinal values, and the rating is made based on general observation of house quality in rural Cambodia as reported in the poverty study conducted by the ADB (2001) and the market price of each material. Each material is rated as follows. Regarding roof, value '1' is for straw/bamboo/palm leaves; '2' is for other metal sheet; '3' is for tile, and '4' is for cement sheet. Similarly, the rating method for wall material is value '1' for bamboo/thatch/palm leaves, '2' for wood/plywood, '3' for other metal sheet, and '4' for a house with concrete/brick/stone wall. Floor material is rated in the same way: '1' for earth/clay, '2' for bamboo strips, '3' for wood and '4' for cement/brick/stone. Finally, size of the house is rated '1' if the house is on the ground, '2' if it is high above the ground but not

yet in the form of two floors, '3' if it has two floors, and '4' if the household owns two house buildings. Overall, the sum value of the index of house quality ranges from '4' for the poorest household to '16' for the richest household.

Total number of household economic activities is expected to have a negative relationship with labor migration through two channels. First, based on the NELM theory on the role of labor migration as a means to overcome credit constraints in household's investment in agricultural production or new economic activities (Stark, 1991), it is reasonable to expect that households that have fewer economic activities should be highly motivated to migrate. Second, a high number of economic activities may prevent household members from leaving due to the demand for labor at home.

Particularly for the third Probit regression which estimated the effect of poverty on subsequent labor migration, I controlled for another household variable 'duration of migration'. [24] This variable is expected to have a positive relationship with the probability to have subsequent labor migration in the household.

Finally, I also controlled for two village characteristics as determinants of labor migration: distance to the market and distance to the lower secondary school. These two variables measure the effect of the level of development on labor migration. Studies in various countries showed mixed results regarding development status of communities. High level of

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[24] I calculated the duration of migration for former migrant households (meaning households that did not have any member working in Thailand at the time of survey) and for current migrant households differently. I subtracted the year of migration of the first migrant (e.g., 2003) from the year of survey, i.e., 2011 if the household still had a migrant working in Thailand. In contrast, I subtracted the year of migration of the first migrant (e.g., 2002) from the year of stopping migration of the last migrant (e.g., 2007) if the household had no more migrants working in Thailand.

development may make labor migration unnecessary, but enhanced access to infrastructure makes labor migration easier and more accessible to the poor.

Table 4.1: Definition of Variables

Variables	Definitions
Dependent variables	
HHstatus	Dummy for migration status: '1' if household had any long-term migrant
D_Y2006	Dummy for year of migration: '1' if household started migration in year 2006 or afterwards and '0' if the migration started in between 2000 and 2005
D_SubMig	Dummy for subsequent migration: '1' if household had subsequent migration
Independent variables	
HHH_gender	'1' if female
HHH_age	Years
HHH_edu	Years of schooling of household head
WorkAgeMM	Total number of household members aged 15-64 (persons)
ChildDepRatio	Child dependency ratio: the ratio of household members aged under 15 to the working-age members, aged 15-64.
Index_house	Quality of the house prior to migration/in year 2000 for non-MHHs, which is a sum value of four indicators: 1) floor, 2) wall, 3) roof, and 4) size of the house. The sum value of index of house quality for each household ranges from 4 (the poorest) to 16 (the richest).
Tot_activity	Total number of economic activities the household had prior to migration/ in year 2000 for non-MHHs (numbers)
D_nonpoor	'1' if the household owned two or more hectares of land prior to migration/in year 2000 for non-MHHs
D_poor	'1' if the household owned from one to less than two hectares of land prior to migration/in year 2000 for non-MHHs
D_poorest	'1' if the household owned no or less than one hectare of land prior to migration/in year 2000 for Non-MHH
DurMig	Duration of migration in each household (years)
DistSch	Distance to the nearest lower secondary school (kilometers)
DistMarket	Distance to the nearest local market (kilometers)

Source: Author

Table 4.2: Expected Signs of Variables Used in the Regressions

Variables	Probit Model 1 D.V.: HHstatus	Probit Model 2 D.V.: D_Y2006	Probit Model 3 D.V.: D_SubMig
HHH_age	+	+	+
HHH_edu	+/-	+/-	+/-
HHH_gender	?	?	?
WorkAgeMM	+	?	+
ChildDepRatio	?	?	?
Index_house	?	?	?
Tot_activity	-	?	-
D_nonpoor	+/-	-	-
D_poor	+	+	+
D_poorest	-	+	+
DurMig			+
DistSch	+/-	+/-	+/-
DistMarket	+/-	+/-	+/-

Note:

1) D.V. : dependent variable
2) "?" means that the expected sign of the respective variable is unknown because none of the existing studies has examined its effect in the respective model.

Source: Author

4.3 Empirical findings

4.3.1 Comparison between MHHs and non-MHHs

Table 4.3: Descriptive Statistics of the Variables Used in the Regression Analyses

Variables	Total (N=234)		Non-MHHs (N=80)		MHHs (N=154)		t-test for equality of mean
	Mean	S.D.[1]	Mean	S.D.	Mean	S.D.	
Dependent variables							
HHstatus	_	_	80	_	154	_	_
D_nonpoor	95(40.6%)	_	37(46.2%)	_	58(37.7%)	_	_
D_poor	39(16.7%)	_	17(21.2%)	_	22(14.3%)	_	_
D_poorest	100(42.7%)	_	26(32.5%)	_	74(48.1%)	_	_
D_Y2006[2]	_	_	_	_	88	_	_
D_nonpoor	_	_	_	_	25(43.1%)	_	_
D_poor	_	_	_	_	14(63.6%)	_	_
D_poorest	_	_	_	_	49(66.2%)	_	_
D_SubMig[2]	_	_	_	_	64	_	_
D_nonpoor	_	_	_	_	33(56.9%)	_	_
D_poor	_	_	_	_	13(59.0%)	_	_
D_poorest	_	_	_	_	18(24.3%)	_	_
Independent variables							
HHH_gender	61 (26%)	--	20 (25%)	--	41 (27%)	--	--
HHH_age	40.12	13.86	33.52	12.78	43.54	13.18	-5.57***
HHH_edu	4.38	3.54	5.20	3.55	3.95	3.47	2.58*
WorkAgeMM	3.27	1.57	2.54	1.25	3.66	1.58	-5.49***
ChildDepRatio	0.61	0.66	0.66	0.66	0.59	0.67	0.72
Index_house	7.70	1.74	8.31	1.52	7.38	1.76	4.03***
Tot_activity	1.98	1.06	1.96	1.05	1.99	1.07	-0.21
DurMig	_	_	_	_	4.46	3.40	_
DisSch	6.21	5.45	4.30	3.98	7.20	5.85	-3.98***
DistMarket	3.90	1.15	3.86	1.10	3.92	1.17	-0.36

Note: 1) S.D.: Standard Deviation; statistical significance: *** at 1%, ** at 5%, * at 10%
    2) % within the total sample in each group of HHs i.e. non-poor, poor, and poorest.
Source: Household survey conducted by the author

Table 4.3 presents descriptive statistics of variables used in the regression analyses. As mentioned earlier, the sample size of this study is 234 households, of which 154 are MHHs. The distribution of non-poor, poor and poorest households among MHHs is 37.7, 14.3 and 48.1 percent respectively, while the distribution for non-MHHs is 46.2, 21.2 and 32.5 percent respectively. This suggests that majority of MHHs are the poorest, while majority of non-MHHs are the non-poor.

Out of 154 MHHs, 57 percent (88 HHs) had their first migration trip in 2006 or afterwards, whereas the first migration in another 43 percent (66 HHs) was undertaken earlier in between 2000 and 2005. When disaggregated by economic groups, 66.2 and 63.6 percent of the poorest and poor households just migrated in 2006 or later, while only 43.1 percent of non-poor households did so. From this distribution, it seems that the poorest and poor households are more likely than the non-poor households to migrate in 2006 or later.

Unlike the distribution of MHHs by year of migration, the distribution of MHHs by subsequent migration has shown that poor and non-poor households seem to be more likely than the poorest households to send out subsequent migrants. In total, 64 MHHs had subsequent migrants. While 59 and 56.9 percent of the non-poor and poor households sent out subsequent migrants after the first migration trip in their households, only 24.3 percent of the poorest MHHs did so. The average duration of migration of the sampled MHHs was 4.46 years.

MHHs and non-MHHs were different in terms of socio-demographic characteristics. The representation of female-headed households in the sample was only one fourth, but the

figure was quite high if compared to overall statistics of the commune. According to the commune statistics in 2009, out of 3,764 households, there were only 426 households (11.32 percent) headed by women.[25] The percentages of sampled MHHs and non-MHHs managed by women were not much different (27 percent and 25 percent respectively). However, with statistical significance, MHHs had older but less-educated household heads than non-MHHs (43.54 vs. 33.52 years old and 3.95 vs. 5.20 years of schooling). Moreover, when compared to non-MHHs, MHHs had more working-age members (3.66 vs. 2.54 persons) but smaller value of child dependency ratio (0.59 vs. 0.66). However, only the difference in number of working-age members was statistically significant.

Economic conditions of non-MHHs on average were better than those of MHHs with the index of house quality 8.31 vs. 7.38, as a large value on the index of house quality implies good economic condition of the household. The difference was statistically significant. Although non-MHHs on average had fewer economic activities than MHHs (1.96 vs. 1.99), the difference was not statistically significant. While rice farming was the main income source, the sampled households still engaged in additional supporting activities, which were mostly wage labor, livestock farming and vegetable growing. Finally, compared to non-MHHs, on average MHHs tend to come from larger and more remote villages.

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[25] Data is taken from the 2010 Commune Databook (CDB) of Nimith Commune as of December 2009, which was obtained during fieldwork in January 2011. The CDB contains core information regarding demographic, socio-economic and physical assets of each commune and is used to produce the poverty index for the allocation of investment funds for communes (National Committee for Sub-National Democratic Development, http://www.ncdd.gov.kh/resources/database/cdb, last access: August 11, 2011).

4.3.2 Bivariate correlations

To check if the selected variables have any serious problem of multicolinearity, I did the Phi statistic among the dummy variables and the Pearson test of correlation among the continuous variables. As presented in Table 4.4 and Table 4.5, among the variables that are correlated with each other, except between D_poorest and D_nonpoor, their correlation coefficients were not big enough to cause any problem of multicolinearity. However, the strong correlation between D_poorest and D_nonpoor is not a concern because I included only D_poorest in the regressions and treated D_nonpoor as a reference group.

As the level of economic condition is represented by the dummy variables generated based on the household's size of landholding, it is necessary to examine if the size of landholding is a valid indicator to represent household economic condition. The result of correlation test in Table 4.4 shows that the variable 'Totland' had positive and significant correlation with the variable 'Index_house' (coefficient = 0.195, significant at 5 percent) and the variable 'Tot_activity' (coefficient = 0.257, significant at 1 percent). Therefore, dividing households into three groups – poorest, poor and non-poor – by their size of landholding is acceptable.

Table 4.4: Result of the Phi Statistic Testing Correlation among Dummy Variables used in the Regressions

	HHstatus	D_Y2006	D_SubMig	HHH_gender	D_poorest	D_poor	D_nonpoor
HHstatus	1						
D_Y2006	-	1					
D_SubMig	-	-0.281**	1				
HHH_gender	0.180	0.076	-0.031	1			
D_poorest	0.149*	0.176*	-0.336**	0.058	1		
D_poor	-0.089	0.054	0.145	-0.004	-0.386**	1	
D_nonpoor	-0.083	-0.221**	0.242**	-0.055	-0.714**	-0.370**	1

Note: ** and *. Correlation is significant at the 0.01 and 0.05 levels respectively.
Source: Household survey conducted by the author

Table 4.5: Result of the Pearson Test of Correlation among Continuous Variables used in the Regressions

	HHH _age	HHH _edu	WorkAgeMM	ChildDepRat	Index _house	Tot _activity	DurMig	DistSch	DistMarket	Totland
HHH_age	1									
HHH_edu	-0.239**	1								
WorkAgeMM	0.451**	-0.099	1							
ChildDepRat	-0.090	-0.027	-0.382**	1						
Index_house	0.008	0.046	-0.102	0.041	1					
Tot_activity	-0.047	0.062	0.158*	0.005	0.011	1				
DurMig	-0.359**	0.161*	-0.358**	0.134*	0.234**	0.070	1			
DisSch	0.057	-0.124	0.082	-0.059	-0.140*	0.112	-0.191**	1		
DistMarket	0.019	0.121	0.018	-0.006	0.051	-0.127	0.114	-0.305**	1	
Totland	0.081	0.060	0.160*	-0.071	0.195*	0.257**	0.054	-0.051	-0.123	1

Note: ** and *. Correlation is significant at the 0.01 and 0.05 levels respectively (2-tailed).
Source: Household survey conducted by author

4.3.3 Regression results

Table 4.6: Results of Regression Analyses on Determinants of CBLM

	Probit Model (1) HHstatus	Probit Model (2) D_Y2006	Probit Model (3) D_SubMig
main			
HHH_gender	-0.38	0.04	0.13
	(0.25)	(0.27)	(0.28)
HHH_edu	-0.04	-0.02	-0.01
	(0.03)	(0.03)	(0.04)
HHH_age	0.03***	0.03***	-0.01
	(0.01)	(0.01)	(0.01)
WorkAgeMM	0.24***	-0.03	0.32***
	(0.09)	(0.10)	(0.11)
ChildDepRat	0.20	-0.47**	0.47**
	(0.16)	(0.21)	(0.22)
Index_house	-0.22***	-0.10	-0.14**
	(0.06)	(0.07)	(0.07)
Tot_activity	-0.00	-0.17	-0.10
	(0.10)	(0.12)	(0.13)
D_poor	0.01	0.77**	0.00
	(0.29)	(0.36)	(0.35)
D_poorest	0.51**	0.62**	-0.97***
	(0.23)	(0.27)	(0.28)
DistSch	0.08***	-0.02	-0.02
	(0.02)	(0.02)	(0.02)
DistMarket	0.14	-0.26**	-0.09
	(0.09)	(0.10)	(0.11)
DurMig			0.13***
			(0.04)
_cons	-0.74	1.25	0.34
	(0.75)	(0.89)	(0.91)
N	234	154	154
chi2	81.28	37.97	45.75
p	0.00	0.00	0.00
ll	-109.65	-86.18	-81.66

Note: - Standard errors in parentheses
      - Significance level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: Household survey conducted by the author

As mentioned earlier, the objective of this study is to examine the effect of poverty, measured by the size of landholding, on CBLM from Cambodia to Thailand. Specifically, it investigates whether poverty leads to positive, intermediate or negative selectivity for Cambodian migrants to Thailand, and whether the anticipated effect of poverty as a constraint to migration has declined in 2006 or later and subsequent migration in each household. To achieve the stated objective, the study did three separate Probit regression analyses. All the three estimation models were statistically significant at less than 1 percent; thus, the models are appropriate in explaining the determinants of CBLM. I also estimated marginal effects of the significant variables (complete results are provided in Appendix 4.2–4.4). Table 4.6 above presents the regression results, and below is a summary of significant variables and their marginal effects.

The first Probit regression measured the probability to migrate through a dichotomous variable 'HHstatus', which takes on the value '1' if the household had any member crossing the border to work in Thailand for long-term duration and '0' otherwise. The objective of this model is to examine the type of migrant selectivity. As shown in Probit Model (1) of Table 4.6, both D_poor and D_poorest had positive coefficients when compared to D_nonpoor, which was the reference group. This clearly indicates that, among the three groups of households, a member from the non-poor household was least likely to migrate. Thus, poverty does not lead to positive selectivity for labor migration from the research site. In addition to being statistically significant, the estimated coefficient of D_poorest also had a larger positive value than that of D_poor. The bigger, positive and statistically significant estimated

coefficient of D_poorest proves that migrants from the research site are negatively selected. In terms of marginal effect, a member of poorest households had on average 16.5 percent higher probability to migrate than a member of non-poor households (see Appendix 4.2).

The second regression analyzed whether the effect of poverty in terms of landholding became stronger or weaker in the recent period of labor migration when compared to the earlier period. The dependent variable is 'D_Y2006' which was coded '1' if the household started migration in year 2006 or afterwards and '0' if the year of migration was between 2000 and 2005. Based on the result of Probit Model (2) in Table 4.6, the effect of small landholding/landlessness as an obstacle of migration has decreased in the recent period of migration (2006 or later), which enables the poor and poorest to migrate more than before. The positive and statistically significant estimated coefficients of D_poor and D_poorest, when compared to D_nonpoor, mean that on average the members of poor and poorest households were more likely to migrate recently (2006 or later) than the members of non-poor households. Moreover, between the poor and poorest households, the poor households were responding more to the change in the effect of small landholding/landlessness than the poorest households as manifested in their bigger estimated coefficient (0.77 vs. 0.62). Regarding the marginal probability to migrate, the poor and poorest households had 26.8 and 23.8 percent higher probability to migrate recently than the non-poor households respectively.

Finally, the third Probit regression aimed at examining if small landholding/ landlessness is a constraint for the households to send subsequent migrants to Thailand. The dependent variable in this regression is 'D_SubMig, which also takes on the value '1' if the

household had subsequent migration and '0' otherwise. The result of Probit Model (3) in Table 4.6 clearly proves that the non-poor households or households owning land two hectares or more were most able to send subsequent migrants to Thailand. While the estimated coefficient of D_poor was not statistically significant, the estimated coefficient of D_poorest was negative and statistically significant when compared to D_nonpoor. This implies that, among the three groups, the poorest households or households owning no land or less than a hectare of land were least likely to send subsequent migrants. On average, the poorest households had 35.6 percent lower probability of sending subsequent migrants than the non-poor households.

In summary, CBLM from the research site showed negative selectivity, and the effect of poverty in terms of landholding has declined in the recent outflow of migrants. Despite its dwindling effect, however, small landholding or landlessness was still a constraint for the poor and poorest households to send as many migrants to Thailand as non-poor households. The constraint was stronger for the poorest households. On average, poorest MHHs were able to overcome financial difficulty to undertake one migration, especially recently, but their limited financial capability did not enable them to send many migrants to Thailand. On the other hand, non-poor households were least likely to migrate, but when they did they had enough financial resources to finance many of their household members to Thailand. Therefore, it is possible to expect a larger number of poorest MHHs than non-poor MHHs in the research site but more migrants in the non-poor HHs than in the poorest HHs. Below is an explanation of the statistically significant coefficients of the control variables.

Regarding household heads, only their age had significant effect on labor migration. As expected, the age of household head (HHH_age) had a positive, despite marginal, and significant effect on the probability to migrate, especially recently, of their household members. An additional year increase in the age of household head from the average of 40.12 years is associated with a 1 percent increase in the probability to migrate (see Appendix 4.2). Among MHHs, an additional year increase in the age of the heads from the average of 43.54 years is associated with a 1.1 percent increase in the probability to migrate recently (see Appendix 4.3). Like the positive coefficients in models (1) and (2), the negative coefficient of HHH_age in model (3) might also be explained by the life-cycle effect (Lipton, 1980; Adams, 1993). Although older household heads tend to have children at the age that can migrate, they might not send out many children since they need someone to take care of them. The culture of Cambodia is that children have a social duty to take care of their elderly parents or relatives.

Also as expected, the number of working-age members had a positive and significant effect on the probability to migrate and to send subsequent migrants. An additional person increase in the number of working-age members from the average of 3.27 persons is associated with a 7.9 percent increase in the probability to migrate (Probit model 1). Similarly, among MHHs, an additional person increase in the number of working-age members is associated with a 12.4 percent increase in the probability of sending subsequent migrants (Probit model 3). Despite being statistically insignificant, the negative coefficient of the variable 'WorkAgeMM' in Probit model (2) can be interpreted that households whose migration just started recently on average had fewer working-age members than those started

migration earlier (2000-2005). In other words, households whose migration just started recently did not have many working-age members available to send to Thailand before 2006.

Child dependency ratio (ChildDepRat) had a negative and significant effect on the probability to migrate recently but had a positive and significant effect on the probability to have subsequent migration. Although the estimated coefficient was not statistically significant, the variable also had a positive effect on the decision to migrate. An additional value increase in child dependency ratio from the average of 0.59 is associated with an 18.5 percent decrease in the probability to migrate recently (see Appendix 4.3) but an 18.1 percent increase in the probability to have subsequent migration.

The past studies consider child dependency ratio as an indicator of inactive labor and thus expect it to have a negative effect on labor migration (see, for example, Quinn, 2001; Görlich & Trebesch, 2008; Gray, 2009). However, it is noteworthy that labor migration in the past studies mostly observed positive selectivity, while labor migration in the present study observed negative selectivity. When interpreted from the perspective of poverty, it is understandable that the variable had a positive relationship with labor migration since the poor and poorest households in Cambodia, as well as in other developing countries, tend to have more young dependents than the non-poor households. The high child dependency ratio pressures the working-age members to migrate in order to earn additional income. The negative effect of the ChildDepRat on the probability to migrate after 2006 can be explained through the same logic. Those who migrated after 2006 had less pressure caused by high number of young dependents than those migrated during the period 2000-2005. Therefore, it

can be inferred that the lower child dependency ratio may have delayed households' intention to migrate before 2006 and to decrease the probability to send out subsequent migrants.

Unlike the total numbers of economic activities (Tot_activity) which had negative, as expected, but insignificant effect on CBLM, the index of house quality (Index_house) was of considerable importance in explaining the probability to migrate and to have subsequent migration. As the bigger index implies a better economic condition, the negative coefficient of the variable indicates that the decision to migrate or to have subsequent migration was induced by poor house quality. Regarding the marginal effect, an additional value increase in the index of house quality from the average of 7.70 in Probit Model (1) and 7.38 in Probit Model (2) is associated with 7.3 and 5.3 percent decrease in the probability to migrate and to have subsequent migration respectively. It is noteworthy that only a few studies have examined the effect of house quality on labor migration and did not find its significant effect (Quinn, 2001; Arrehag, Sjöberg & Sjöblom, 2006). The significant effect of house quality in this study can be attributed to the different combination of house quality that I selected (type of floor, type of wall, type of roof, and size of the house), which more accurately represent the situation at the research site and other rural areas of Cambodia.

The probability to have subsequent migration had a positive relationship with the duration of migration (DurMig). An additional year increase in the duration of migration from the average of 4.46 is associated with a 4.8 percent increase in the probability to have subsequent migrants (see Appendix 4.4).

Finally, regarding community characteristics, the distance to the lower secondary school (DistSch) had a positive and significant effect on the probability to migrate, while the distance to market (DistMarket) had a negative and significant effect on the probability to migrate recently. It is important to note that these two variables had similar effects on migration in all the three models. As both indicators represent the development level of the community, the positive effect of DistSch on the probability to migrate suggests that households living in the less developed areas or further from a lower secondary school are more likely to undertake migration. An additional kilometer increase in the distance to secondary school from the average of 6.3 kilometers is associated with a 2.5 percent increase in the probability to migrate.

The negative and significant coefficient of DistMarket in Probit model (2) suggests that, compared to those who migrated before 2006, those who migrated after 2006 tend to live closer to the market or in a more developed area. An additional kilometer increase in the distance to the market from the average of 3.92 kilometers is associated with a 10.1 percent decrease in the probability to migrate after 2006. Therefore, it can be inferred that developing rural areas by creating business centers where people can do trading to generate income may be able to delay the probability of migrating, even if the households still migrate ultimately.

4.3.4 Why were poorest and poor households more likely to migrate but less able to send subsequent migrants?

4.3.4.1 Factors explaining high ability of the poor and poorest to migrate

Two factors possibly play roles in making labor migration of the poor and the poorest possible: Thai employers and migration networks which include migrants' relatives or friends and informal brokers. It is important to note that the analysis in this section was based only on

data from MHHs in the second round of data collection (104 MHHs). While the questionnaire used in the first round of data collection did not include questions on migration networks and border-crossing experience, neither of the questionnaires included a question about the role of Thai employers in facilitating the labor migration. Therefore, the analysis on the role of Thai employers was based only on the available information provided by some MHHs as responses to the open-ended and probing questions.

- Thai employers

The information from 14 MHHs has revealed three roles that Thai employers played in facilitating labor migration and employment of illegal workers. The first role was to reveal their labor needs to migrant networks. Three respondents similarly said that their friends or relatives, who were already migrant workers, had been asked by their Thai employers to find more workers. The respondents thus decided to send the migrants after being informed by their relatives or friends about the demand for additional labor.[26] Although only three respondents stated that Thai employers had informed employees about the labor needs, 91 respondents stated that their relatives, friends or informal brokers had informed them about job availability. Since the relatives, friends and some informal brokers were workers in Thailand when they relayed the information, it is acceptable to assume that they also received job information from their employers. Only five respondents mentioned that migrants left Cambodia without prior job information, and another five respondents did not provide any information on this point. Therefore, it can be inferred that prior job information is generally a prerequisite for households to decide whether or not to migrate.

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[26] Interview with MHHs No. 0012 in Thmor Sen village on January 18, 2011, No. 0054 in Dong Aranh village on January 20, 2011 and No. 0063 in Thmor Sen village on January 17, 2011.

The second role played by Thai employers, which may make labor migration of the poor and poorest possible, is to cover the broker fee for prospective migrants. When employers pay the broker fee, they could make the payment in advance, so that the brokers have money to arrange the journey for migrants, or later after migrants arrive at the workplace. Five respondents (four respondents from poorest households) stated that Thai employers paid the broker fee for migrants and deducted it from their salary later. For example, one respondent described the process as follows: the broker fee to Samoy island was 6,000 Baht, but the employer paid the broker in advance and deducted 1,500 Baht per month for four months from his daughter's salary (monthly salary = 5,000 Baht).[27] Although the survey included questions regarding the amount of broker fee and to whom it was paid, there was no question on the source of money – whether migrants paid by themselves or the Thai employers paid for them. Therefore, it is impossible to conclude from the available information whether or not this practice of advance payment is widespread.

However, findings of a study on labor migration from Cambodia and Lao PDR to Thailand, commissioned by the ILO and many other organizations, reveal that Thai employers have to pay all the recruitment costs to the recruitment agents and recover the costs through partial deduction of migrants' monthly salary for some months. For example, a Cambodian recruitment agent explained that the company charged 20,000 Baht per migrant from Thai employers, and the employers would deduct 2,000 Baht per month from migrants' salary (Chantavanich, 2008: 30). As long as Thai employers and brokers have built enough trust with each other, which is most likely to happen since some brokers are their current workers, there seems no reason for the employers to refuse the advance payment in order to fulfill their

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[27] Interview with MHH No. 0053 in Thmor Sen village on January 18, 2011.

labor needs since they also have to make advance payment to employ migrants through formal channels.

The third role played by employers was to facilitate migrants' work in Thailand. It seems that the role of informal brokers is just to bring migrants from Cambodia to Thailand, but the role of employers is to take care of migrants during their stay in Thailand. Six respondents mentioned various aspects of this role. For example, two respondents mentioned that after migrants arrived in Thailand, employers made a 'passport' (they meant work permit) for them to become legal migrants.[28] Another respondent, who was a former migrant, stated that when she was caught by Thai police, her employer paid a bail fee for her.[29] The practice of worker registration might help reduce risks and dangers inherent in the illegal aspect of migration and leave only the risks and dangers caused by employers' treatment. As a result, when asked about their concern on migrants' safety, 37 respondents stressed safety along the way, while only 14 respondents felt concerned about safety during work in Thailand. One respondent emphasized that she was only worried that the migrant might be caught when crossing the border to Thailand. If the migrant could successfully reach the workplace, there would not be any problem for her in Thailand.[30]

There seems to be two great benefits for Thai employers in facilitating illegal migration of foreign workers: sustainable business operation and considerable reduction in employment costs. As the review in Section 3.6.4 has shown, due to the limited supply of formal CLM unskilled labor and the high cost of, and difficulty in, employing Thai workers, the only solution for Thai employers, especially those in the labor-intensive industries, is to

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[28] Interviews with MHHs No. 0006 and 0076 in Nimith Mouy village on January 17 and 18, 2011 respectively.

[29] Interview with MHH No. 0091 in Dong Aranh village on January 20, 2011.

[30] Interview with MHH No. 0035 in Nimith Mouy village on January 19, 2011.

employ illegal migrants. In addition to the needs being fulfilled, the employment of illegal workers enables Thai employers to reduce hiring costs to a great extent. Pholpirun et al. (2010) found that the additional 10 percent employment of unskilled migrants could help firms save about 5,746 Baht per person per year.

The employment of illegal migrants is further eased by the weak immigration policy of Thailand. Domestic legal instruments that regulate ILM in Thailand include laws, MoUs, and the cabinet decisions. There are three laws related to ILM: the Immigration Law (1979), the Foreigner Employment Act (1978) and the Labor Protection Law (1998). In addition to these laws, Thailand regulates the ILM through the MoUs signed with Lao PDR (2002) and Cambodia (2003). According to the 1978 Employment Act, foreigners are allowed to work in only 27 occupations, but Article 17 of the 1979 Immigration Law gives more flexibility to the government, resulting in the ongoing releases of the cabinet decisions on illegal migrant workers (see Appendix 3.4 for the Thai cabinet decisions on migrants, 1992-2006).

Although the official sending of workers from Cambodia and Lao PDR started in 2006, legal migrants from Myanmar had presented in Thailand since 1992 through the policy to register existing illegal migrants in Thailand. In 1992, the registration was made available to employers in 10 provinces, but only 706 illegal migrant workers were sent for registration due to the government's requirement for the bail or guarantee fee (Martin, 2008: 2).

Most of the registration campaigns incurred fees to employers, which were ultimately borne by the workers. The first fee-paid registration was held in 1996, and a total of 323,123 existing illegal migrants were registered. In 1997, the Thai government decided not to renew

work permits as a way to reduce migrants and thus secure the jobs for Thai workers. The targeted reduction was 300,000 migrants in 1997 and another 300,000 migrants in 1998. However, due to the economic recovery in 1998, the government allowed for re-registration of migrants in 1999 and 2000, and there were approximately 100,000 workers registered each year. In August 2001, the Thaksin government successfully registered 568,000 illegal migrants, but the number of registered migrants in 2002 dropped to only 350,000 workers (Martin, 2008: 3). One plausible reason is that the too-short time span between the 2001 and 2002 registrations (six months) made the registration fee too expensive and unreasonable for the employers to cover.

Along with the existing registration policy, the Thai government has opted for a new strategy to reduce illegal migrants by approving formal employment of workers from CLM. In 2003, the Ministry of Labor asked local employers to report the number of needed workers. As a result, 245,100 employers requested 1.5 million migrants (Martin, 2008: 3). The requested workers are expected to be sent to Thailand under the MOUs. However, the number of formal migrants sent from CLM could not meet the demand made by the Thai employers for the reasons mentioned in Section 3.6.3. In order to keep track on the total number of migrants in Thailand, the Ministry of Interior launched a free registration campaign by issuing a permit for staying in Thailand for an additional year as an incentive for registration. As a result, 1,284,920 migrants came to register (Martin, 2008: 3). The paid registration campaigns were also held in 2005 and 2006.

The review of labor migrant registration policies of Thailand has shown that there is no severe penalty imposed on Thai employers found hiring illegal migrants. Instead, the Thai government has opted to implement a periodical registration policy to legalize illegal migrants. Therefore, in the worst scenario, Thai employers just pay the required registration costs and they can keep the migrants working for them. As the registration is predictable, Thai employers may feel less concerned about employing illegal migrants first and registering them later. The periodical registration policy might reflect two opposite things. On the one hand, it reflects the genuinely limited capacity of the Thai government in managing in-migration, but on the other hand it may reveal the government's implicit admission that the presence of illegal migrants is indispensable for the Thai economy.

In short, the descriptive information has suggested that Thai employers have played three important roles – sharing job information, paying for broker fees in advance, and providing protection to migrants during their work in Thailand – which potentially have positive effects on households' decision to migrate and the possible labor migration of the poor and poorest. While all three roles seem to have strong influence on households' decision to migrate, the second role – paying broker fees for migrants in advance – has most potential in explaining why the poor and poorest have large representation in the migration stream from the research site. However, due to the limited data, it is impossible for the present study to adequately explain the roles of Thai employers in making labor migration of the poor and poorest possible.

- Migration networks

There are two components of migration networks: free network – relatives, friends and neighbors – and paid network, which basically refers to informal brokers. 'Free network' means that migrants can get assistance from this type of network at no cost. On the other hand, they cannot get assistance from informal brokers unless they pay the service fee. As mentioned earlier, the question on migration networks was asked to only 104 MHHs in the second round of data collection.

Out of 104 HHs, 65 HHs had access to a free network, 60 HHs had access to a paid network, and 25 HHs had access to both types. The main role of free networks is limited to providing information about job, life in Thailand and reliable informal brokers. In addition to this role, the paid network can facilitate the migration journey for prospective migrants. Ninety two out of 104 MHHs relied on informal brokers to go to Thailand. Migrants from another 12 HHs who went on their own usually just migrated to a near-border location.

According to information from the in-depth interviews, it seems that access to migration networks in the research site is not exclusive to any particular group of households. Some migrants got job information from their free networks and contacted informal brokers to facilitate their trip, while some other contacted informal brokers for job information and cross-border arrangement together. Therefore, while access to a free network provided prospective migrants with confidence to go to Thailand, the only person who could make migration possible for prospective migrants was the informal broker. The information from

interview, questionnaire and other secondary sources suggests that, particularly for the poor and poorest, informal brokers could make their migration possible in three ways.

First, the informal brokers helped reduce considerable costs of labor migration to Thailand. Compared to legal labor migration to Thailand through labor recruitment companies, the financial cost of illegal border crossing was much cheaper. According to Chan (2009), it costs a migrant US$700 to migrate legally to work in Thailand. Out of this cost, workers can pay US$600 (approximately 20,000 Baht) in 10 installments during their work in Thailand, but they must pay US$100 (about 4,000 Baht) for the processing of documents in Cambodia. On the other hand, the surveyed households usually paid informal brokers only around US$80 (about 2,500 Baht) or even less for each migrant to cross the border, and there was no additional payment in Thailand.

Second, due to the cooperation between informal brokers and Thai employers, some migrants did not have to pay the broker fees before they left Cambodia. As described in the previous section, five respondents mentioned that migrants left Cambodia with the broker without paying the broker fee in advance. For example, one respondent said that because he strongly opposed his daughter's plan to migrate, she left for Thailand with the broker on a day her father was not at home. He learned the news of her departure from his neighbors and from her phone call from Thailand.[31] Due to the close cooperation between brokers and Thai employers, brokers were able to help take migrants to Thailand and receive the broker fees from Thai employers upon arrival in Thailand. Migrants had to pay the costs in installments to

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[31]Interview with MHH No. 0094 in Thmor Sen Village on January 18, 2011.

the employers, but the costs were just around 3,000 Baht and the period of salary deduction was shorter than through the legal channel.

Finally, the changing pattern of labor migration between the early (2000-2005) and recent (2006-2011) labor migration as shown in Probit Model 2 can possibly be explained by the competition among informal brokers, which has led to the reduction in costs and risks of migration. In the early period of labor migration, the existence of informal brokers might not be widely known to villagers because brokers tried to hide their identity since by law they are not allowed to help people cross the border illegally to work in another country. However, as the service is a lucrative business, more and more people including former and current migrants have become informal brokers, and they compete among themselves in terms of price and safety of their services.

The interview with staff of a local organization revealed that the cost of labor migration from the research site has significantly decreased from 3,000-4,000 Baht (US$ 97-130) in the early 2000s to only around 1,800 Baht (around US$ 58) since 2006 because people now have easier access to brokers.[32] Moreover, information from interviews with respondents from migrant households showed that the majority of recent migrants went through the international border gate using a weekly border pass bought for them by brokers, whereas in the early 2000s brokers tended to instruct migrants to cross the border stream and

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[32]Interview with Mr. Va Kimheang, member of staff of the Social Environment Agricultural Development Organization (SEADO) on January 19, 2011

forest into Thailand. Some migrants had to sleep in the forest for two or three days before they could get into Thailand.[33]

The weekly border pass exists as a result of the bilateral trade agreement between Cambodian and Thailand. After the signing of the trade agreement, the Poipet border checkpoint came into operation in 1991, became more formal in 1993, and was officially declared as the Poipet International Border Checkpoint on June 30, 1994. Thanks to the cessation of hostilities, and despite the existence of Khmer Rouge force, economic activities across borders increasingly expanded since 1998. Movement of people and goods between Thailand and Cambodia was made possible. People could buy a daily border pass for 10 Baht to cross the border checkpoint. In 2003, it is estimated that around 10,000 people crossed the border each day (Development Analysis Network, 2005: 34 & 160).

Besides the daily border pass, there is also a weekly border pass system in place to facilitate migration. As part of the agreement between Thailand and Cambodia, the border pass system which is valid for two years has been piloted in Poipet to facilitate labor migration of seasonal workers from Cambodia. Holders of the border pass have to return to the border to obtain a stamp every week and pay 20 Baht per time. The pass may cost 1,040 Baht per year if it is stamped every week, excluding the costs of traveling and time. The border pass can be obtained at the border checkpoint in Poipet, and is provided only to residents of districts along the Cambodian-Thai border. This arrangement is eligible for Cambodian workers who are engaged in seasonal labor migration to specific border provinces of Thailand (Chan, 2009: 25). Nonetheless, my preliminary study in O Chrov district has shown that any person regardless of where s/he is from can buy the weekly border pass to go

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[33] Interview with MHH No. 0071 in Soriya village on January 19, 2011

to Thailand. Moreover, migrants are actually not seasonal workers but rather long-term laborers who work in restaurants or casinos in nearby districts of border in Thailand. Although they migrate legally to Thailand using the weekly border pass, some people subsequently become irregular migrants due to expiry of the pass.

Information from the interviews suggests that now people are more aware of risks and dangers associated with CBLM, so they are more careful in choosing informal brokers to facilitate their journey. For example, one respondent reported that she was not so worried about the migrant household member because she had contacted a good and reliable broker recommended by her experienced neighbors and relatives.[34]

In short, the descriptive information from interviews suggests that recent labor migration seems to be less costly and risky, which is a possible explanation as to why there is high representation of the poor and poorest households in the recent outflow of CBLM from the research site.

4.3.4.2 Factors explaining low ability of the poorest to send subsequent migrants

Although costs and dangers of CBLM have decreased considerably due to competition among informal brokers and their helpful arrangements, the cost of labor migration is still too high for the poorest households to send subsequent labor migrants to Thailand. Three plausible explanations for the low probability of the poorest households sending subsequent migrants are the financial cost of labor migration other than the broker fee, the limited access to credit, and the smaller number of working-age members. Regarding the cost of labor

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[34]Interview with MHH No. 0089 in Thmor Sen village on January 18, 2011

migration, one respondent explained that the migrant in her household was able to go to Thailand without paying the broker fee because it was covered by the Thai employer but she still borrowed money from an informal lender for the migrant as pocket money.[35] Another respondent mentioned that she needed to borrow up to 9,000 Baht to finance two of her children to Thailand.[36]

The financial difficulty becomes a bigger constraint when the poorest have no or limited access to credit, even informal credit. For instance, two respondents from poorest households complained that neither formal credit institutions nor informal lenders were willing to lend them money because they were afraid that the respondents had no ability to repay.[37]

Finally, the poorest households might be less able to send subsequent migrants due to their lower number of working-age members when compared to non-poor households (3.38 vs. 3.91 persons). The result of t-test for equality of mean has shown that the difference was statistically significant (t-value = 1.997, significant at 5 percent).

In summary, the descriptive information gave some hints to why the poor and poorest have high representation in out-migration from the research site and why the poorest are less able to send subsequent migrants than the non-poor. Thai employers and migration networks, especially informal brokers, seem to be potential factors in explaining the high probability of

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[35] Interview with MHH No. 0100 in Soriya village on January 19, 2011

[36] Interview with MHH No. 0073 in Dong Aranh village on January 19, 2011

[37] Interviews with MHHs No. 0091 in Dong Arah village on January 20, 2011 .and No. 0098 in Soriya village on January 19, 2011

the poorest and the poor to migrate. On the other hand, the limited ability of the poorest to send subsequent migrants can possibly be attributed to the financial costs of migration other than the broker fee, their limited access to credit and their smaller number of working-age members.

However, since the research does not provide enough information to prove the effects of these factors, a further qualitative study is needed on the financial aspects of labor migration, particularly the role of Thai employers and migration networks in reducing the cost of labor migration, in order to improve understanding of factors affecting CBLM of the poor and poorest. Moreover, due to the limited sample size, the study could not run regression by separating sample into three sub groups of HHs – poorest, poor and non-poor – to confirm the effect of working-age members. Therefore, for a better result of the effects of other control variables, including household factors, a further quantitative study with large sample size should run separate regressions for the three groups of households: poorest, poor and non-poor.

4.4 Conclusions

By analyzing retrospective data of 154 MHHs and 80 non-MHHs in the border area through three Probit regressions, this study sheds more light on the effects of poverty, measured by the size of landholding, on South-South CBLM, which ultimately contributes to the current debates on poverty-migration linkages. Concretely, I analyzed whether small landholding or landlessness has positive, intermediate or negative selectivity for Cambodian labor migrants to Thailand and whether the influence of small landholding or landlessness as

a constraint to labor migration has declined after 2006 and in terms of subsequent labor migration in each household.

The main finding on the effects of poverty, measured by the size of landholding, can be summarized as follows. The result of Probit model (1) clearly proves that small landholding/landlessness leads to negative selectivity for labor migration from the research site. On average, the poorest have higher probability of migrating than the non-poor, though not necessarily more than the poor. The result of Probit model (2) shows that after 2006 the poor and the poorest are more likely to migrate than the non-poor, which suggests that the effect of small landholding/landlessness as a constraint to labor migration has decreased in the recent outflow of migration. Finally, the result of Probit model (3) indicates that the poorest are less likely than the non-poor to send subsequent migrants. This finding implies that although the effect of small landholding/landlessness as a constraint to migration has decreased in the recent outflow of migration, the poorest households still face constraints to sending subsequent migrants.

There are two possible factors that explain the high probability of migrating among the poor and poorest, especially after 2006. Thai employers – a labor demand-side factor – and informal brokers – a labor supply-side factor – seems to have potential effects in making labor migration of the poor and poorest possible. The contractual arrangement between Thai employers and informal brokers regarding the advance payment of the broker fee seems to enable the poor and poorest to migrate without having to pay a broker fee before leaving. Further, the competition among informal brokers to sell their services to prospective migrants

appears to further reduce costs associated with migration, which are already much lower than those of the formal migration channels, as well as reducing risks.

However, notwithstanding the existing contractual arrangement and the growing competition among informal brokers, there are several factors that appear to hinder the ability of the poorest to send subsequent migrants, as follows. The factors include the financial costs of migration other than the broker fees, limited access to credit, and smaller number of working-age members.

There are several control variables that have significant effects on the decision to migrate, the probability of migrating after 2006, and the probability of sending subsequent migrants. The significant control variables can be summarized based on magnitude of their effects, as follows. In descending order, the determinants of probability to migrate were the availability of working-age members (estimated coefficient: coef. = 0.24), the quality of housing (an indicator of physical poverty) (coef. = -0.22), the distance to secondary school (representing the development level of the community) (coef. = 0.08), and the age of household head (coef. = 0.03).

However, the determinants of period of labor migration (2000-2005 or 2006-2011) are different from the general determinants of labor migration. While child dependency ratio had no significant effect on the decision to migrate, it was the most influential factor in explaining households' decision to delay their labor migration until after 2006 (coef. = -0.47) and was followed by the distance to the nearest market (coef. = -0.26) and the older age of household head (coef. = 0.03).

Some of the determinants of subsequent labor migration are similar to the general determinants of labor migration, and some are similar to the determinants of post-2006 migration since the majority of the subsequent migrants left for Thailand in 2006 or later (see Appendix 4.1). From most to least influential, the factors included child dependency ratio (coef. = 0.47), the availability of working-age members (coef. = 0.32), the quality of housing (coef. = -0.14), and the duration of labor migration (coef. = 0.13).

In conclusion, the findings in this chapter partially support the general view of previous research that poverty, measured by the size of landholding, tends to exclude the poorest from labor migration. However, while the non-poor are more able to migrate due to their superior financial, social and human capital, they may be less likely to migrate due to their comparative advantage at home. In contrast to the belief that poverty in terms of small landholding/landlessness excludes the poorest from the labor migration, the study finds that the poorest have higher probability of migrating than the non-poor, which leads to negative selectivity of migrants from the research site. Moreover, the constraints of small landholding/landlessness on labor migration have declined, resulting in increased outflow of the poor and poorest in recent labor migration. In this respect, the study supports the caveats raised by Durand and Massey (1992) and de Haan and Yaqub (2009) that compared to South-North migration, positive selectivity is less visible in South-South illegal cross-border migration where a porous border and extensive migration networks exist.

However, to some extent the research findings support the general view that poverty, measured by the size of landholding, is a constraint to labor migration because the poorest

were less able to send subsequent migrants to Thailand. Although the non-poor were less likely to migrate than the poorest, their financial superiority enabled them to send more migrants to Thailand than the poorest when they wanted to do so. Therefore, the on-going debates on migration-poverty linkages need to take characteristics and various aspects of migration into account before they make firm conclusions about the effects of poverty on labor migration.

In summary, this chapter presented results of the regression analyses on the effects of poverty in terms of small landholding/landlessness on labor migration. The findings show that migration from the research site is negative selectivity; those who migrated in 2006 or later tend to be the poor or poorest, but the poorest households tend to have fewer migrants in total since they are less able to send subsequent migrants.

The analysis to this point has not considered the crucial issue of how labor migration in turn affects poverty of the three groups of households. The following chapter, therefore, analyzes the effects of migration on poverty reduction in terms of household consumption and production as well as determinants of the effects.

Chapter 5: Effects of South-South CBLM on Poverty

5.1 Introduction

The preceding chapter has examined the effects of poverty measured by the size of land on labor migration and found that labor migration from the research site is negative selectivity; those who migrated in 2006 or later tend to come from poor or poorest households, but the poorest households tend to have fewer migrants in total since they are less able to send subsequent migrants. Although the effect of small landholding/landlessness has decreased recently, the decrease is not large enough to enable the poorest to send as many subsequent migrants as the non-poor. Continuing from Chapter 4, this chapter analyzes the effects of labor migration on household's poverty and factors that explain variations in the effects.

Debates on the poverty-migration nexus revolve around whether or not labor migration contributes to poverty reduction. There seem to be three strands of literature on the effects of labor migration. The first strand examines the effects of labor migration or remittances on households' production or investment and reports conflicting findings. The second strand uses alternative approaches to explain the effects of labor migration by examining households' remittance spending behaviors and often finds that remittances are spent on consumption more than production or investment. The final strand tries to explain why the production or consumption effects exist in some cases but not in other cases by focusing on, for example, gender, duration or destination of migration. Although the debates on the poverty-migration nexus involve the issue of migrant selectivity, there is a lack of

study on the effects of labor migration that consider the influence of migrant selectivity. The quality of the current debates suffers from lack of attention to the effects of labor migration on broader/comprehensive aspects of poverty and to the determinants of these effects including migrant selectivity.

To address this gap in the literature, in this chapter I analyze the effects of labor migration on household's poverty by using the same set of data as the previous chapter. Specifically, I analyze whether or not labor migration affects households' consumption and production and what explains variation in the effects of labor migration. The analyses in this chapter address the second main research question (i.e., what are the effects of CBLM on poverty reduction?) and its two sub-research questions (i.e., 1) does CBLM affect households' consumption and production? and 2) what factors explain variations in the effects of CBLM?).

Unlike poverty in Chapter 4 which was measured by the size of land, poverty in this chapter is measured by five dimensions which can be characterized as consumption-based poverty and production-based poverty. On the consumption side, there are three dimensions: 1) ownership of durable goods, 2) house quality, and 3) education. Another two dimensions are on the production side: 4) ownership of agricultural tools and 5) income diversification.

While the size of land is considered the most valid indicator to measure the effect of poverty on labor migration, findings from past studies on labor migration in Cambodia suggest that it is not yet the right time to measure the effect of labor migration on landholding but rather on the selected five dimensions of consumption-based poverty and production-based poverty. As land and labor are the two key assets that the rural poor possess, when they

have no land or only a small piece of land, they might be forced to migrate to generate additional household income. Unlike the effects of income or expenditure which are heavily influenced by seasonality and timing of the survey, the effect of land on labor migration tends to be long-term and fixed. The majority of rural Cambodian without land had actually never owned a land before, not that they had and then lost it. Because land is very expensive, it seems almost impossible for the rural Cambodian to increase the size of their land through purchase by using remittances which tend to be in small amount. As a result, past labor migration studies on Cambodia seemed to consistently find only short-term effects of labor migration. MHHs in Cambodia spent their remittances on buying food, repaying debt, covering medical expenses, purchasing seed and fertilizer, covering educational expenses of migrants' siblings, improving house conditions, increasing savings, and buying consumer goods (Dahlberg, 2005; CDRI, 2007). Therefore, it might take some more time for studies to examine the long-term effect of labor migration on poverty in terms of landholding.

The rest of this chapter is structured into four sections. Section 5.2 describes empirical challenges of impact studies and is followed by Section 5.3 explaining research method, data, variables and empirical findings in response to the first sub-research question. Following Section 5.3, Section 5.4 presents research method, data, variables and empirical findings in response to the second sub-research question. Finally, Section 5.5 concludes the chapter.

5.2 Empirical challenges and common impact assessment methods

This study applied Double Difference (DD) and First Difference (FD) methods to analyze the effects of labor migration on the five dimensions of poverty. I used DD method to

answer the first sub-research question (i.e. does CBLM affect households' consumption and production?) and FD method to answer the second sub-research question (i.e. what factors explain variations in the effects of CBLM?). Below is a discussion on empirical challenges in impact assessment studies and strengths and weaknesses of methods commonly used in impact assessment studies. This discussion is clearly warranted since it explains why DD and FD methods are the most suitable methods for this study.

5.2.1 Empirical challenges

Similar to other types of impact assessment studies, the main challenge in measuring impacts of labor migration is to determine what would have occurred to MHHs if their members had not migrated, for example, what the poverty level of the households would be if none of their members had migrated. This information is called counterfactual information. To assess the impact of labor migration, the best way is to compare actual current and counterfactual outcomes of MHHs. However, it is impossible to obtain this counterfactual information from MHHs since their members have already migrated. In practice, there are two approaches to constituting the counterfactual information: 1) with-and-without comparison and 2) before-and-after comparison (Khandker et al., 2010). However, these two approaches are not free from endogeneity problems caused by 1) selection bias and 2) omitted variables.

The with-and-without method compares MHHs and non-MHHs, for example on current income per capita. However, the question is, if the result shows that MHHs have bigger income per capita than non-MHHs, can the bigger income be attributed to the labor migration of household members? If the argument of migration optimists is correct that

migrants are positively selected in terms of human capital and economic condition, then it is natural that their income levels are already higher than those of non-MHHs even prior to labor migration. For this reason, comparing the current income levels between the two groups raises the problem of selection bias and thus does not produce a correct estimation of the impacts of labor migration. Depending on the pre-migration situations of treatment (MHHs) and control (non-MHHs) groups, such comparison could lead to over- or under-estimation of the effects of labor migration.

An alternative approach is to compare situations before and after migration of MHHs. The information on situation prior to migration can be collected through baseline survey prior to migration or retrospective data. Although this panel data can lead to a better conclusion of the impacts, it still cannot provide a sufficiently accurate assessment of the impacts because there are many external factors that may have influenced the observed post-migration outcomes. While this method is free from the problem of selection bias, it instead encounters the problem of 'omitted variable', which is caused by a failure to include other important factors in the analysis or to account for unobserved characteristics, for example difference in level of risk aversion between MHHs and non-MHHs or personal ability (McKenzie & Sasin, 2007). Such ability determines the decision to migrate and how much income the migrant can expect to earn. However, since such ability is unobservable, it is omitted from the equation or included in the error term. It then becomes correlated with the labor migration variable and turns the estimation result of the impact of labor migration into a biased one.

To sum up, in order to produce an accurate estimation of the impact of labor migration, a study needs to consider the two above-mentioned problems: selection bias and omitted variables. Below is a brief description of a number of common impact assessment methods.

5.2.2 Common impact assessment methods

While experimental research is not possible in social research, non-experimental research is the only available option. There has been methodological advancement in the study of migration impacts. Various methods ranging from a simple to a very complex one have been applied. Some methods can solve one or both of the endogeneity problems mentioned earlier, while others cannot address either of them. Below I discuss strengths and weaknesses of common methods used in studies on migration, impact assessment and program or policy evaluation.

The simplest approach to examine the situation of migrant households after labor migration of one or two family members is to do crosstab between migration variable and interested outcomes, for example health, education and income level. Another use of crosstab is to present items on which remittances are spent. Researchers may ask households how they spend the remittances and tabulate the results, which is in the average format. However, doing crosstabs can only present the current situation of MHHs but not causality between the labor migration and the interested outcomes, and thus findings are not sound for policy implications. This method cannot deal with either of the two endogeneity problems.

Ordinary Least Squares (OLS) is a simple, common approach used to draw causality. This method can analyze the effects of labor migration on MHHs alone or with a control

group. The procedure is to run a regression of the interested outcome on the migration variable (for example, dummy for household status as migrant or non-migrant household) and a set of control variables. As this approach considers only the post-migration situation of households and assumes the independence of labor migration and remittances from the effects of other factors, it also ignores the two endogeneity problems, which turns the coefficient β into a biased estimator. However, if one believes that the bias is not significant, it suffices to use OLS. To correct for possible bias in OLS, one can additionally apply Heckman selection model (McKenzie & Sasin, 2007). However, this model requires the use of instrumental variable (IV), which I will discuss later; otherwise, it is merely based on a functional form assumption which is rather weak for policy recommendations.

To constitute counterfactual information as discussed above, one can use Propensity Score Matching (PSM) to measure the propensity to migrate of treatment and control groups. If non-MHHs have the same or similar propensity to migrate as MHHs, they can provide good counterfactual information for MHHs. The next step is to compare the post-migration outcomes of the treatment and control groups which have similar propensity scores. The average treatment effect of labor migration is the mean difference in the post-migration outcomes between the two groups. To be able to use PSM method, two conditions must be met. First, the estimation of propensity score must include all observed variables that influence migration decision. The incomplete inclusion can lead to poor quality of the estimation result. Second, the method operates with the assumption that unobserved characteristics do not affect the decision to migrate. If the effects of unobserved

characteristics exist and are strong, the generated propensity score will be biased and thus leads to inaccurate estimation of the effects of migration. Although the accurate propensity score makes non-MHHs an appropriate source of counterfactual information for MHHs, ignoring the effects of unobserved heterogeneity among households can also produce a biased estimation result.

A more effective impact assessment method is Difference-in-Difference (DID) or Double-Difference (DD) method (Khandker et al., 2010: 71). This method is better than PSM in that it recognizes the existence of unobserved heterogeneity among households but assumes that it is time-invariant. The DD method can be operated with two- or multiple-period data. Through the use of panel data, the method can detach the effects of fixed unobserved heterogeneity from the post-migration outcome. The estimation result is interpreted differently from OLS or PSM. Instead of comparing the current post-migration outcomes between the treatment and control groups, the method compares net changes in outcomes of the two groups. Hence, the impact of labor migration is the difference in average net change in outcomes between the two groups $\left(\text{impact} = (\overline{Y}_{t1}^{T} - \overline{Y}_{t0}^{T}) - (\overline{Y}_{t1}^{C} - \overline{Y}_{t0}^{C}) \right)$. With the assumption of time-invariant unobserved heterogeneity, the DD method can tackle the two endogeneity problems mentioned in Section 5.2.1 (a detailed description on how the method works is provided in Section 5.2.3).

While DD method requires treatment and control groups, First-Different (FD) method can be operated with only one group of sample: MHHs. Thus, the impact of labor migration is the average net change in the outcome of MHHs $\left(\text{impact} = (\overline{Y}_{t1} - \overline{Y}_{t0}) \right)$. Like DD method,

the benefit of FD method is that it can control for the unobserved fixed effects (Wooldridge, 2009: 458).

Finally, the common method used in labor migration as well as impact assessment studies is the Instrumental Variable (IV) method. This method is better than the above methods when it fully meets its required conditions. Although the DD method produces a more accurate estimation result than OLS and PSM, it is less effective than the IV method because in some cases its assumption on time-invariant unobserved heterogeneity does not hold true. The role of IV is to detach the effects of migration from the effects of omitted variables, for example personal ability. The IV(s) must be tested for its relevance and exogeneity to fulfill two conditions: correlated with labor migration but uncorrelated with the post-migration outcome except through the channel of labor migration (McKenzie & Sasin, 2007). Two criteria for selecting the IV are data availability and outcome of interest. For example, the IV for impacts of ILM may be inappropriate for the study on internal labor migration. Common IVs used in past labor migration studies include, stock of migrants in the community, migration networks, distance between origin and destination areas, natural shock, and cultural, historical community and political factors (McKenzie & Sasin, 2007). It is important to note that weak IVs may lead to a more seriously biased result than OLS and other methods (Khandker et al., 2009).

The review in Chapter 2 has shown that there is an empirical and theoretical regularity that migrants tend to come from less credit constrained households. Therefore, it is ambiguous whether the better post-migration economic and social conditions of MHHs when

compared to non-MHHs are a result of labor migration or the pre-migration unobserved economic condition that makes labor migration possible (Hanson, 2010: 4396). IV method can solve this problem, but the study is not able to apply this method due to the unavailability of some household or community data necessary for constructing a good IV and because using a weak IV may lead to a more seriously biased result than other methods. When panel data is available, DD and FD methods are better than OLS or PSM method because it can control for the effects of unobserved characteristics by assuming that they are time-invariant. Therefore, given the strengths and weaknesses of the available data, DD and FD methods are the most suitable methods for the study.

5.3 Effects of CBLM on consumption and production

This section presents research findings on the effects of CBLM on households' consumption-based poverty and production-based poverty. However, before presenting the research findings, I explain DD method, data source and variables used in the regression, how DD method works, and how its result should be interpreted.

5.3.1 DD method

Instead of comparing the current poverty level of MHHs and non-MHHs, DD method compares net changes in the poverty level of the two groups. That is, given a two-period setting where $t=0$ before migration and $t=1$ after migration or now, letting Y_t^T and Y_t^C represent the poverty levels of treatment group (MHHs) and control group (non-MHHs) respectively in time t, the DD method will estimate the average impact of CBLM as shown in Table 5.1.

Table 5.1: Calculation of Impact of Labor Migration by DD Method

	Before (t_0)	After (t_1)	Net Change
	Migration		
Treatment group (MHHs) (T)	Y_{t0}^T	Y_{t1}^T	$(Y_{t1}^T - Y_{t0}^T)$
Control group (non-MHHs) (C)	Y_{t0}^C	Y_{t1}^C	$(Y_{t1}^C - Y_{t0}^C)$
Impact of Migration (DD)			$\left((Y_{t1}^T - Y_{t0}^T) - (Y_{t1}^C - Y_{t0}^C)\right)$

The impact of labor migration in DD method shown in Table 5.1 can be expressed by the following equation.

$$DD = E(Y_1^T - Y_0^T | T_1 = 1) - E(Y_1^C - Y_0^C | T_1 = 0) \quad (5.1)$$

where Y is interested outcome, $T_1 = 1$ denotes treatment group, and $T_1 = 0$ denotes control group. The first term on the right-hand side of the equation $(E(Y_1^T - Y_0^T | T_1 = 1))$ is a measure of average difference in Y of Treatment group between period '1' and period '0'. Similarly, the second term of the equation $(E(Y_1^C - Y_0^C | T_1 = 0))$ is a measure of average difference in Y of Control group between period '1' and period '0'.

With the *parallel-trend* assumption that unobserved characteristics influencing the impact of labor migration are time-invariant, the estimating equation (5.1) for the impact of labor migration in case of panel data can be written into a new equation as follows:

$$Y_{it} = \phi T_{it} + \delta X_{it} + \eta_i + \varepsilon_{it}. \quad (5.2)$$

where Y_{it} is interested outcome of household *i* in period *t*, T_{it} is a dummy of treatment group which equals '1' if household *i* falls into treatment group and '0' otherwise, X_{it} is a range of time-varying covariates, and η_i is unobserved time-invariant individual heterogeneity that may be correlated with both the dummy for treatment group and other unobserved

characteristics ε_{it}. The estimated coefficient ϕ captures the average difference in Y between Treatment and Control groups.

In order to estimate the equation (5.2), we need to differentiate the equation between the two periods in order to remove unobserved time-invariant heterogeneity that can bias the estimation result. The equation (5.2) for period '1' and period '0' can be rewritten as follows.

$$Y_{i1} = \phi T_{i1} + \delta X_{i1} + \eta_i + \varepsilon_{i1}. \quad \text{(5.3a) (for period '1')}$$

$$Y_{i0} = \phi T_{i0} + \delta X_{i0} + \eta_i + \varepsilon_{i0}. \quad \text{(5.3b) (for period '0')}$$

By differencing the equations (5.3a) and (5.3b) (as shown in the equation 5.4a), we obtain the following equation (5.4b).

$$(Y_{i1} - Y_{i0}) = \phi(T_{i1} - T_{i0}) + \delta(X_{i1} - X_{i0}) + (\eta_i - \eta_i) + (\varepsilon_{i1} - \varepsilon_{i0}) \quad (5.4a)$$

$$\Rightarrow \Delta Y_i = \phi \Delta T_i + \delta \Delta X_i + \Delta \varepsilon_i \quad (5.4b)$$

Because the source of endogeneity (the unobserved time-invariant characteristics η_i) is dropped by differencing, OLS can be applied to the equation (5.4b) to analyze the impact of labor migration (Khandker et al., 2010). The estimated coefficient ϕ of the regression equation (5.4b) equals to DD in the equation (5.1) that measures the difference in average net change in outcome between treatment and control groups. If the estimated coefficient ϕ is positive, it means that over the two periods, the treatment group is better able to improve the interested outcome than the control group and vice versa.

In short, to make an estimate using DD method, we just need to run a regression of change in Y (ΔY_i) - including ownership of durable goods, house quality, education, ownership of agricultural tools and income diversification – on change in dummy of treatment

group (ΔT_i) and change in other control variables (ΔX_i), including duration between the two periods and number of working-age members (a detailed explanation of each variable is provided in Section 5.3.3).

However, although DD method enables the removal of the effects of unobserved time-invariant characteristics, for example the ability or level of risk aversion of migrants, it cannot estimate the effects of observable time-invariant factors such as gender, education of household head and some community characteristics which do not change between the two periods because the differenced value between the two periods of the variable is zero.

5.3.2 Data

Similar to the analysis in Chapter 4, the analysis in this section also used household survey data collected in two periods – August-September 2010 and December 2010-January 2011 – from four villages in Banteay Meanchey Province. However, unlike the analysis in Chapter 4, for which the total sample was 234 HHs, the analysis in this section covered only 227 HHs, of which 147 were MHHs. Since the purpose of this analysis is to examine the effects of CBLM on households' poverty in the five selected aspects (ownership of durable goods, house quality, education, ownership of agricultural tools, and income diversification), I excluded seven MHHs whose duration of CBLM was less than one year. Migrants need some time to settle down in Thailand; hence, those who just arrived might not be able to send a large amount of remittances to their households in Cambodia to produce any significant change.

To examine the effects of CBLM, I collected data in two periods through recall method. The first period is before migration for MHHs and in year 2000 for non-MHHs, and the second period is the time of the survey (2010 and 2011). I adopted this method of data collection from Sabates-Wheeler et al. (2008), who used household surveys of three countries with both past and present household information. For non-MHHs, their past information refers to five years prior to the survey, while for MHHs their past information was at the time that migration occurred (Sabates-Wheeler et. al, 2008). The below section explains variables used in DD regressions.

5.3.3 Variables

5.3.3.1 Dependent variables

As mentioned earlier, the study analyzes the effects of CBLM on five aspects of household's poverty, which could be characterized into two categories: consumption-based poverty and production-based poverty. On the consumption side, there are three aspects: 1) ownership of durable goods, 2) house quality, and 3) education. There are two more aspects on the production side which include 1) ownership of agricultural tools, and 2) income diversification. However, since there are two dependent variables representing households' ownership of agricultural tools, I did a total of six DD regressions with six dependent variables. Below is an explanation of each dependent variable.

In the short-run, CBLM may contribute to poverty reduction by smoothing households' consumption. Thus, I ran the first regression to examine the effect of CBLM on ownership of durable goods, and the dependent variable is 'Index_dura'. I generated the value for this

variable by using a method of Principal Component Analysis (PCA). [38] Durable goods

included in the estimation are radio, TV, mobile phone, CD player, bicycle, and motorbike

(see Appendix 5.1 for the result of PCA for durable goods). As explained earlier in Section

5.3.1, the variable that informs about the effect of CBLM is the dummy for the treatment

group, which I coded as 'HHstatus'. The variable takes a value of '1' if household is a MHH

and '0' otherwise. If the estimated coefficient of 'HHstatus' is positive, it means that over the

two periods, MHHs were better able to improve their ownership of durable goods.

The second regression analyzes the effect of CBLM on another aspect of households'

consumption which is 'house quality', and the dependent variable is 'Index_house'. Similar to

the index of house quality in Chapter 4, the 'index of house quality' in this chapter is also a

sum value of four indicators of house materials: 1) type of floor, 2) type of wall, 3) type of

roof and 4) size of the house. Each indicator of house quality has four ordinal values. [39]

Overall, the sum value of the index of house quality for each household can range from '4' to

'16'. The higher value of the variable implies the better economic condition of the households.

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[38] PCA is used because analyzing the effect of migration on each consumer goods would be unnecessarily time-consuming. Through this method, all consumer goods which are possibly correlated with each other are jointly estimated to produce a set of values of uncorrelated variables called principal components. As a result of the estimation, many types of consumer goods can be represented by just one or a few principal components.

[39] Regarding roof, value '1' is for straw/bamboo/palm leaves; '2' is for other metal sheet; '3' is for tile; and '4' is for cement sheet. Similarly, the rating method for wall material is value '1' for bamboo/thatch/palm leaves, '2' for wood/plywood, '3' for other metal sheet, and '4' for a house with concrete/brick/stone wall. Floor material is rated in the same way: '1' for earth/clay, '2' for bamboo strips, '3' for wood and '4' for cement/brick/stone. Finally, size of the house is rated '1' if the house is on the ground, '2' if it is high above the ground but not yet in the form of two floors, '3' if it has two floors, and '4' if the household owns two house buildings.

Thus, CBLM contributes to reducing consumption-based poverty in terms of shelter if the estimated coefficient of 'HHstatus' is positive and vice versa.

In the long-run, CBLM may reduce or exacerbate consumption-based poverty in terms of education. Remittances from CBLM can finance education of remaining household members, but at the same time they may reduce a household's incentive to keep children in school. Thus, I examine the effect of CBLM on education of household members. The dependent variable in this third regression is 'number of household members currently enrolled in school' (HHMinSch). A common indicator used by past studies to examine the effect of labor migration on education is household expenditure on education (see, for example, Pfeiffer and Taylor, 2007), but unfortunately the data on this indicator is not available in this study. I used HHMinSch for two reasons. Firstly, it is a proper proxy for the amount of expenditure on education, and secondly the indicators can capture the countervailing effect of labor migration on education. Similar to the two previous regressions, the positive estimated coefficient of HHstatus implies that labor migration reduces consumption-based poverty in terms of education and vice versa.

In the long-run, labor migration may also contribute to reducing production-based poverty and lead to a better standard of living through households' investment in either farm or non-farm production, which can increase their future income. Hence, I also examined if CBLM has any effect on household's ownership of agricultural tools as the fourth aspect of household poverty. As a result of the PCA test, there are two components/dependent variables which can represent households' ownership of agricultural tools: Index_agri1 and Index_agri2.

The agricultural tools included in the test consist of both mechanical (hand tractor and plumbing machine) and non-mechanical tools (drought animal, pulling cart, and hand ploughing tool). The result of PCA test shows that Index_agri1 is highly correlated with non-mechanical tools, while Index_agri2 is highly correlated with mechanical tools (see Appendix 5.2 for the result of PCA test for agricultural tools). CBLM positively affects household production in terms of ownership of agricultural tools if the estimated coefficient of HHstatus is positive and vice versa.

Finally, I measured the effect of CBLM on households' income diversification as the fifth indicator of poverty. The dependent variable is 'household's total number of economic activities' (Tot_activity). A household can have one or many out of these listed economic activities: rice farming, vegetable growing, livestock farming, small business, wage labor, rental of agricultural land, rental of agricultural equipment, and other. Each economic activity is dichotomously coded as '1' if household undertakes it and '0' otherwise. Therefore, the value of this dependent variable is the total number of economic activities the household undertakes in each period. The NELM theory suggests that households use labor migration as a strategy to earn additional income to overcome credit constraints in financing new investment, namely agricultural production or economic activity. CBLM positively affects households' income diversification if the estimated coefficient of HHstatus is positive and vice versa.

5.3.3.2 Independent variables

The main independent variable of interest is the dummy for household status (HHstatus). The variable takes a value of '1' if the household is a MHH and '0' otherwise. If the estimated coefficient of this dummy variable is positive, it indicates that after CBLM MHHs had bigger improvement on the respective aspect of poverty than non-MHHs and vice versa. Therefore, CBLM contributes to poverty reduction.

To account for the effect of household characteristics on households' ability to reduce their poverty, I controlled for the effects of two household variables: 1) duration for improvement (Duration) and 2) number of working age members (15-64 years old) (WorkAgeMM). The ability to reduce poverty may be affected by the duration of observation. For example, the duration for improvement (between T_0 and $T_{1)}$ of MHHs ranges from 1 to 11 years, while it is 11 years for all non-MHHs. Therefore, non-MHHs have more time to improve their economic conditions than some MHHs. To detach the effect of time, I included the variable 'Duration' into all regressions. Number of working age members represents household members available to work to generate household income. Therefore, households with a higher number of working age members may be better able to reduce their poverty as well.

The recall method of data collection and DD method of data analyses restrict the number of control variables in the regressions. Due to the high possibility of recall error, the recall method prohibits the collection of some observable past household and community data, such as income prior to CBLM, total amount of received remittances and changes or events

occurring to the community that might influence the effects of CBLM. As explained in Section 5.3.1, it is unnecessary to control for household time-invariant characteristics, for example, education and gender of household head, in the regressions since the effects of these factors will be canceled out through DD method. Table 5.2 presents definitions of variables used in the DD regressions respectively.

Table 5.2: Definitions of Variables Used in DD regressions

Variables	Definitions
Dependent variables	
Index_consu	Value of principal component representing consumer goods
Index_house	A sum value of four indicators of house materials: 1) floor, 2) wall, 3) roof, and 4) size of the house. The sum value for each household ranges from 4 (the poorest) to 16 (the richest).
HHMinSch	Total number of household members currently enrolled in school
Index_agri1	Value of principal component (1) representing agricultural equipments
Index_agri2	Value of principal component (2) representing agricultural equipments
Tot_activity	Household's total number of economic activities
Independent variables	
HHstatus	Dummy for treatment group: '1' if migrant household
Duration	Number of years between T_0 and T_1 of each household
WorkAgeMM	Total number of working age members (15-64 years old) (persons)

Source: Author

5.3.4 Empirical findings

This section presents research findings on the effects of CBLM on households' consumption-based poverty and production-based poverty and is structured as follows. Section 5.3.4.1 describes descriptive statistics and bivariate correlations of variables used in the regression analyses, and Section 5.3.4.2 presents regression results. Section 5.3.4.3 explains why CBLM have countervailing effects on poverty reduction.

5.3.4.1 Descriptive statistics and bivariate correlations

This section examines the difference between MHHs and non-MHHs in various aspects of poverty and households characteristics. Table 5.5 below presents descriptive statistics of variables used in the regression analyses.

On average, MHHs were better able to improve their ownership of durable goods (Index_dura) than non-MHHs, but the difference was not statistically significant. MHHs owned more durable goods than non-MHHs both before and after labor CBLM, but none of the difference was statistically significant, meaning the difference can be ignored.

After labor migration, MHHs could improve their house quality to greater extent than non-MHHs. Before labor migration, MHHs' house quality on average was much lower than that of non-MHHs (7.39 vs. 8.31), and the difference was statically significant. Although non-MHHs also improved their house quality, the extent of improvement was lower than that of MHHs. The mean difference in the extent of improvement between the two groups was significant in statistical terms.

However, non-MHHs outperformed MHHs in terms of education. Although statistically insignificant, before migration MHHs had a higher number of household members currently enrolled in school (HHMinSch) than non-MHHs (0.88 vs. 0.49 person respectively). However, after labor migration, MHHs' average value of HHMinSch was lower than that of non-MHHs (1.03 vs. 1.49 persons respectively). As a result, after labor migration, MHHs could increase the number of household members currently enrolled in school on average 0.15 person, but non-MHHs could increase up to 1 person on average. The mean difference in the average extent of improvement was also statistically significant.

Although the average present values of MHHs' indexes of agricultural tools (Index_agri1 and Index_agri2 at T_1) were lower than those of non-MHHs, MHHs' ownership of agricultural tools has improved after labor migration. Both before and after labor migration, MHHs owned fewer mechanical and non-mechanical agricultural tools than non-MHHs, despite statistical insignificance. Increased ownership after labor migration could reduce the gap between MHHs and non-MHHs, but it was not large enough to eliminate their lower status in terms of ownership of agricultural tools.

Despite statistical insignificance, as for ownership of agricultural tools, non-MHHs also outperformed MHHs in terms of income diversification. Before migration, MHHs had a greater number of economic activities than non-MHHs (2.01 vs. 1.95), but this order reversed after migration (2.08 vs. 2.15).

Finally, while MHHs' average duration to make the improvement (Duration) was 4.68 years, non-MHHs had up to 11 years to produce the poverty outcomes as observed. The

increase in number of working age members (WorkAgeMM) in MHHs was also smaller than that of non-MHHs (0.72 vs. 0.80 person).

Table 5.6 presents the result of Pearson test of correlation among variables used in the regressions, except the dummy variable 'HHstatus'. The independent variable 'Duration' is highly correlated with many dependent variables including 'Index_dura', 'Index_house', 'HHMinSch', and 'Index_agri2'. Similarly, the independent variable 'WorkAgeMM' is also highly correlated with many dependent variables including 'Index_dura', 'HHMinSch', and 'Tot_activity'. Since the correlation coefficient between the variables 'Duration' and 'WorkAgeMM' is small, there is no problem of multicolinearity among independent variables used in the regressions. The following section presents the results of DD regressions on the effects of migration on households' consumption and production.

Table 5.3: Descriptive Statistics of Variable Used in DD Regressions

Variables	MHHs (N=147)		Non-MHHs (N=80)		Relative Improvement			Change in Gap		
	Mean (T_0)	Mean (T_1)	Mean (T_0)	Mean (T_1)	Change of MHHs	Change of non-MHHs	Mean Difference	Gap before	Gap now	Change in Gap[+]
	a	b	c	d	e =(b-a)	f = (d-c)	g =(e-f)	h=(a-c)	i=(b-d)	j=(i-h)
Dependent Variable										
Index_dura	-0.39	0.42	-0.41	0.36	0.82*	0.76*	0.05	0.01	0.07	0.05
Index_house	7.39	8.99	8.31	8.64	1.60*	0.33	1.27**	-0.92*	0.35	1.27
HHMinSch	0.88	1.03	0.49	1.49	0.15	1.00*	-0.85**	0.39	-0.46*	-0.85
Index_agri1	-0.03	0.01	0.02	0.02	0.03	0.00	0.03	-0.04	-0.01	0.03
Index_agri2	-0.29	0.15	-0.05	0.30	0.44*	0.35	0.09	-0.24	-0.15	0.09
Tot_activity	2.01	2.08	1.95	2.15	0.07	0.20	-0.13	0.06	-0.07	-0.13
Independent Variable										
HHstatus (#)	147	147	80	80	---	---	---	---	---	---
Duration	0.00	4.68	0.00	11.00	4.68**	11.00**	-6.32**	0.00	-6.32	6.32
WorkAgeMM	3.67	4.39	2.49	3.29	0.72*	0.80*	-0.08	1.18*	1.10*	-0.08

Note:

[+]: t-test for comparison of mean cannot be conducted due to unequal sample size between MHHs and non-MHHs.

** and *: The mean difference is significant at the 0.01 and 0.05 level respectively.

Source: Household survey conducted by the author

Table 5.4: Result of Pearson Test of Correlation among Variables Used in DD Regressions (Except Dummy Variable: HHstatus)

Variables	Index_dura	Index_house	HHMinSch	Index_agri1	Index_agri2	Tot_activity	Duration	WorkAgeMM
Index_dura	1							
Index_house	.351**	1						
HHMinSch	.187**	0.074	1					
Index_agri1	.228**	.147**	0.003	1				
Index_agri2	.305**	.121*	0.001	0	1			
Tot_activity	.231**	.104*	.119*	.263**	0.072	1		
Duration	.367**	.250**	.216**	0.011	.205**	0.069	1	
WorkAgeMM	.233**	0.073	.183**	0.081	0.083	.141**	.107*	1

Note: ** and *. Correlation is significant at the 0.01 and 0.05 level (2-tailed).
Source: Household survey conducted by the author

5.3.4.2 Regression results

Table 5.5: Regression Results on Effects of CBLM on Households' Consumption and Production

	Consumption Effects			Production Effects		
	(1)	(2)	(3)	(4)	(5)	(6)
	D.Index_dura	D.Index_house	D.HHMinSch	D.Index_agri1	D.Index_agri2	D.Tot_activity
Independent Variables						
D.Duration	0.08***	0.07	0.01	-0.01	0.01	-0.02
	(0.03)	(0.06)	(0.03)	(0.03)	(0.03)	(0.02)
D.WorkAgeMM	0.08	0.03	-0.12*	-0.01	0.05	0.03
	(0.05)	(0.13)	(0.07)	(0.06)	(0.07)	(0.04)
D.HHstatus	0.54***	1.74***	-0.78***	-0.03	0.16	-0.25*
	(0.20)	(0.49)	(0.25)	(0.23)	(0.27)	(0.14)
_cons	-0.14	-0.50	0.98***	0.13	0.20	0.38*
	(0.28)	(0.69)	(0.34)	(0.32)	(0.38)	(0.20)
N	227	227	227	227	227	227
r2	0.07	0.08	0.13	0.00	0.00	0.02
r2_a	0.06	0.06	0.11	-0.01	-0.01	0.00
p	0.00	0.00	0.00	0.96	0.78	0.33

Note: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Household survey conducted by the author

Table 5.7 presents regression results on the effects of CBLM on households' consumption and production. While the three regressions on consumption effects were significant at less than one percent, the three regressions on production effects were not strongly fitted. This means that the change in households' production could not be explained by the employed models. There are other factors that can explain the change in households' production. It is noteworthy that the small value of r^2 and *adjusted r^2 (r2_a)* could be caused by either omitted variables or small variation in independent variables. The latter reason is very plausible since the values of independent variables are the net changes between the two periods. Below are explanations of the regression results.

Although the result of t-test for equality of mean showed that the difference in improvement in ownership of durable goods between MHHs and non-MHHs was not statistically significant, the regression result of Index_dura (model 1) has shown that migration contributes to poverty reduction by improving households' ownership of durable goods because the estimated coefficient of HHstatus is positive and significant. The difference between the results of t-test and regression implies that households' improvement in ownership of durable goods is affected by CBLM and other factors. If households are MHHs, their increased value of Index_dura is expected to be 0.54 higher than that of non-MHHs. The positive and significant estimated coefficient of Duration, which is a control variable, suggests that households' ownership of durable goods increases with time. Since the longer duration implies the larger amount of accumulated income, it could be inferred from the

positive effect of Duration that households' behavior concerning ownership of durable goods is most likely affected by the amount of accumulated savings.

The estimated coefficient of HHstatus was also positive and significant in the regression model (2), which means that CBLM contributes to the reduction of poverty in terms of shelter. If households are MHHs, their increased value of Index_house is expected to be 1.74 higher than that of non-MHHs. None of the control variables were significant in explaining the change in house quality.

The negative and statistically significant estimated coefficient of HHstatus in the regression model (3) of HHMinSch implies that CBLM exacerbates poverty in terms of education. If households are MHHs, their number of household members currently enrolled in school is expected to be 0.78 persons lower than that of non-MHHs. The negative and significant estimated coefficient of WorkAgeMM implies that 1 person increase of working age member reduces 0.12 person of household member currently enrolled in school.

All the three regressions of production effect were not statistically significant, which means that the employed models are not yet appropriate for capturing the production effect. However, in the regression model (6) of income diversification (Tot_activity), the dummy variable HHstatus was negative and statistically significant at the 0.10 level. This result suggests that migration negatively affects households' income diversification measured by household's total number of economic activities. If households are MHHs, their increased number of economic activities is expected to be 0.25 lower than that of non-MHHs.

In summary, CBLM from the research site had both positive and negative effects on poverty reduction. It contributed to poverty reduction in the short-run by enabling MHHs to improve their ownership of durable goods and house quality, but it aggravated poverty in the long-run by discouraging MHHs from sending their young members to school and by reducing MHHs' ability to diversify their income.

5.3.4.3 Why did CBLM have countervailing effects on poverty reduction?

Continued from the preceding section, this section explains why CBLM in this study had countervailing effects on poverty reduction. However, to understand how CBLM affected poverty reduction, it is first necessary to understand portfolios of economic activities of both MHHs and non-MHHs and the relative importance of those activities. I will provide explanations as to why CBLM had positive effects on ownership of durable goods and house quality and then as to why it negatively affected education of young members of MHHs and income diversification.

- Relative importance of economic activities

Although I conducted two rounds of data collection, unfortunately the question on relative importance of economic activities was asked to only 170 HHs in the second round. The below information is for 163 out of these 170 HHs. I could not obtain information from the remaining seven HHs. Out of 163 HHs, 97 are MHHs.

Both MHHs and non-MHHs were involved in various economic activities at the same time (see Table 5.3 for the distribution of households by economic activities currently undertaken). Because the number of HHs undertaking CBLM as an economic activity

outnumbered those of other activities, it implies that there were some MHHs who had only CBLM as their source of income. While rice farming was the most frequently undertaken activity of non-MHHs, it was the second most frequent activity after CBLM for MHHs. Wage labor, livestock farming and vegetable growing were the three top reported activities after CBLM and rice farming by MHHs and after rice faming for non-MHHs.

Table 5.6: Distribution of HHs by Economic Activities Currently Undertaken

Activities	MHHs (N=97)	Non-MHHs (N=66)	Total (N=163)
Migration	86[*]	0	86
Rice farming	63	53	116
Vegetable growing	35	15	50
Livestock farming	40	25	65
Small business	10	8	18
Wage labor	49	27	76
Rental of agricultural equipment	2	5	7
Other activities	10	9	19

Note: [*]: the number is only 86 because some MHHs had already stopped CBLM.
Source: Household survey conducted by the author

The information in Table 5.2 only indicates the types of economic activities being carried out by the sampled households, but it does not reveal the relative importance of each activity. Respondents were further asked to rank the contribution of each activity to their household incomes. Table 5.4 presents the results of ranking by MHHs and non-MHHs. It is worth noting that percentage of HHs in each rank refers only to HHs engaged in the activity, not the total number of HHs which is 97 for MHHs and 66 for non-MHHs.

In addition to being the most common activity, CBLM was also the biggest source of income for MHHs. Out of 86 MHHs whose members were working in Thailand at the time of the survey, 62.8 percent reported that income from CBLM contributed the largest share of their households' income, and 25.6 percent said that it was the second main source of income. Only 5.8 percent of MHHs did not receive any income from CBLM, and the reasons were: 1) migrant(s) just migrated; 2) migrants were cheated in Thailand; 3) migrants were married and had a family in Thailand; 4) migrants could not be contacted; and 5) other reasons.

Information about the ranking on rice farming clearly indicated that this activity is more important for non-MHHs than MHHs. The majority of non-MHHs (92.5 percent of 53 HHs) reported that they derived their largest share of income from rice production. In contrast, less than 47 percent of MHHs (29 out of 63 HHs) considered rice farming their first or second main source of income.

Non-MHHs depend on income from vegetable growing and livestock farming more than MHHs. While approximately 26 percent of both MHHs and non-MHHs who were growing vegetables did it for household consumption and thus did not receive any income from it, 40 percent of non-MHHs and 20 percent of MHHs regarded the activity as their second main source of income. Livestock farming was just for consumption for about half of MHHs who were engaged in it (47.5 percent of 40 households), but only four percent of non-MHHs (totally 25 non-MHHs raising livestock) raised livestock for the purpose of consumption. It served as the secondary income source (either the second or the third) for 44

percent of non-MHHs. This difference suggests that non-MHHs probably raised livestock on a larger scale than MHHs.

About the same number of MHHs and non-MHHs who were engaged in small business derived their largest income from it (22 percent and 25 percent). However, 62.5 percent of non-MHHs considered this activity as the secondary source of income, while only 33.3 percent of MHHs said so.

Among those who were engaged in wage labor, around 74 percent of non-MHHs (out of 27 non-MHHs) depended on it as their first or second main source of income, whereas only about 37 percent of migrant households (out of 49 MHHs) did so. Also, non-MHHs were more able to generate income from the renting out agricultural equipment than MHHs, but it is not necessarily the case for the other activities besides those mentioned above.

In short, CBLM was the most important source of income for the majority of MHHs, while non-MHHs derived most of their income from rice farming. Besides these two activities, when both groups of households were involved in the same activity, non-MHHs seemed to be able to generate more income from it than MHHs. Therefore, income from CBLM played a very important role in the livelihood of MHHs in this study.

Table 5.7: Distribution of HHs by the Ranks of Economic Activities

Activities	Rank		MHHs (N=97) (%)	Non-MHHs (N=66) (%)
CBLM	Rank	0	5.8	
		1	62.8	
		2	25.6	
		3	4.7	
		4	1.2	
	Total		(N=86) 100	
Rice farming	Rank	1	45.2	92.5
		2	46.8	3.8
		3	8.1	3.8
	Total		(N = 63) 100	(N=53) 100
Growing of vegetables	Rank	0	25.7	26.7
		1	2.9	6.7
		2	20.0	40.0
		3	40.0	6.7
		4	11.4	20.0
	Total		(N=35) 100	(N=15) 100
Livestock	Rank	0	47.5	4.0
		1		4.0
		2	20.0	44.0
		3	10.0	44.0
		4	12.5	4.0
		5	10.0	
	Total		(N=40) 100	(N=25) 100

Activities	Rank		MHHs (N=97) (%)	Non-MHHs (N=66) (%)
Small business	Rank	1	22.2	25.0
		2	33.3	62.5
		3	22.2	
		4	22.2	12.5
	Total		(N=10) 100	(N=8) 100
Wage labor	Rank	1	16.3	33.3
		2	20.4	40.7
		3	46.9	14.8
		4	12.2	7.4
		5	4.1	3.7
	Total		(N=49) 100	(N=27) 100
Rental of agricultural tools	Rank	2		40.0
		3		40.0
		4	50.0	
		5	50.0	20.0
	Total		(N=2) 100	(N=5) 100
Other activity	Rank	1	33.3	55.6
		2	44.4	22.2
		3	22.2	22.2
	Total		(N=10) 100	(N=9) 100

Note: Rank = 0 meaning although HHs were doing the activity, they did not receive income from it. Blank cells indicated that there was no HH in that particular rank.
Source: Household survey conducted by the author

- Explanations for positive effects of CBLM on ownership of durable goods and house quality

Information from questionnaires and interviews has revealed that the major source of income that MHHs used to buy durable goods and to renovate their houses is remittances from Thailand. The analysis in this section was based on data obtained through questionnaire surveys and interviews with 147 MHHs.

Out of 147 MHHs, 70 HHs increased their ownership of at least one type of durable goods, which results in 193 items increased. While respondents could not remember the source of money used to buy 48 percent of the increased items, 40 percent of the items were bought by using remittances from Thailand or sent directly from migrants in Thailand (see Table 5.8).

Table 5.8: Sources of Money Used to Buy Durable Goods

Sources of Money	Responses	Percent
Bought but using income from other source	19	9.8%
Bought using remittances	57	29.5%
Brought from Thailand by migrant	18	9.3%
Bought but forgot the source of money	93	48.2%
Received from other source	6	3.1%
Total	193	100.0%

Note: The 193 increased items include 58 phones, 40 TVs, 28 motorbikes, 27 radios, 23 bikes, and 18 CD/VCD players.
Source: Household's survey conducted by the author

Similarly, out of 147 MHHs, 73 HHs upgraded at least one of the four aspects of their houses (roof, wall, floor, and size). These 73 HHs were further asked about the sources of

money they used to renovate the house, but only 45 respondents answered the question. As shown in Table 5.9, 26 HHs used remittances alone, 11 HHs used remittances together with income from other sources, and only eight HHs used only income from other sources. This descriptive information confirms the regression result that CBLM is a very important factor in reducing households' poverty in terms of ownership of durable goods and house quality.

Table 5.9: Sources of Money Used for House Renovation

Sources of Money	Total
Used money from sources other than remittances	8 (17.8%)
Remittances	26 (57.8%)
Used remittances and money from other sources	11 (24.4%)
Total	45 (100%)

Source: Household survey conducted by the author

The larger value of the estimated coefficient of HHstatus in the model (2) on Index_house when compared to that in the model (1) on Index_dura implies that MHHs prioritized shelter over durable goods. One plausible explanation for why MHHs prioritized house renovation is their poor house quality prior to CBLM. As shown in Table 5.5, the former house quality of MHHs on average was much lower than that of non-MHHs (7.39 vs. 8.31), and the difference was also statistically significant. On the other hand, before CBLM, the two groups of households had similar values of the Index_dura. While MHHs utilized

their income to improve their house quality to a level comparable with non-MHHs, non-MHHs may have less pressure to improve their prior house quality since it was probably already acceptable.

Since this finding is similar to those of past studies (see for example de Brauw & Rozelle, 2008; Quisumbing & McNiven, 2010) that MHHs tend to spend remittances on housing, it is important to understand why MHHs in this study also did so. Thirty six HHs who used remittances to renovate their house were further asked the reasons for doing so. The majority of them (23 HHs) provided a similar reason that their former house was too old or too small to live in, so they needed to prioritize it. For instance, one respondent stressed that if she did not repair the house first, her children might fall through when walking because the bamboo floor was badly decayed.[40]

The second most frequently stated reason was that the amount of remittances was too small to do other things, especially to buy land (10 HHs). Two respondents mentioned that the amount of remittances each time was very little, so they could only save to renovate their house. Land purchase is the next thing to do after repairing the house.[41]

In addition to the two above-mentioned reasons, there are still several other minor reasons. For example, a respondent explained that her daughter in Thailand sent the money to her and ask her to change the house materials first.[42] Another respondent, who was 67 years

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[40] Interview with MHH No. 0061 in Dong Aranh village on January 20, 2011

[41] Interviews with MHH No. 0024 in Nimith Mouy village on January 19, 2011 and No. 0083 in Thmor Sen village on January 17, 2011

[42] Interview with MHH No. 0014 in Thmor Sen village on January 18, 2011

old, chose to improve the house quality because he did not want to invest in economic activities due to his physical weakness,[43] while another respondent said that he did not know what else to do, by which he seemed to refer to economic activities.[44] Only two households said that they upgraded their houses but also did other things, such as buying or renting rice fields and buying a hand tractor.[45]

To sum up, CBLM has significantly contributed to the poverty reduction in terms of ownership of durable goods and house quality. There are several reasons influencing MHHs to spend their income including remittances on house renovation. Some reasons are related to necessity, and some others are related to constraints such as the small amount of remittances, lack of labor for doing other economic activity, and lack of business information.

- <u>Explanation for negative effects of CBLM on education</u>

Since past studies reported conflicting findings on the effect of CBLM on education (see, for example, McKenzie & Rapoport, 2006), it is necessary to understand why the effect is negative in this study. Generally, there are several important factors that may affect school enrollment such as education system, cost of education, availability of school, and opportunity cost of education. However, the enrollment system is not a problem in Cambodia as well as the research site since public basic education in Cambodia (6 years of primary education and 3 years of lower secondary education) is free of charge (Dy & Ninomiya, 2003:

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[43] Interview with MHH No. 0084 in Thmor Sen village on January 17, 2011

[44] Interview with MHH No. 0039 in Nimith Mouy village on January 19, 2011

[45] Interviews with migrant HH No. 0005 in Nimith Mouy village on January 17, 2011 and No. 0086 in Dong Aranh village on January 20, 2011

11). As long as children reach the age of 6, which is the official school age, they are eligible to be enrolled in school. Moreover, in the late 1990s, the RGC abolished the transition exam from primary level to lower secondary level. This reform has significantly reduced constraints to further education (Dy & Nimoniya, 2003: 11).

It is also possible to assume that the cost of education is not a problem for MHHs. As mentioned above, basic education is free of charge, so what households need to pay are the private costs of education such as clothing, educational materials, and daily allowance for children to go to school. Despite statistical insignificance, prior to CBLM, the number of household members currently enrolled in school in MHHs on average was higher than that in non-MHHs (0.88 vs. 0.49 persons). This difference implies that even prior to CBLM, the cost of education was not a major problem for MHHs. Thus after CBLM, MHHs should be better able to send more children to school if they want to because they have additional income sent from migrants in Thailand. However, the regression result showed that the increase in their number of household members currently enrolled in school is smaller than that of non-MHHs. There must be reasons other than the costs of education.

Although the education system and the costs of education are not constraints to enrollment and remaining in school, the availability of school may influence households' decisions on their children's education. This factor might have some explanatory power on the low number of household members currently enrolled in school in MHHs since the analysis in Chapter 4 has shown that households living far from the lower secondary school are more likely to migrate than those living close to it. DD regression could not capture the

effect of distance to the lower secondary school since the value is constant. However, based on its assumption that the effect may exist but its magnitude does not vary with time and the finding on significant effect of distance to the lower secondary school on migration decision, it is reasonable to assume that long distance to school discourages some MHHs from sending their children to the lower secondary school.

The negative effect of working age members (WorkAgeMM), which is a control variable, suggests that the opportunity cost of education might play a role in explaining the negative effect of migration in the present study. The negative and significant estimated coefficient of WorkAgeMM implies that 1 person increase of working age member reduces 0.12 person of household member currently enrolled in school. One potential explanation for this negative effect is that young household members have grown up and become potential earners, ready to enter the labor market, for example by CBLM, to generate household income. So, when households see less future value of education compared to the immediate income from CBLM or engaging teenage household members in the labor market, it might result in leaving school. The information from interviews confirms the possible trade-off between education and CBLM. Many respondents mentioned that their children stopped studying in order to migrate to Thailand.[46]

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[46] Interviews with MHHs No. 0024 in Nimith Mouy village on January 19, 2011, No. 0039 in Nimith Mouy village in January 19, 2011, No. 0041 in Soriya village on January 19, 2011, No. 0043 in Nimith Mouy village on January 19, 2011, No. 0044 in Nimith Mouy village on January 19, 2011, No. 0055 in Dong Aranh village in January 20, 2011, No. 0057 in Nimith Mouy village on January 19, 2011, and No. 0075 in Nimith Mouy village on January 17, 2011

- Explanations for negative effects of CBLM on income diversification

Descriptive information from questionnaires can give some explanation as to why MHHs had a lower increase in number of economic activities than non-MHHs. Based on the descriptive information shown in Table 5.10, it seems that MHHs abandoned a large number of activities after CBLM. Although 18.4 and 16.2 percent of MHHs and non-MHHs increased their number of economic activities respectively, 10.9 percent of MHHs and only 3.8 percent of non-MHHs had given up some of their economic activities after CBLM.

Table 5.10: Distribution of HHs by the Change in Number of Economic Activities

Change in number of economic activities		MHHs	Non-MHHs	Total
Increased	Count	27	13	40
	% within HHstatus	18.4%	16.2%	17.6%
Stayed the same	Count	104	64	168
	% within HHstatus	70.7%	80.0%	74.0%
Decreased	Count	16	3	19
	% within HHstatus	10.9%	3.8%	8.4%
Total	Count	147	80	227
	% within HHstatus	100.0%	100.0%	100.0%

Source: Household survey conducted by the author

The disaggregated information in Table 5.11 revealed that a greater percentage of non-MHHs compared to MHHs were newly engaged in livestock farming (12.50 vs. 8.20 percent), but the percentage of MHHs who just started rice farming outnumbered that of non-MHHs (5.40 vs. 3.80 percent). These differences are understandable since before CBLM, MHHs

were less able than non-MHHs to engage in rice production (93.60 vs. 96.20 percent) but were better able to engage in livestock farming (87.30 vs. 83.80). One main explanation for the lower percentage of MHHs involved in rice production is their landlessness. When asked why they were able to start a new economic activity (for example livestock farming, rice farming or small business), MHHs gave similar attribution to the remittances sent from Thailand.[47]

While the most frequently abandoned activity among non-MHHs was livestock farming (3.80 percent of non-MHHs), the most frequently given-up activity among MHHs was wage labor, followed by livestock farming and other activity (5.40, 4.10 and 4.10 percent of MHHs respectively). MHHs tended to provide similar reasons for giving up these activities, i.e., they stopped the respective activity to allow their children to go to Thailand because the return to these activities was lower than the expected wage in Thailand, or they did not have enough labor to continue the activity after their children left.[48]

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[47] Interviews with MHHs No. 0011 in Thmor Sen village on January 18, 2011, No. 0046 in Nimith Mouy village on January 19, 2011, No. 0050 in January 20, 2011, No. 0063 January 17, 2011, No. 0064 in Thnor Sen village on January 17, 2011, No. 0086 in Dong Aranh village on January 20, 2011, No. 0092 in Thmor Sen village on January 17, 2011

[48] Interviews with MHHs No. 004 in Dong Aranh village on August 23, 2010, No. 0042 in Soriya village on January 19, 2011, No. 0045 in Nimith Mouy village on January 19, 2011, No. 0047 in Thmor Sen village on January 18, 2011, No. 0052 in Thmor Sen village on January 18, 2011 , No. 0075 in Nimith Mouy village on January 17, 2011, No. 0084 in Thmor Sen village on January 17, 2011, and No. 0107 in Soriya village on January 19, 2011

Table 5.11: Distribution of HHs by Change of Each Activity

Activities		MHHs	Non-MHHs
Rice farming	Increased	5.4%	3.8%
	Stayed the same	93.9%	96.2%
	Decreased	.7%	.0%
	Total	100.0%	100.0%
Vegetable growing	Increased	3.4%	3.8%
	Stayed the same	95.2%	96.2%
	Decreased	1.4%	.0%
	Total	100.0%	100.0%
Livestock farming	Increased	8.2%	12.5%
	Stayed the same	87.8%	83.8%
	Decreased	4.1%	3.8%
	Total	100.0%	100.0%
Small business	Increased	2.7%	2.5%
	Stayed the same	97.3%	95.0%
	Decreased	.0%	2.5%
	Total	100.0%	100.0%
Wage labor	Increased	1.4%	2.5%
	Stayed the same	93.2%	95.0%
	Decreased	5.4%	2.5%
	Total	100.0%	100.0%
Rental of agri. equip.	Increased	.7%	2.5%
	Stayed the same	99.3%	97.5%
	Total	100.0%	100.0%
Other activity	Increased	1.4%	3.8%
	Stayed the same	94.6%	95.0%
	Decreased	4.1%	1.2%
	Total	100.0%	100.0%

Source: Household survey conducted by the author

In addition to the questions concerning factors that enabled them to start a new activity or pushed them to give up their old activity, respondents were further asked about activities that they wanted to do but could not do and reasons why. However, these three questions were only included in the questionnaire used for the second-round of data collection, and not all respondents answered these questions. Respondents from MHHs and non-MHHs provided

similar reasons. The first reason is financial constraint. While financial capital was the main factor enabling some MHHs to undertake a new activity, it was also a factor preventing most HHs from doing a new activity or improving their current economic activity. Based on the interviews, it seems that MHHs expected their business dream to be fulfilled by remittances from Thailand. For example, two respondents stated that they want to do small business and raise livestock but had to wait for remittances from Thailand first, and another respondent mentioned that he wanted to go to work in Thailand again in order to get capital to expand his carpenter business.[49]

The second reason given was labor shortage. A large number of respondents mentioned that they could not do any new activity by themselves, though they wanted to, because they are too old or often sick.[50] This problem was more often mentioned by MHHs than non-MHHs, which is understandable since the average age of MHH heads is older than that of Non-MHH heads (48.63 vs. 44.92 with statistical significance at less than 5 percent) and several of young working age members of MHHs had already migrated to Thailand.

The final reason may be the limited technical knowledge. A few respondents complained that they used to raise livestock but could not do it anymore because the livestock

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[49] Interviews with MHHs No. 0006 in Nimith Mouy village on January 17, 2011, No. 0022 in Nimith Mouy village on January 19, 2011, and No. 0036 in Thmor Sen village on January 18, 2011

[50] Interviews with HHs No. 0008 in Nimith Mouy village on January 17, 2011, No. 0029 in Dong Aranh village on January 20, 2011, No. 0033 in Nimith Mouy village on January 19, 2011, No. 0041 in Soriya village on January 19, 2011, No. 0043 in January 19, 2011, No. 0046 in Nimith Mouy on January 19, 2011, and No. 0056 in Nimith Mouy village on January 19, 2011

often died of diseases.[51] It seems that households just raised livestock in a natural way and did not have enough technical knowledge to take care of them well.

In short, CBLM has negative effect on income diversification when measured by household's number of economic activities. Although remittances from Thailand enabled some MHHs to start a new activity, the increased number could not compensate for the number of activities that MHHs gave up in order to go to work in Thailand. However, since the indicator used in this study measures the quantitative but not qualitative aspect of income diversification, it is impossible to conclude that CBLM negatively affects households' overall income. As described earlier, MHHs tended to give up low-return economic activity and start a higher return activity including CBLM. Therefore, a further study should investigate the effects of CBLM on qualitative aspects of income diversification by considering the economic return of each activity.

As mentioned earlier, the regression model (3) of income diversification was not statistically significant, which means that households' income diversification might be affected by other factors which were not included in the regression. The descriptive information has revealed a few important factors that may affect households' income diversification, including financial capital, availability of labor and technical knowledge. Although the regression model controlled for the effect of working age members as potential income earners, its value also included the number of migrants who were not present in

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[51] Interviews with HHs No. 0038 in Nimith Mouy village on January 19, 2011, No. 0048 in Thmor Sen village on January 20, 2011, No. 0112 in Dong Aranh village on January 20, 2011, No. 0114 in Dong Aranh village on January 20, 2011 and No. 0165 in Nimith Mouy village on January 17, 2011

Cambodia. Therefore, a future quantitative study should consider all of these possible factors in order to produce a better estimation of the effects of CBLM on income diversification.

The analysis in this section responded to the first-sub research question as to whether migration affects households' consumption and production. The analysis in the following section continues by examining factors that explain variations in the effects of migration, addressing the second sub-research question (i.e., what factors explain variation in the effects of migration?).

5.4 Factors explaining variations in the effects of CBLM

Before presenting the regression results on the determinants of effects of CBLM, I briefly describe the FD method, data and variables used in the regressions. Accordingly, this section is organized into three sub-sections. Section 5.4.1 explains how FD regression is operated and how its result should be interpreted. Section 5.4.2 describes data and variables used in the regressions. Section 5.4.3 presents research findings.

5.4.1 FD Method

The process of differencing between the two periods in FD method is similar to that of DD method. The only difference is that FD method uses only one sample group which is MHHs. Therefore, instead of examining only the current poverty level of migrant households, the DD method examines net changes in the poverty level of MHHs after CBLM. That is, given a two-period setting where $t=0$ before migration and $t=1$ after migration or now, letting Y_{t1} and Y_{t0} represent the poverty levels of MHHs in before migration (t_1) and after migration (t_0), the FD method will estimate the average impact of CBLM as shown in Table 5.2.

Table 5.12: Calculation of Impact of CBLM by FD Method

	Migration		
	Before (t_0)	After (t_1)	Impact of Migration
MHHs	Y_{t0}	Y_{t1}	$\left(Y_{t1} - Y_{t0}\right)$

Source: Author

The impact of CBLM in FD method shown in Table 5.12 can be expressed by the following equation.

$$=> \Delta Y_i = \delta \Delta X_i + \Delta \varepsilon_i \quad (5.5)$$

Because the source of endogeneity (the unobserved time-invariant characteristics η_i) is dropped by differencing, OLS can also be applied to the equation (5.5) to analyze the impact of CBLM. To make an estimate using FD method, we just need to run a regression of change in Y (ΔY_i) - including ownership of durable goods, house quality, education, ownership of agricultural tools and income diversification – on the change in independent variables (ΔX_i), including dummies for household economic condition, number of working age members, total number of migrants, total number of female migrants, total number of male migrants, and duration of migration. A detailed explanation of each variable is provided in the following section.

Similar to DD method, FD method enables the removal of the effects of unobserved time-invariant characteristics, but it cannot estimate the effects of observable time-invariant factors such as gender, education of household head, and some community characteristics that

remain the same between the two periods, because the difference between the two periods is zero. The following section explains the source of data and variables used in the regressions.

5.4.2 Data and variables

Since the objective of the analysis in this section is to identify factors that explain variation in the effects of CBLM, I used only a sample of 147 MHHs. Similar to the previous section, there are six dependent variables which represent five aspects of households' poverty: ownership of durable goods, house quality, education, ownership of agricultural tools, and income diversification. The key independent variables in FD regressions include dummies for economic condition, number of female migrants, number of male migrants, duration of migration and number of working age members, which is a control variable. Below is the explanation of each independent variable.

The influence of migrant selectivity on the effects of migration is examined through three dummy variables. They are 'dummy for non-poor household' (D_nonpoor) which equals '1' if the household is a non-poor household and '0' otherwise, 'dummy for poor household' (D_poor) which also takes a value of '1' if the household is a poor household and '0' otherwise, and 'dummy for poorest household' (D_poorest) which also equals '1' if the household is a poorest household and '0' otherwise. In the regressions, I included two dummy variables − D_poor and D_poorest − and used D_nonpoor as a reference group. Therefore, if the estimated coefficient of D_poor or D_poorest is positive, it implies that on average poor or poorest households had bigger improvements than non-poor households and vice versa. Meanwhile, if the estimated coefficient of D_poor has a bigger positive value than that of

D_poorest, it indicates that on average poor households had bigger improvements than poorest households; thus, poor households had the largest improvement among the three groups.

As the review in Section 2.7.3 revealed, several labor migration characteristics including labor migration of women or men and for a long-term or short-term may influence the effects of labor migration. Therefore, in this analysis, I included three variables of migration characteristics: number of female migrants (Fmig), number of male migrants (Mmig) and duration of migration (DuraMig). The literature often finds that the effect of migration is more visible when the duration of migration is long. Moreover, female and male migrants may produce different effects of labor migration.

In addition to the dummies for economic condition and migration variable, I controlled for the effect of working age members as well. Number of working age members represents household members available to work to generate household income. Therefore, households with more number of working age members may be better able to reduce their poverty as well. Table 5.13 presents definitions of variables used in FD regressions.

Table 5.13: Definitions of Variables Used in FD Regressions

Dependent variables

Index_consu	Value of principal component representing consumer goods
Index_house	A sum value of four indicators of house materials: 1) floor, 2) wall, 3) roof, and 4) size of the house. The sum value for each household ranges from 4 (the poorest) to 16 (the richest).
HHMinSch	Total number of household members currently enrolled in school
Index_agri1	Value of principal component (1) representing agricultural equipments
Index_agri2	Value of principal component (2) representing agricultural equipments
Tot_activity	Household's total number of economic activities

Independent variables

D_nonpoor	Dummy for non-poor household: '1' if non-poor household
D_poor	Dummy for poor household: '1' if poor household
D_poorest	Dummy for poorest household: '1' if poorest household
Fmig	Number of female migrants in the household (persons)
Mmig	Number of male migrants in the household (persons)
DuraMig	Duration of migration (years)
WorkAgeMM	Number of working age members 15-64 years old (persons)

Source: Author

5.4.3 Empirical findings

5.4.3.1 Descriptive statistics and bivariate correlations

Table 5.14 presents descriptive statistics of variables used in FD regressions. Since the analysis in this section uses the same sample of MHHs as the analysis in the previous section, the value of each dependent variable remains the same. In short, MHHs were able to reduce their poverty in the six aspects.

Similar to the value of dependent variable, the number of working age members in MHHs also increased after CBLM (WorkAgeMM) from 3.67 to 4.39 persons. When divided by their economic condition, the number of non-poor, poor and poorest MHHs was 58, 26 and 63 respectively. There is no big difference in terms of average number of male and female migrants in each household (female =1.03 and male = 1.10 persons). Finally, the average duration of migration is 4.68 years.

Table 5.15 presents the result of Pearson test of correlation among variables used in the regressions, except the dummy variables for economic condition. The estimated correlation coefficient of each variable proves that all the variables are free from the problem of multicolinearity. I also did Phi-statistics to test the correlation among the three dummy variables, and the result showed that there is also no strong correlation among the three variables. The following section presents results of FD regression analyses.

Table 5.14: Descriptive Statistics of Variables Used in FD Regressions

	T_0		T_1	
	Mean	S.D.	Mean	S.D.
Dependent variables				
Index_dura	-0.39	0.82	0.42	1.04
Index_house	7.39	1.77	8.99	2.02
HHMinSch	0.88	0.97	1.03	1.06
Index_agri1	-0.03	0.98	0.01	1.16
Index_agri2	-0.29	0.93	0.15	1.07
Tot_activity	2.01	1.08	2.08	1.10
Independent variables				
D_nonpoor (# of HHs)	58	---	58	---
D_poor (# of HHs)	26	---	26	---
D_poorest (# of HHs)	63	---	63	---
Fmig	0.00	0.00	1.03	0.89
Mmig	0.00	0.00	1.10	0.88
DuraMig	0.00	0.00	4.68	3.33
WorkAgeMM	3.67	1.57	4.39	1.83

Note: N=147 MHHs
Source: Household survey conducted by the author

Table 5.15: Result of Pearson Test of Correlation among Variables Used in the FD Regressions, Except Dummy Variables

Variables	Index_dura	Index_house	HHMinSch	Index_agri1	Index_agri2	Tot_activity	Fmig	Mmig	DuraMig	WorkAgeMM
Index_dura	1									
Index_house	.398**	1								
HHMinSch	.140*	0.01	1							
Index_agri1	.246**	.183**	-0.009	1						
Index_agri2	.264**	0.105	-0.098	-0.016	1					
Tot_activity	.234**	.138*	.116*	.194**	0.102	1				
Fmig	.363**	.344**	0.106	-0.031	0.073	0.096	1			
Mmig	.362**	.253**	0.025	0.011	.182**	0.024	.425**	1		
DuraMig	.426**	.380**	0.034	0.013	.201**	0.058	.629**	.505**	1	
WorkAgeMM	.271**	0.112	.128*	.128*	.121*	.267**	.384**	.337**	.241**	1

Note: ** and * correlation is significant at the 0.01 and 0.05 level (2-tailed) respectively.
Source: Household survey conducted by the author

5.4.3.2 Regression results

Table 5.16: Regression Results on Determinants of Effects of CBLM on Households' Consumption and Production

	Consumption Effects			Production Effects		
	(1)	(2)	(3)	(4)	(5)	(6)
	D.Index_dura	D.Index_house	D.HHMinSch	D.Index_agri1	D.Index_agri2	D.Tot_activity
D.WorkAgeMM	0.02	-0.04	-0.20**	-0.15	0.08	-0.05
	(0.09)	(0.20)	(0.09)	(0.11)	(0.14)	(0.06)
D.D_poor	-0.05	0.29	0.00	-0.26	-0.60*	0.03
	(0.22)	(0.49)	(0.22)	(0.28)	(0.34)	(0.15)
D.D_poorest	-0.06	-0.04	0.19	0.19	-0.70***	-0.11
	(0.17)	(0.38)	(0.17)	(0.21)	(0.26)	(0.11)
D.Fmig	0.16*	0.41*	0.05	0.01	-0.12	-0.06
	(0.09)	(0.21)	(0.09)	(0.12)	(0.14)	(0.06)
D.Mmig	0.08	0.38*	-0.24**	0.13	-0.01	0.07
	(0.09)	(0.20)	(0.09)	(0.12)	(0.14)	(0.06)
D.DuraMig	0.07**	0.05	0.02	0.01	0.01	0.00
	(0.03)	(0.06)	(0.03)	(0.03)	(0.04)	(0.02)
_cons	0.25	0.54	0.33	-0.08	0.86***	0.13
	(0.21)	(0.45)	(0.21)	(0.26)	(0.31)	(0.14)
N	147	147	147	147	147	147
r2	0.12	0.07	0.13	0.04	0.06	0.04
r2_a	0.08	0.03	0.09	0.00	0.02	-0.00
p	0.01	0.10	0.00	0.41	0.16	0.50

Note: Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: Household survey conducted by the author

Table 5.16 presents results of FD regressions on the determinants of effects of CBLM on households' consumption and production. Similar to the results of DD regressions, the three regressions on consumption effects were all statistically significant, but the three regressions on production effects were not statistically significant. This means that the variation in the effects of migration among MHHs could not be explained by the employed models. However, we can make some observations based on the significant variables. Again, the small value of r^2 and *adjusted r^2 (r2_a)* could be caused by either omitted variables or small variation in independent variables. Below are explanations of the regression results.

The regression result of model (1) on consumption effect revealed that only number of female migrants (Fmig) and duration of migration (DuraMig) could explain the variation in MHHs' ability to improve their ownership of durable goods. An additional person increase in the number of female migrants is associated with a 0.16 increase in the value of Index_dura. Similarly, an additional year increase in the duration of migration is expected to lead to a 0.07 increase in the value of Index_dura. The positive and significant estimated coefficients of Fmig and DuraMig thus suggest that greater number of female migrants and longer duration of migration led to the better ability of MHHs to reduce their poverty in terms of ownership of durable goods. Moreover, the bigger and positive coefficient of Fmig further indicates that the number of female migrants had stronger effect on ownership of durable goods than the duration of migration.

The regression result of model (2) showed that MHHs' varying ability to improve their house quality was positively associated with the number of female and male migrants in

the households. An additional person increase in the number of female migrants is associated with a 0.41 increase in the value of Index_house, while an additional person increase in the number of male migrants is expected to lead to a 0.38 increase in the value of Index_house. This different marginal effect implies that the number of female migrants was more influential in explaining MHHs' varying ability to improve their house quality.

On the other hand, MHHs' ability to send their household members to school was negatively affected by their increased number of working age members and the number of male migrants. As shown in the regression model (3), an additional person increase in the number of working age members (WorkAgeMM) is predicted to lead to a 0.20 person decrease in the number of household members currently enrolled in school (HHMinSch). Similarly an additional person increase in the number of male migrants (Mmig) is expected to reduce 0.24 person of the number of household members currently enrolled in school. Of these two variables, the number of male migrants (Mmig) has stronger negative effect.

Although the regression models (4 and 5) was not statistically significant, we still can make some interesting observations on determinants of households' varying ability to improve their ownership of agricultural tools based on the statistically significant coefficients. Among all the dependent variables, only the estimated coefficients of D_poor and D_poorest in the regression model (5) were negative and statistically significant.

Since Index_agri2 was highly correlated with mechanical agricultural tools, the negative coefficients of D_poor and D_poorest in the regression model (5) imply that when compared to non-poor MHHs (D_nonpoor), poor and poorest MHHs were less able to

improve their ownership of mechanical agricultural tools. The increased values of Index_agri2 of poor and poorest HHs are expected to be lower than that of non-poor for 0.60 and 0.70 respectively. The different marginal effects suggest that poorest HHs had lowest ability among the three groups of HHs to improve their ownership of mechanical agricultural tools.

5.4.3.3 Why did CBLM affect different MHHs differently?

The regression results in the preceding section showed that CBLM affected different MHHs differently. Continued from the previous section, this section provides explanations for these findings.

It is important to note that the positive effect of the duration of migration in the regression model (1) can shed some light on MHHs' spending behaviors, in particular why improving ownership of durable goods might not come up as the first priority in the early years of CBLM. MHHs most likely spent their early remittances to finance other aspects of consumption such as food, health care, education expenditure and other daily expenses. Jampaklay and Kittisuksathit (2009) revealed a positive correlation between the amount of remittances and the duration of migration; thus, the positive effect of duration of migration in this study suggests that MHHs considered improving their ownership of durable goods after they had accumulated/saved a large amount of remittances.

This study also found that the variation in MHHs' ability to improve their ownership of durable goods could be explained by MHHs' different number of female migrants (the regression model (1)). The result of this study is in line with those of the past studies. For

example, IOM (2005) found that Moldova female migrants preferred their remittances to be spent on consumption such as food, clothes, education and households' equipments. As a result, CBLM of women tends to be highly correlated with the consumption effect.

The differing relative effects of female migrants (Fmig) and male migrants (Mmig) in the regression model (2) could be explained by their different level of social obligation. Existing studies commonly observed that female migrants are more concerned about their households' well-being than male migrants (de la Briere et al., 2002; Vanwey, 2004; Pfeiffer and Taylor, 2007).

The negative effect of the number of male migrants in the regression model (3) may suggest that male migrants are less concerned than female migrants about the education of their household members, mostly their younger brothers or sisters. Despite statistical insignificance, the positive estimated coefficient of Fmig suggests that CBLM of female household members might lead to more household members being enrolled in school. Past studies (for example, de la Brière et al., 2002; Blue, 2004) explained the opposite effect of male and female migrants on education by the different attitudes between men and women towards social obligation.

One possible explanation for the varying ability of the three groups of households to improve their ownership of mechanical agricultural tools as shown in the regression model (5) is that mechanical agricultural tools including hand-tractor and plumbing machine are very expensive. It might take longer for poor and poorest than for non-poor MHHs to save enough money to buy the tools since non-poor HHs derived their income from several sources, while

poor and poorest HHs highly depended on remittances for their living. Despite the differences being statistically insignificant, the average number of current economic activities of non-poor MHHs was 2.09, while it was only 1.96 for poor MHHs and 1.92 for poorest MHHs.

5.5 Conclusions

The analyses in this chapter aimed to answer the second-main research question, "what are the effects of CBLM on poverty reduction?". In order to answer this question, I addressed two sub-research questions: 1) does CBLM affect households' consumption and production? and 2) what factors explain variations in the effects of CBLM?. Accordingly, I divided the analyses into two separate sections. The first section used DD method to analyze the effect of migration on households' consumption and production, and the sample size in this analysis was 227 HHs (147 MHHs and 80 non-MHHs). The second section used FD method to analyze factors that determine the effects of CBLM, and the sample size was only 147 MHHs.

In total, I examined the effect of CBLM on five aspects of poverty through six indicators. The consumption effect included three aspects and was measured by three indicators: ownership of durable goods (Index_dura), house quality (Index_house) and number of household members currently enrolled in school (HHMinSch). The production effect included only two aspects – ownership of agricultural tools (Index_agri1 and Index_agri2) and income diversification (Tot_activity). While Index_agri1 was highly correlated with non-mechanical agricultural tools, Index_agri2 was highly correlated with mechanical agricultural tools.

To summarize, CBLM in this study had both positive and negative effects on poverty reduction. Regarding the consumption effect, CBLM reduced physical poverty by improving

households' ownership of durable goods and house quality but exacerbated human poverty in terms of education since MHHs had fewer household members currently enrolled in school than non-MHHs. One possible explanation is that higher wage in Thailand increases the opportunity cost of education. The effect on house quality was more visible than the effect on ownership of durable goods because MHHs were more eager to improve their house condition to a level comparable with that of non-MHHs.

The production effect of CBLM was realized only on income diversification. Although the regression model was not statistically significant, the significant estimated coefficient of the dummy variable HHstatus indicates that CBLM had negative effect on income diversification measured by household's number of economic activities. One plausible reason is that MHHs often stopped at least one activity to allow their young working age members to go to work in Thailand. Although some MHHs were able to start a new activity to replace the abandoned one by using remittances, many more MHHs were not able to do so. Three main possible reasons are inadequate financial capital, labor shortage and limited technical knowledge.

Concerning the second sub-research question, the results of FD regressions revealed several significant factors that can explain the varying ability of MHHs in reducing their poverty in terms of consumption and production.

The varying ability in improving ownership of durable goods was explained by their different number of female migrants and length of duration of migration, and the effect of female migrants was stronger than the effect of duration of migration. The positive effect of

female migrants can possibly be explained by their strong emotional attachment to their family and their concern for the well-being of their left-behind household members. The positive effect of duration of migration suggests that MHHs would probably consider improving their ownership of durable goods after they had made enough savings from remittances, which takes some years to do.

While the number of male migrants could not explain the varying degree of improved ownership of durable goods among MHHs, it had significant effect on MHHs' ability to improve their house quality though the effect was smaller than that of female migrants. The differing relative effect might be a result of their different level of emotional attachment and social obligation towards their left-behind households.

Finally, only the dummies for economic condition could explain MHHs' varying ability to improve their ownership of mechanical agricultural tools. Poor and poorest MHHs were less able to buy mechanical agricultural tools than non-poor MHHs, and poorest HHs were least able to do so among the three groups. This may be because non-poor MHHs had a larger number of income sources than poor and poorest MHHs.

In conclusion, based on the research findings as presented above, CBLM had both positive and negative effects on poverty reduction, and the effects were determined by some household's factors, such as whether CBLM was undertaken by men or women and for a short or long duration. Regarding the on-going debates about the influence of migrant selectivity on the effect of CBLM, the study lends only partial support to migration pessimists since households' different economic conditions could explain only households' varying

ability to improve their ownership of mechanical agricultural tools but not consumption. Regardless of their differing levels of economic condition, MHHs had similar behaviors towards improvement of their consumption in terms of ownership of durable goods, house quality, and education of their household members.

The analyses in Chapters 4 and 5 have addressed both main research questions of the study (i.e., 1) how does poverty affect South-South CBLM? and 2) what are effects of South-South CBLM on poverty reduction?). The following chapter, which is the final chapter of the dissertation, presents a summary of the findings, implications drawn from the study for current theoretical debates and policy interventions, and suggestions for future research.

Chapter 6: Conclusions

6.1 Introduction

The possibility that ILM may result in either positive or negative impacts on origin countries has led to many attempts to examine its effects. The results from empirical studies have sparked off intense theoretical and policy debates on the developmental roles of ILM since findings on the effects of ILM reveal a mix of both positive and negative cases. One important explanation for the inconsistent findings on the effects of ILM is that research tends to study causes and effects of ILM separately (de Haas et al., 2009). The ability to migrate is conditioned by the varying degree of systemic constraints which limit the extent that ILM can promote structural changes. This explanation has led to a renewed interest in understanding the causes ILM.

A key question then is who migrates. Notwithstanding the prevalent belief that poverty causes ILM, discussions on migrant selectivity suggest that different income groups have different propensities to migrate. There seems to be theoretical and empirical regularity that the poorest are less capable of migrating due to the burdens of migration-associated costs and risks (de Haas et al., 2009). The constraints are even greater in the case of ILM. This general consensus casts doubt on the effects of ILM on poverty reduction and income redistribution since ILM is not accessible to the poorest.

However, existing studies have raised several caveats regarding the conclusion on migrant selectivity. Negative selectivity may exist in South-South CBLM, when migration

networks have reached a threshold level, and in the illegal/irregular outflow of labor migrants which is difficult to capture by national surveys or census (Durand & Massey, 1992; de Haan & Yaqub, 2009). Unfortunately, studies on selectivity in the cross-border context have concentrated mainly on education or skill, especially of Mexican migrants to the United States, rather than on economic conditions of migrants. Therefore, more work on economic selectivity of South-South cross-border labor migrants is needed in order to enrich the understanding of the effect of poverty on ILM.

Regarding the effects of ILM, literature in the field of development economics is very much concerned with whether ILM affects households' consumption or production. Generally, studies have found mixed results regarding the effects of ILM on investment including, for example, land acquisition, agricultural production, and income diversification. However, another group of studies, which examine households' remittance spending behaviors, almost consistently finds that MHHs spend remittances on consumption including food, education, health care, housing and luxury goods more than on productive investment, although the effect of ILM on education remains unclear.

Based on the general observation that remittances tend to be spent on households' consumption, especially luxury goods and housing, rather than on productive investment, migration pessimists assert that labor migration is detrimental to development. However, the NELM theory (Stark, 1991) and some scholars argue that the effects of labor migration can be assessed in both the short-term and long-term (de Haas, 2007). In the short-run, remittances help provide supplementary incomes to finance household consumption in food, health care

and education (Nyberg-Sørensen et al., 2002; de Brauw & Rozelle, 2008). In the long-run, after long-term labor migration, migrants have often accumulated assets, skills and knowledge necessary to make investment in their home areas. The question, thus, does not concern the types of effect but whether or not there are positive effects and what determines the appearance of such effects.

Another strand of literature has revealed several factors that may influence the effects of labor migration. Those factors include the gender of the migrant, destination of labor migration, duration of labor migration, and amount of remittances. However, the initial economic condition of MHHs seems to have been overlooked by past studies when examining the effects of labor migration. Due to the general observation and belief that migrants are positively selected, migration optimists argue that labor migration is good for development. However, migration pessimists counter-argue that the fact that migrants are among the better-off may increase the existing inequality within their environment and thus exacerbate poverty in the origin area or country (see, for example, de Brauw & Rozelle, 2008; de Haas et al., 2009; de Brauw, 2010). The counter-argument of migration pessimists seems to suggest that negative selectivity is good for development because the poorest can migrate and enjoy the benefits of labor migration, which results in the reduction of their poverty and inequality levels.

Hanson (2010) reviews literature on labor migration and warns that careful attention is needed when concluding that remittances increase households' spending on consumption, education, or investment because the increased expenditure may be correlated with household

wealth, not observed by the researchers, that makes migration possible. He further stresses that the developmental impacts of labor migration would be greater if research found that remittances improve the livelihoods of the poor rather than those of the non-poor households, but broad empirical evidence is not yet available to prove this effect. Therefore, whether migrants with different initial economic conditions have varying ability to reduce their poverty is a question that has yet to be answered, especially in the context of South-South CBLM.

To fill the gaps in the literature, I addressed two main research questions in this study. The first question is "how does poverty affect South-South CBLM?", and the second question is "what are the effects of South-South CBLM on poverty reduction?".

To answer the two research questions, I chose long-term Cambodia-Thailand CBLM as a case study. I used quantitative methods to analyze household survey data collected in Cambodia in two periods: August-September 2010 and December 2010-January 2011. The survey included data on 234 HHs, of which 154 are MHHs. All the 234 HHs were selected from four villages in Nimith commune, located in Ou Chrov district, Poi Pet city, Banteay Meanchey province. The questionnaires included closed and open-ended questions to collect information about households and their members regarding gender, age, education, marital status, and migration experience; decision to migrate or not to migrate; and household economic condition and economic activities prior to labor migration and at the present time.

I used different methods to answer to the first and second research questions. For the first question, I did three Probit regressions for data analyses. The first regression analyzed

the effect of poverty measured by the size of landholding on migrant selectivity; the second regression analyzed whether the effect of the size of landholding becomes stronger or weaker in the recent period of CBLM (2006 or later) when compared to the earlier period (2000-2005); and the third Probit regression aimed at examining whether the size of landholding determines the numbers of migrants sent from MHHs. To answer the second research question (what are the effects of South-South CBLM on poverty reduction?), I applied two quantitative methods: Double-Difference method (DD) and First-Difference method (FD). I used DD method to analyze the effect of CBLM on households' poverty and FD method to analyze factors that explain variations in the effects of CBLM. I examine households' poverty in terms of five aspects: 1) ownership of durable goods, 2) house quality, 3) education, 4) ownership of agricultural tools, and 5) income diversification. The following sections present main findings of the study and discussion in light of the existing literature.

6.2 Key findings

6.2.1 Effects of poverty on South-South CBLM

I examined the effects of poverty measured by the size of landholding on CBLM in three aspects. Firstly, I analyzed whether the size of landholding leads to positive, intermediate or negative selectivity of Cambodian cross-border labor migrants to Thailand. Secondly and thirdly, I analyzed whether the effect of the size of landholding as a determinant of CBLM declines in the recent outflow of migrants (2006 or later) and subsequent CBLM in each household.

The result of Probit model (1) clearly proved that CBLM from the research site was negative selectivity since on average the poorest had higher probability to migrate than the non-poor, though not necessarily more than the poor. Thai employers − a labor demand-side factor − and informal brokers − a labor supply-side factor − seem to have potential effects in making CBLM of the poor and poorest possible.

The result of Probit model (2) showed that the poor and the poorest were more likely to migrate recently (2006 or later) than the non-poor, which suggests that the effect of the small size of landholding/landlessness as a constraint to CBLM had decreased in the recent outflow of CBLM. The growing competition among informal brokers seems to be a potential factor in explaining the increasing outflow of the poor and poorest recently.

Finally, the result of Probit model (3) indicated that the poorest were less likely than the poor and the non-poor to send subsequent migrants, and among the three groups the non-poor had the highest likelihood to send subsequent migrants. This finding implies that although the effect of the small size of landholding/landlessness as a constraint to CBLM had decreased in the recent outflow of CBLM, it was not large enough to enable the poorest and the poor to send as many subsequent migrants as the non-poor. The financial costs of CBLM other than the broker fees, limited access to credit, smaller number of working age members might have explanatory power on the limited ability of the poorest and the poor to send subsequent migrants.

In addition to the size of landholding, CBLM in the present study was also affected by several other household and community factors. From most to least influential, the

determinants of the probability to migrate were the availability of the working age members (representing potential income earners of the households) (coef. = 0.24), the quality of housing (an indicator of physical poverty) (coef. = -0.22), the distance to the lower secondary school (representing the level of development of the community (coef. = 0.08), and the age of household head (coef. = 0.03).

However, the determinants of earlier (2000-2005) or recent (2006-2011) CBLM are different from the general determinants of CBLM. While child dependency ratio had no significant effect on the decision to migrate, it was the most influential factor in explaining households' decision to delay their migration until the later period (coef. = -0.47) and was followed by the distance to the nearest market (coef. = -0.26) and the older age of household head (coef. = 0.03).

Some of the determinants of subsequent CBLM are similar to the general determinants of CBLM, and some are similar to the determinants of recent CBLM since majority of the subsequent migrants left for Thailand in 2006 or later. From most to least influential, the factors included child dependency ratio (coef. = 0.47), the availability of working age members (coef. = 0.32), the quality of housing (coef. = -0.14), and the duration of migration (coef. = 0.13).

6.2.2 Effects of South-South CBLM on poverty reduction

In addition to identifying the effects of poverty measured by the size of landholding on migration, my second objective was to examine the effects of CBLM on poverty reduction, which is the second main research question. I used two quantitative analytical methods to

achieve this objective: DD and FD methods. I used DD method to answer the first sub-research question (i.e., does CBLM affect households' consumption and production?) and FD method to answer the second sub-research question (i.e., what factors explain variations in the effects of CBLM?). There were three aspects of consumption-based poverty: 1) ownership of durable goods, 2) house quality, and 3) education. At the same time, I examined the effects of CBLM on two aspects of households' production-based poverty: 1) ownership of agricultural tools and 2) income diversification.

6.2.2.1 Effects on households' consumption and production

The result of DD methods showed that CBLM had both positive and negative effects on poverty reduction. Regarding the consumption-based poverty, CBLM reduced poverty by improving households' ownership of durable goods and house quality but exacerbated poverty in terms of education since MHHs had fewer households members currently enrolled in school than non-MHHs. The effect on house quality was more visible than the effect on ownership of durable goods because MHHs were more eager to improve their house condition to a level comparable with that of non-MHHs.

Regarding the production effect, the present study found that CBLM negatively affected MHHs' income diversification measured by the number of economic activities. There are two plausible reasons for this negative effect. First, MHHs often stopped at least one activity to allow their members to go to work in Thailand, but only a few were able to start a new activity after migration by using remittances. Second, many MHHs were not able to start

a new activity after migration due to inadequate financial capital, labor shortage and limited technical knowledge.

6.2.2.2 Factors that explain variations in the effects of CBLM

Concerning the second sub-research question, the results of FD regressions revealed several significant factors that can explain the varying ability of MHHs to reduce their poverty in terms of consumption and production.

The varying ability to improve ownership of durable goods were explained by MHHs' different number of female migrants and duration of migration, and the effect of female migrants was stronger than the effect of duration of migration. The positive effect of female migrants can possibly be explained by their strong emotional attachment to their family and their concern for the well-being of their left-behind household members. The positive effect of duration of migration suggests that MHHs would probably consider improving their ownership of durable goods after they had made enough savings from remittances, which takes some years for them to do.

While the number of male migrants could not explain the varying degree of improved ownership of durable goods among MHHs, it had significant effect on MHHs' ability to improve their house quality though the effect was smaller than that of female migrants. The differing relative effect might be a result of their different level of emotional attachment and social obligation towards their left-behind households.

Households' ability to send more members to school was negatively affected by the increase in their number of working age members and number of male migrants. The negative

effect of the number of male migrants may imply that male migrants are less concerned about the education of their household members, mostly their younger brothers or sisters. Despite statistical insignificance, the positive estimated coefficient of Fmig suggests that migration of female household members might lead to more household members being enrolled in school.

Finally, only the dummies for economic condition can explain MHHs' varying ability to improve their ownership of mechanical agricultural tools. Poor and poorest MHHs were less able to buy mechanical agricultural tools than non-poor MHHs; among the three groups, poorest HHs were least able to purchase mechanical agricultural tools. Their different ability could possibly be explained by their different number of income sources.

For the investment in mechanical agricultural tools, non-poor MHHs were able to make larger improvement than their two counterparts because they had more economic activities from which they could derive income, in addition to remittances. The poorest MHHs were least able to make the investment in this respect. Due to this different ability, the present study did not find a significant effect of migration on poverty reduction in terms of ownership of agricultural tools because migrants were negatively selected. Therefore, it is possible to expect a positive effect of migration on investment in agricultural tools, especially mechanical ones, in the case of positive migrant selectivity.

6.3 Discussions

These findings on the effect of poverty measured by the size of landholding lend support to both the caveats raised by some existing studies and the general literature on migration. The findings on migrant selectivity and the declining effect of poverty constraints

over time espouse the caveats raised by existing studies (Massey, 1988; Durand & Massey, 1992, Feliciano, 2005; de Haan & Yaqub, 2009). Negative selectivity exists in South-South CBLM, when migration networks have reached a threshold level, and in the illegal/irregular outflow of migration which is difficult to capture by national surveys or census.

However, the general consensus on poverty constraints to labor migration (see, for example, Waddington & Sabates-Wheeler, 2003: 5; de Haas, 2008: 5; Vargas-Lundlus, 2008: 27) seems to be correct to some extent because the present study found that due to the small size of landholding/landlessness, which is the main source of households' income, the poorest and the poor were less able to send subsequent migrants to Thailand since sending migrants demands more financial resources. Although the non-poor were less likely to migrate than the poorest, their financial superiority enables them to send more migrants to Thailand than the poorest when they wanted to. Therefore, one important theoretical implication from this study is that the on-going debates on the effect of poverty in terms of the size of landholding on migration need to take characteristics (for example, whether it is South-South or South-North or legal or illegal) and various aspects of migration (for example, year/period of migration and number of migrants) into account before drawing firm conclusions on the effect of poverty measured by the size of landholding on migration.

The findings on the consumption effects of CBLM lend only partial support to the NELM theory (Stark, 1991) and the framework developed by de Haas (2007). The findings on positive consumption effects in terms of ownership of durable goods and house quality confirm the proposition made by the NELM theory and de Haas' framework that, in the short-

run, remittances from labor migration contribute to poverty reduction by financing households' consumption in both food and non-food aspects including housing construction and basic household amenities. Although I did not examine the effect on food consumption, it is acceptable to assume that households have already used remittances to satisfy their basic needs of food before spending them on house renovation and durable goods. Therefore, findings from the present study strongly confirm that, even in the case of South-South CBLM, in the short-term, the positive effects of migration on consumption are realized.

However, the finding on the negative effect of CBLM on education is consistent with that of McKenzie and Rapoport (2006) but opposes de Haas's framework regarding the long-term effect of labor migration. Although labor migration might positively affect education by increasing daily educational expenditure, it is just a short-term effect. When measured by the number of household members currently enrolled in school, which is the long-term effect, the present study found a negative effect of CBLM. De Haas asserts in his framework that in the third stage of labor migration (stage IIIa in the framework shown in Section 2.7), migration-associated remittances enable migrants' left-behind household members to pursue higher education (de Haas, 2007). However, the study found that due to the attractive remittances, households were less motivated to keep their teenage members in school, resulting in fewer household members currently enrolled in school in MHHs when compared to non-MHHs.

Similar to the effect on education, the present study does not support the NELM theory and de Haas's framework regarding the long-term effect of migration on income diversification. In the case of South-South CBLM where the amount of remittances is not

noticeably large, MHHs still faced financial constraints in starting a new economic activity. This problem is compounded by households' lack of technical knowledge and labor, whose importance is not stressed in the NELM theory and de Haas's framework.

This study lends full support to past studies (for example, de la Brière et al., 2002; Blue, 2004) regarding the differential effect of female and male migrants. Due to the different attitudes of men and women towards social obligation, education in terms of number of young household members currently enrolled in school is negatively affected by CBLM of men and positively affected by CBLM of women.

The finding on the effect of initial economic condition or migrant selectivity lends only partial support to both migration optimists and pessimists. Migration optimists claim that migration is good for development and poverty reduction since migrants are positively selected from their community. It can be inferred from this statement that the poor and poorest MHHs are not able to reduce their poverty as much as the non-poor MHHs since they receive smaller benefits from migration. On the other hand, migration pessimists counter-argue that the fact that migrant are positively selected exacerbates poverty and inequality, for the poor and poorest do not have access to migration and thus are not able to enjoy the benefits of migration like the non-poor. Therefore, the effect of migration on poverty reduction is more visible if the migrants are from the poor and poorest groups. However, the present study found that the effects of migration on poverty reduction, except on the ownership of mechanical agricultural tools, were not affected by migrant selectivity.

Regardless of their initial economic condition, MHHs in the three groups were able to reduce their poverty to a similar extent.

In conclusion, the dissertation adds some new evidences to the current debates on poverty-migration nexus as follows.

First, it proves that negative selectivity does exist in the case of South-South CBLM where there are porous border and extensive migration networks. However, although the effect of poverty measured by the size of land as a constraint to migration has declined over time, it is not large enough to enable the poor and poorest to send as many migrants as the non-poor.

Second, although CBLM shows negative selectivity, its positive short-term effects on poverty reduction are realized. Remittances from CBLM contribute to the improvement in house quality and ownership of durable goods. However, in the long-term, CBLM negatively affects poverty in terms of education and income diversification, which contradicts NELM theory and de Haas's framework.

Third, the gender of the migrant and duration of migration are significant factors in explaining MHHs' varying ability to reduce their poverty. These findings are not surprising since existing studies have also reported different effects of labor migration by these two factors.

Finally and most importantly, migrant selectivity does not influence the effects of CBLM on consumption but does influence the effect on agricultural intensification in terms of investment in mechanical agricultural tools. Therefore, migrant selectivity does not matter for

the short-term goal of poverty reduction, but it does for the long-term goal of poverty reduction.

6.4 Policy implications

Based on the findings, I outline some policy implications as follows.

First, the study found that migration had positive effect on poverty reduction by improving households' ability to consume; it thus can serve as a short-term mechanism to reduce poverty in Cambodia. However, the problem is that the majority of Cambodian international migrants make their move illegally. Therefore, the policy concern is how to prevent illegal/irregular migration. The present study found that cross-border labor migration to Thailand was pushed by poverty and the majority of migrants are the poorest and poor. Thus, the policy to reduce illegal border crossing should aim at reducing the cost of legal migration to a level comparable with or just slightly above the cost of the illegal channel, so that legal migration is affordable for the poorest and the poor. This policy should be prioritized as it is likely to have an immediate effect on curbing of illegal migration.

Second, in addition to the cost reduction policy, other long-term policies to reduce households' pressure/necessity to migrate should aim at improving rural housing, practice of family planning, access to education, and development of rural markets. The RGC considers international labor migration as one mechanism for economic development and poverty reduction. However, for migration to fulfill its desired role, households should migrate out of choice rather than necessity.

Finally, the long-term effects of migration on education and income diversification are negative, so the government should work on some policies to mitigate these negative effects. The policies may include those that link education to employment to improve future value of education, those on rural credit schemes, and those that promote technical knowledge necessary for households to start a new economic activity. The rural credit schemes which target particularly the poorest and the poor are very relevant in reducing unequal capability among MHHs with different economic conditions to invest in mechanical agricultural tools. The poorest and the poor need financial assistance in order to be able to invest in mechanical agricultural tools since the number of economic activities from which they can derive income is fewer than that of non-poor households.

6.5 Suggestions for future research

Based on the findings and some limitations, I outline three suggestions for future research as follows.

First, CBLM had negative effect on income diversification when measured by the household's number of economic activities. However, since the indicator used in this study measures the quantitative but not qualitative aspect of income diversification, it is impossible to conclude that CBLM negatively affects household's overall income. The descriptive information revealed that MHHs tended to give up a low-return economic activity and started a higher return activity including CBLM. Therefore, a further study is needed on the effect of CBLM on qualitative aspects of income diversification by considering the economic return of each activity.

Second, future research should examine other aspects of poverty when examining the effects of labor migration on poverty reduction. The current study focused only on three aspects of consumption-based poverty (ownership of durable goods, house quality, and education) and two aspects of production-based poverty (ownership of mechanical agricultural tools and income diversification). However, poverty is multi-faceted and can be measured at different levels. For example, it is equally interesting to examine how labor migration affects health status of MHHs or poverty at the community or regional level in the long-run.

Finally, future research should focus on various forms of labor migration when examining the effects of poverty on migration and vice versa. This study focused only on South-South CBLM. Regarding the causes of labor migration, it is unknown whether the effects of poverty in this South-South cross-border context could be generalized to labor migration in other contexts, for example legal ILM from Cambodia to other destinations or internal labor migration. Similarly, it is unknown whether the effects of migrant selectivity as well as other migration characteristics in the context of South-South CBLM are similar to those in the context of legal ILM or internal labor migration.

References

Abella, M. (2008). Challenges to governance of labour migration in Asia Pacific.

Acharya, S. (2003). *Labor migration in the transitional economies of South-East Asia.* Bangkok: Economic and Social Commission for Asia and the Pacific.

Adams, R. H. (1991). The effects of international remittances on poverty, inequality and development in rural Egypt. *Research Report 86* . Washington, D.C.: International Food Policy Research Institute.

___. (2005). Remittances, poverty and investment in Guatemala. In M. Schiff, & C. Ozden (Eds.), *International migration, remittances, and the brain drain* (pp. 53-80). Washington, D.C.: World Bank/Palgrave Macmillan.

Agbola, F. W., & Acupan, A. B. (2010). An empirical analysis of international labour migration in the Philippines. *Economic Systems , 34* (1), 386-396.

Akm, U. A. (2009). Theoretical rhetoric about migration networks: A case of a journey of Bangladeshi workers to Malaysia. *International Migration , 1* (1), 1-26.

Ananta, A., & Arifin, E. N. (Eds.). (2004). *International migration in Southeast Asia.* Singapore: Institute of Southeast Asian Studies.

Arrehag, L., Sjöberg, Ö., & Sjöblom, M. (2006). Post-communist cross-border migration in South-Eastern Albania: Who leaves? Who stays behind? *Journal of Ethnic and Migration Studies , 32* (3), 377-402.

Asian Development Bank: ADB. (2001). *Participatory poverty assessment: Cambodia.* Manila: ADB.

___. (2009). *Cambodia key indicators 2009.* ADB.

Asian Migration Centre. (2005). *Asian migration yearbook 2005.* Asian Migration Centre.

Azcona, G. (2009). Migration in participatory poverty assessments: A review . *Munich Personal RePEc Archive (MPRA) Paper No. 19239* .

Better Factories Cambodia: BFC. (2009, August). Cambodian garment industry: Challenges and opportunities. *Fact Sheet* . BFC.

___. (n.d.). *News on closure of garment factories in Cambodia*. Retrieved October 6, 2009, from Better Factories Cambodia: http://www.betterfactories.org/ content/documents/media/2009-10-05%20CAM.gif

Bhandari, P. (2004). Relative deprivation and migration in an agricultural setting of Nepal. *Population and Environment , 25* (5), 475-499.

Blue, S. A. (2004). State policy, economic crisis, gender and family ties: Determinants of family remittances to Cuba. *Economic Geography , 80* (1), 63-82.

Borjas, G. J. (1988). Immigration and self-selection. *NBER Working Paper No. 2566* . National Bureau of Economic Research (NBER).

Boyle, P. (2009). Migration. In R. Kitchin, & N. Thrift (Eds.), *International encyclopedia of human geography* (pp. 96-107). Elsevier.

Bray, D. (1984). Economic development: The middle class and international migration in the Dominican Republic. *International Migration Review , 18* (2), 217-236.

Cambodian Development Research Institute: CDRI. (2007). *Youth migration and urbanization in Cambodia.* Phnom Penh: CDRI.

___. (2009). Labor migration in the GMS: Synthesis of the case studies in Cambodia, Laos, Thailand and Vietnam. *Working Paper Series No. 45* . Phnom Penh: CDRI.

Carswell, G. (1997). Agricultural intensification and rural sustainable livelihoods: A 'think piece'. *IDS Working Paper 64* .

Chalamwong, Y. (2008). Demographic change and international labor mobility in Thailand.

Chan, S. (2009). *Review of labor migration management, policies and legal framework in Cambodia.* Bangkok: ILO/Japan Project on Managing Cross-Border Movement of Labour in Southeast Asia.

Chan, S., & So, S. (1999). Cambodian labour migration to Thailand: A preliminary assessment. *Working Paper 11* . Cambodia Development Resource Institute (CDRI).

Chantavanich, S. (2008). *The Mekong challenge: an honest broker - improving cross-border recruitment practices for the benefit of government workers and employers.* Bangkok: Mekong Sub-regional Project to Combat Trafficking in Children and Women, International Programme on the Elimination of Child Labour, ILO.

Chea, S., & Tsuji, M. (2005). The effect of off-farm income from industry on rice production: A case study of Cheung Kaeub Commune, Kandal Steung District, Cambodia. *J. Fac. Agr., Kyushu Univ. , 50* (2), 715-726.

Chinnavaso, K. (1993). The decision to migrate: A comparative study of rural migrants from the North and the Northeast regions in Thailand. *Doctoral Dissertation* . University of Notre Dame.

Chiquiar, D., & Hanson, G. H. (2005). International migration, self-selection, and the distribution of wages: Evidence from Mexico and the United States. *Journal of Political Economy , 113* (2), 239-281.

Chiswick, B. R. (1999). Are immigrants favorably self-selected? *The American Economic Review , 89* (2), 181-185.

Clark, X., Hatton, T. J., & Williamson, J. G. (2003). What explains cross-border migration in Latin America? .

Cohen, R. (1996). *Theories of migration.* Cheltenham: Edward Elgar.

Conway, D., & Cohen, J. H. (1998). Consequences of Migration and Remittances for Mexican Transnational Communities. *Economic Geography , 74* (1), 26-44.

Dahlberg, E. (2005). Insights into migration and spending patterns based on a small-scale study of garment workers in Phnom Penh. *EIJS Working PaperSeries 220* . The European Institute of Japanese Studies (EIJS).

Damon, A. L. (2010). Agricultural land use and asset accumulation in migrant households: The case of El Salvador. *Journal of Development Studies , 46* (1), 162-189.

Davis, B., Stecklov, G., & Winters, P. (2002). Domestic and international migration from rural Mexico: Disaggregating the effects of network structure and composition. *Population Studies , 56* (3), 291-309.

de Brauw, A. (2010). Seasonal migration and agricultural production in Vietnam. *Journal of Development Studies , 46* (1), 114-139.

de Brauw, A., & Rozelle, S. (2008). Migration and household investment in rural China. *China Economic Review , 19* (1), 320-335.

de Haan, A. (1999). Livelihoods and poverty: The role of migration - a critical review of the migration literature. *Journal of Development Studies , 36* (2), 1-47.

de Haan, A., & Yaqub, S. (2009). Migration and poverty: Linkages, knowledge gaps and policy implications. *Social Policy and Development Programme Paper Number 40* . United Nations Research Institute for Social Development .

de Haas, H. (2001). *Migration and agricultural transformations in the oases of Morocco and Tunisia.* Utrecht: KNAg.

___. (2005). International migration, remittances and development: Myths and fact. *Global Migration Perspectives No. 30* . Geneva, Swizerland: Global Commission on International Migration.

___. (2006). Migration, remittances and regional development in southern Morocco. *Geoforum , 37* (1), 565-580.

___. (2007). Remittances, migration and social development: A conceptual review of the literature . *Social Policy and Development Programme Paper Number 34* . United Nations Research Institute for Social Development .

___. (2008). Migration and development: A theoretical perspective. *Working Paper 9* . International Migration Institute.

de Hass, H., Bakewell, O., Castles, S., Jonsson, G., & Vezzoli, S. (2009). Mobility and human development. *Woring Paper 14* . International Migration Institute.

de la Briere, B., Sadoulet, E., de Janvry, A., & Lambert, S. (2002). The roles of destination, gender and household composition in explaining remittances: An analysis for the Dominican Sierra. *Journal of Development Economics , 68* (2), 309-328.

Development Analysis Network: DAN. (2005). *The cross border economies of Cambodia, Laos, Thailand and Vietnam.* DAN.

Durand, J., & Massey, D. S. (1992). Mexican migration to the United States: A critical review. *Latin American Research Review , 27* (2), 3-42.

Dy, S. S., & Ninomiya, A. (2003). Basic education in Cambodia: The impact of UNESCO on policies in the 1990s. *Education Policy Analysis Archives , 11* (48), 1-20.

Economy of Thailand. (n.d.). Retrieved February 2012, 07, from Wikipedia: http://en.wikipedia.org/wiki/Economy_of_Thailand

Edwards, A. C., & Ureta, M. (2003). Internationa migration, remittances, and schooling: Evidence from El Salvador. *Journal of Development Economics , 72* (1), 429-461.

Ellis, F. (2000). *Rural livelihoods and diversity in developing countries.* New York: Oxford University Press.

Faist, T. (2004). *The volume and dynamics of international migration and transnational social spaces.* New York: Oxford University Press.

Fan, C. (2009). Migrant workers. In R. Kitchin, & N. Thrift (Eds.), *International encyclopedia of human geography* (Vol. 7, pp. 89-95). Elsevier.

Feliciano, C. (2005). Educational selectivity in U.S. immigration: How do immigrants compare to those left behind? *Demography , 42* (1), 131-152.

Germenji, E., & Swinnen, J. F. (2005). Human capital, market imperfections, poverty, and migration: Evidence from rural Albania. Belgium: Katholieke Universiteit Leuven.

Godfrey, M., So, S., Tep, S., Pon, D., Katz, C., Archaya, S., et al. (2001). A study of the Cambodian labour market: Reference to poverty reduction, growth and adjustment to crisis. *Working Paper 18* . Phnom Penh: Cambodia Development Resource Institute.

Görlich, D., & Trebesch, C. (2008). Seasonal migration and networks - Evidence on Moldova's Labour Exodous. *Review of World Economics , 144* (1), 107-133.

Gray, C. L. (2009). Rural out-migration and smallholder agriculture in the southern Ecuadorian Andes. *Popul Environ , 30*, 193-217.

Guzmán, J. C., R.Morrison, A., & Sjöblom, M. (Eds.). (2008). *The international migration of women.* Washington D.C.: The International Bank for Reconstruction and Development/The World Bank.

Hagen-Zanker, J., Siegel, M., & de Neubourg, C. (2009). String attached: The impedements to migration in Albania and Moldova. *Southeast European and Black Sea Studies , 9* (4), 459-479.

Haggblade, S., Hazell, P. B., & Reardon, T. (Eds.). (2007). *Transforming the rural nonfarm economy.* Baltimore : The Johns Hopkins University Press.

Hanson, G. H. (2010). International migration and the developing world. In D. Rodrik, & M. R. Rosenzweig (Eds.), *Handbook of Development Economics* (Vol. 5, pp. 4363-4408). Amsterdam, The Netherlands: Elsevier.

Harris, J. R., & Todaro, M. P. (1970). Migration, unemployment and development: A two-sector analysis. *American Economic Review* , 126-142.

Haughton, J., & Khandker, S. R. (2009). *Handbook on poverty and inequality.* Washington, DC: The World Bank.

Heng, M. (2009). What affects firms' compliance with labor standards? Evidence from garment factories in Cambodia. *Unpublished Master's Thesis* . Nagoya University.

Hugo, G., & Stahl, C. (2004). Labor export strategies in Asia. In D. S. Massey, & J. E. Taylor (Eds.), *International migration prospects and policies in a global market* (pp. 174-200). New York: Oxford University Press.

Huguet, J. W., & Punpuing, S. (2005). *International migration in Thailand.* Bangkok: International Organization for Migration, Regional Office Bangkok, Thailand.

Hull, J. (2007). Migration, remittances, and monetization of farm labor in subsistence sending areas. *Asian and Pacific Migration Journal , 16*, 451-458.

International Food Policy Research Institute. (2003). *Income diversification and poverty in the northern uplands of Vietnam.* Hanoi: Tran Phu Co Ltd.

International Labour Organization: ILO. (2005). *The Mekong challenge, destination Thailand: A cross-border labour migration survey in Banteay Meanchey Province, Cambodia.* Bangkok: ILO.

___. (2007). Rights, labor migration and development: The ILO approach. *Background note for the Global Forum on Migration and Development* .

International Organization for Migration: IOM. (2005). *Migration, development and poverty reducation in Asia.* Geneva: IOM.

Jampaklay, A., & Kittisuksathit, S. (2009). *Migrant workers' remittances: Cambodia, Lao PDR and Myanmar.* Institute for Population and Social Research, Mahidol University. ILO.

Jokisch, B. D. (2002). Migration and agricultural change: The case of smallhoder Agriculture in in Highland Ecuador. *Human Ecology , 30* (4), 523-550.

Kanbur, R., & Squire, L. (2001). The evolution of thinking about poverty: Exploring the interactions. In G. Meier, & L. Stiglitz (Eds.), *Frontiers of development economics: The future in perspective.* New York: Oxford Unversity Press fro the World Bank.

Kaur, A. (2007). On the move: International migration in Southeast Asia since the 1980s. *Journal Compilation* . Blackwell Publishing Ltd. .

Key migration terms. (n.d.). Retrieved 2012, from International Organization for Migration: http://www.iom.int/jahia/Jahia/about-migration/key-migration-terms/lang/en

Khandker, S. R., Koolwal, G. B., & Samad, H. A. (2010). *Handbook on impact evaluation: Quantitative methods and practices* . Washington, D.C.: The World Bank.

Laurian, L., & Bilsborrow, R. (2000). Why do people migrate? A contextual model of migration in Ecuador. *Paper presented at the annual meeting of the population association of America March 23-25* . Los Angeles.

Lee, C. C. (n.d.). Female labour migration in Cambodia.

Malek, M. A., & Usami, K. (2010). Do non-farm incomes really matter for poverty among small households in rural Bangladesh? A case of advanced villages. *Journal of Development and Agricultural Economics , 2* (7), 250-267.

Maltoni, B. (2007). Migration in Cambodia: Internal vs. external flows. *8th ARPMN Conference on "Migration, Development and Poverty Reducation", 25-29 May 2007.* Fuzhou.

___. (2010). *Analyzing the impact of remittances from Cambodian migrant workers in Thailand on local communities in Cambodia.* Phnom Penh: International Organization for Migration.

Martin, P. (2007). *The economic contribution of migrant workers to Thailand: Towards policy development.* ILO Subregional Office for East Asia, ILO/Japan Managing Cross-border Movement of Labour in Southeast Asia. Bangkok: ILO.

Massey, D. S. (1988). Economic Development and International Migration in Comparative Perspective. *Population and Development Review , 14* (3), 383-413.

Massey, D. S., & Espinosa, K. E. (1997). What's drive Mexico-U.S. migration? A theoretical, empirical, and policy analysis. *The American Journal of Sociology , 102*, 939-999.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, J. E. (1993). Theories of international migration: A review and appraisal. *Population and Development Review , 19* (3), 431-466.

Massey, D. S., Williams, N., Axinn, W. G., & Ghimire, D. J. (2009). Community services and out-migration. *International Migration , 48* (3), 1-41.

McCarthy, N., Carletto, G., Davis, B., & Maltsoglou, I. (2006). Assessing the impact of massive out-migration on agriculture. *ESA Working Paper No. 06-14 .* The Food and Agriculture Organization, Agricultural and Development Economics Division.

McKenzie, D., & Rapoport, H. (2007). Network effects and the dynamics of migration and inequality: Theory and evidence from Mexico. *Journal of Development Economics , 84* (1), 1-24.

___. (2011). Can migration reduce educational attainment? Evidence from Mexico. *J Popul Econ , 24*, 1331-1358.

McKenzie, D., & Sasin, M. J. (2007). Migration, remittances, poverty, and human capital: Conceptual and empirical challenges. *Policy Research Working Paper Series 4272 .* The World Bank.

Mendola, M. (2008). Migration and technological change in rural households: Complements or substitutes? *Journal of Development Economics , 85*, 150-175.

Moraga, J. F.-H. (2011). New evidence on emigrant selection. *The Review of Economics and Statistics , 93* (1), 72-96.

Morris, E. (2007). *Promoting employment in Cambodia: Analysis and options.* ILO Subregional Office for East Asia. Bangkok: International Labour Office .

National Committee for Population and Development (NCPD). (2008, December 10). Gender and a right-based approach to labour migration in Cambodia. Phnom penh, Cambodia.

National Institute of Statistics (NIS). (2008). Statistical Yearbook of Cambodia 2008. Phnom Penh, Cambodia: National Institute of Statistics, Ministry of Planning.

___. (2009). *General population census 2008.* Phnom Penh: NIS.

Naudé, W. (2010). The determinants of migration from Sub-Saharan African countries. *Journal of African Economies , 19* (3), 330-356.

Nwajiuba, C. (2005). *International migration and livelihoods in Southeast Nigeria.* Geneva: Global Commission on International Migration.

Nyberg-Sørensen, N., Hear, N. V., & Engberg-Pedersen, P. (2002). The migration-development nexus: Evidence and policy options. *International Migration , 40* (5), 49-73.

Osaki, K. (1999). Economic interactions of migrants and their households of origin: Are women more reliable supporters? *Asian and Pacific Migration Journal , 8* (4), 447-471.

Paitoonpong, S. (2011). Different stream, different needs, and impact: Managing international labor migration in ASEAN: Thailand (Immigration). *Discussion Paper Series No. 2011-28 .* Philippine Institute for Development Studies.

Pfeiffer, L., & Taylor, J. E. (2007). Gender and the Impacts of International Migration: Evidence from rural Mexico.

Pholphirun, P., Pungpond, R., & Jongkon, K. (2010). *Do immigrants improve Thailand's competitiveness?* The World Bank.

Portes, A., & DeWind, J. (Eds.). (2008). *Rethinking migration: New theoretical and empirical perspecitves.* New York: Berghahn Books.

Quinn, M. A. (2001). Haves and have nots, relative deprivation and Mexican migration 1987-1997. Chapel Hill.

Quisumbing, A., & McNiven, S. (2010). Moving forward, looking back: The impact of migration and remittances on assets, consumption, and credit constraints in the rural Philippines. *Journal of Development Studies , 46* (1), 91-113.

Rapoport, H., & Docquier, F. (2005). The economics of migrants' remittances. Israel: Department of Economics, Bar-Ilan University.

Regmi, G., & Tisdell, C. (2002). Remitting behaviour of Nepalese rural-to-urban migrants: Implications for theory and policy. *Journal of Development Studies , 38* (3), 76-94.

Royal Government of Cambodia: RGC. (2006). *National strategic development plan 2006-2010.* Phnom Penh: Ministry of Planning, Royal Government of Cambodia.

___. (2009). *National strategic development plan update 2009-2003.* Phnom Penh: RGC.

___. (2010). *Labor migration policies of Cambodia .* Phnom Penh: RGC.

___. (2011). Notice on temporary banning of recruiting, training and sending of Cambodian workers to work as housemaids in Malaysia.

Rotte, R., & Vogler, M. (1998). Determinants of international migration: Empirical evidence for migration from developing countries to Germany. *IZA Discussion Paper No. 12 .* IZA.

Rozelle, S., Taylor, J. E., & deBrauw, A. (1999). Migration, Remittances, and Agricultural Productivity in China. *The American Economic Reviw , 89* (2), 287-291.

Sabates-Wheeler, R., Sabates, R., & Castaldo, A. (2008). Tackling poverty-migration linkages: Evidence from Ghana and Egypt. *Soc Indic Res , 87* (1), 307-328.

Sen, A. (1987). *Commodities and capabilities.* New Delhi: Oxford University Press.

Skeldon, R. (2002). Migration and poverty. *Asia-Pacific Population Journal , 17* (4), 67-82.

Stark, O. (1991). *The migration of labor.* Massachusetts, USA: Basil Blackwell, Inc. .

Tacoli, C. (1999). International migration and the restructuring of gender asymmetries: Continuity and change among Filipino labor migrants in Rome. *International Migration Review , 33* (3), 658-682.

Takahashi, M. (2005). Marriage, gender and labor: Female-headed households in a rural Cambodian village. *Southeast Asian Studies , 42* (4), 442-463.

Taylor, J. E., Arango, J., Hugo, G., Kouaouci, A., Massey, D. S., & Pellegrino, A. (1996). International migration and community development. *Population Index , 62* (3), 397-418.

The commune database. (n.d.). Retrieved August 2011, 11, from The National Committee for Sub-National Democrtic Development: http://www.ncdd.gov.kh/resources/database/cdb

Thieme, S., & Wyss, S. (2005). Migration patterns and remittance transfer in Nepal: A case study of Sainik Basti in Western Nepal. *International Migration , 43* (5), 59-98.

Tong, K., Hem, S., & Santos, P. (2011). What Limits Agricultural Intensification in Cambodia? The Role of Emigration, Agricultural Extension Services and Credit Constraints. *Working Paper Series No. 56* . CDRI.

Trager, L. (Ed.). (2005). *Migration and economy: Global and local dynamics.* New York: Rowman & Littlefield Publishers, Inc.

Tunali, I. (2000). Rationality of migration. *International Economic Review , 41* (4).

United Nations Development Programme: UNDP. (1990). *Concept of measurement of human development.* UNDP.

___. (1997). *Human development report 1997: Human development to eradicate poverty.* UNDP.

___. (2009). *Human development report 2009: Overcoming barriers: Human mobility and development.* UNDP.

USAID. (2006). *Jobs for the 21st century:Cambodia assessment.* USAID Cambodia.

Vanwey, L. K. (2004). Altruistic and contractual remittances between male and female migrants and households in rural Thailand. *Demography , 41* (4), 739-756.

___. (2005). Land ownership as a determinant of international and internal migration in Mexico and internal migration in Thailand. *IMR , 39* (1), 141-172.

Vargas-Lundlus, R., Lanly, G., Villarreal, M., & Osorio, M. (2008). *International migration remittances and rural development* . International Fund for Agricultural Development (IFAD).

Waddington, H., & Satabes-Wheeler, R. (2003). How does poverty affect migration choice? A review of literature . *Working Paper T3* . Development Research Centre on Migration, Globalization and Poverty.

Winters, P., & de Janvry, A. &. (2001). Family and community networks in Mexico-U.S. migration. *Journal of Human Resources , 36* (1), 159-184.

Wooldridge, J. M. (2009). *Introductory econometrics.* USA: South-Western Cengage Learning.

World Bank. (2000). *World Development Report 2000/2001: Attacking poverty.* Oxford: Oxford University Press.

___. (2006). *Labor migration in the greater Mekong sub-region - synthesis report: Phase I.* http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSite

PK=523679&menuPK=64187510&searchMenuPK=64187283&theSitePK=523679&entityID=000020439_20070910112356&searchMenuPK=64187283&theSitePK=523679.

___. (2009a). *Poverty profile and trends in Cambodia, 2007.* Poverty Reduction and Economic Management Sector Unit East Asia and Pacific Region: World Bank.

___. (2009b). *World development report 2009: Reshaping economic geography.* World Bank.

___. (2011). Migration and remittance factbook .

Wouterse, F., & Taylor, J. E. (2008). Migration and income diversification: Evidence from Burkina Faso. *World Development , 36* (4), 625-640.

Yagura, K. (2005). Why illness causes more serious economic damage than crop failure in Cambodia. *Development and Change , 36* (4), 759-783.

Yang, D. (2005). International migration, human capital, and entrepreneurship: Evidence from Philippine migrants' exchange rate shocks. *Policy Research Working Paper Series 3578* . The World Bank.

Appendices

Appendix 1.1: Workers' Remittances and Compensation of Employees as % of GDP

Region	1990	1992	1994	1996	1998	2000	2001	2002	2003	2004	2005
East Asia and Pacific	0.50	0.56	0.66	0.71	0.93	1.00	1.10	1.47	1.56	1.48	1.50
Europe and Central Asia	-	-	1.17	1.02	1.45	1.42	1.31	1.27	1.24	1.28	1.44
Latin America and Caribbean	0.61	0.70	0.73	0.79	0.84	1.04	1.29	1.67	1.99	2.06	1.98
Middle East and North Africa	-	8.31	5.57	3.69	3.68	3.07	3.40	3.76	4.35	4.31	4.13
South Asia	1.41	1.76	2.24	2.42	2.47	2.85	3.10	3.72	4.09	3.57	3.53
Sub-Saharan Africa	0.72	0.76	0.94	1.04	1.47	1.49	1.55	1.67	1.49	1.60	1.57

Source: Hanson (2010: 4391)

Appendix 3.1: Number of Thai Workers Deployed Overseas and Amount of Remittances

Received, 1990-2007

Year	Workers deployed (1,000)	Remittances (millions of US dollars)
1990	63.2	973
1995	202.3	1,695
1996	185.4	1,806
1997	183.7	1,658
1998	175.4	1,424
1999	159.6	1,460
2000	177.7	1,500
2001	165.0	1,117
2002	160.8	1,481
2003	147.8	1,304
2004	148.6	1,509
2006	---	1,240*
2007	161.9*	---

Note: *: based on Chalamwong (2008)

Source: Huguet & Punpuing (2005); Chalamwong (2008)

Appendix 3.2: Migrant Workers in Thailand by Each Category, December 2010


```
                        ┌─────────────────┐
                        │ Migrant workers │
                        │   1,300,281     │
                        └─────────────────┘
                  ┌──────────────┴──────────────┐
        ┌──────────────────┐           ┌──────────────────┐
        │ Legal (Regular)  │           │ Illegal (Irregular)│
        │    344,686       │           │     955,595        │
        └──────────────────┘           └──────────────────┘
```

| Permanent resident 14,423 | Temporary 70,449 | BOI 23,245 | National verification 210,044 | MOU 26,525 | CLM 932,255 | Minorities 23,340 |

Any country (108,117)   CLM only (1,168,824)
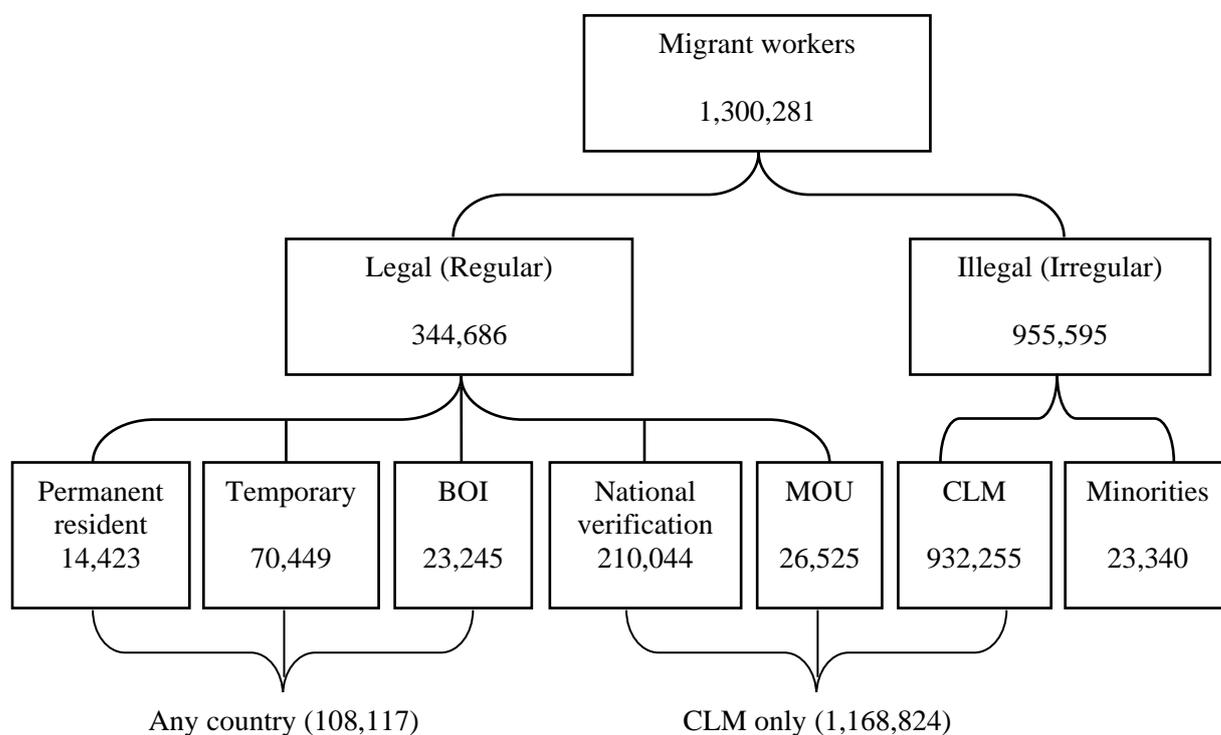
Note: Number of migrant workers under Section 14 or border workers not shown in the government's statistic
Source: Paitoonpong (2011: 4), based on data from the Office of Foreign Workers Administration of Thailand

Appendix 3.3: Demand for Migrant Workers by Sector, As of January 30, 2007

Sectors	Total Demand for Migrant Workers (as of January 2007)	Number of Formal Migrants Placed (as of June 2007)
Agriculture	338,391	422
Construction	333,862	1,038
Domestic work	181,962	12
Fishery	98,951	-
Fishery related work	153,450	136
Other	666,733	6,747
Total	1,773,349	8,355

Source: Chantavanich (2008: 21)

Appendix 3.4: Thai Cabinet Decision on Migrants, 1992-2006

Date	Where	Fees	Note
March 17, 1992	10 border provinces	5,000-baht bond; 1,000-baht fee	Burmese only; 706 migrants registered, but 101,845 purple cards issued
June 22, 1993	22 coastal provinces; fisheries		Not implemented in fisheries until 1939 law amended
June 25, 1996	39 (later 43) provinces; 7 (later 11) industries	1,000-baht bond; 1,000-baht fee; 500-baht health fee	Two-year permits for those who registered between Sept 1-Nov 29, 1996 - 34 types of jobs open to migrants; 372,000 registered, and 303,988 permits granted
July 29, 1997	Step up border and interior enforcement	Remove 300,000 migrants in 1997; another 300,000 in 1998	Provincial committees to deal with migrants; encourage factories in Thai border areas
April 28, 1998 May 8, 1998	Max 158,000, but 90,911 migrants registered; Permit border commuters	1,000-baht bond; 700-baht medical exam fee, 500-1,200-baht provincial health fee	54 provinces, 47 types of jobs; extend permits expiring in August 1998 to August 1999
August 3, 1999 November 2, 1999	37 provinces; 18 sectors in 5 industries	1,000-baht bond; 700-baht medical exam fee, 1,000-baht health card	Max 106,000 permits good for one year, to expire August 31, 2000; 99,974 migrants registered
August 29, 2000	37 provinces; 18 sectors		Allowed 106,684 migrants in 18 sectors and 37 provinces to work until August 31, 2001
August 28, 2001	All industries and all jobs	3,250 baht (US$74); 1,200 baht for six-month renewal	Six-month permits renewable for another six months until September-October 2002; 568,245 migrants registered

(Continued)

September 24-October 25, 2002	All employers, provinces and jobs	3,250 baht (US$74); 1,200 baht for six-month renewal	409,339 migrants registered
July 21, 2003	National Security Council Resolution		Link the number of migrants to demand by sector; minimize migrant families; issue identification card to migrants; enforce minimum wages; encourage returns; develop border areas
November 2003-June 2004	All employers, provinces and jobs	3,250 baht (US$74); 1,200 baht for six-month renewal	288,780 migrants registered
March 2, 2004 decision; July-August 2004 registration		3,800 baht for work permit (1,800), medical exam (600), health fee (1,300), registration fee (100); 13-digit ID	1,284,920 migrants and dependents (103,100) – 72 percent Burmese, 14 percent Cambodian, and 14 percent Laotian. 838,943 completed one yar registration, and 343,777 re-registered in June 2005
MOL, 2006			668,576 registered migrants, 85 percent Burmese, including 460,014 whose work permits expire June 30, 2007 and 208,562 whose work permits expire February 28, 2007. In each case, work permits can be extended one year.

Source: Martin (2008: 2)

Appendix 4.1: Distribution of Migrants by Sequence of Migration

Year of Migration	1st Migration	2nd Migration	3rd Migration	4th Migration	5th Migration	Grand Total (N)
2000	38					38
2001	11	1				12
2002	4	1				5
2003	10	1	1			12
2004	11	2				13
2005	18	3		1		22
2006	9	10				19
2007	17	12	1			30
2008	23	12	3			38
2009	32	6	10			48
2010	36	35	9	5	1	86
2011	4	3		1		8
Grand Total	213	86	24	7	1	331

Note: In each order of migration, households can have only one or more than one member migrated. The small number of migrants in year 2011 was because the second round of data collection was conducted in January 2011.

Source: Household survey conducted by the author

Appendix 4.2: Marginal Effects of the Variables in Probit Model 1

Marginal effects after probit
y = Pr(HHstatus) (predict)
  = 0.726

variable	dy/dx	Std.Err.	z	P>|z|	[95%	C.I.]	X
HHH_gender*	-0.131	0.091	-1.440	0.151	-0.309	0.048	0.261
HHH_edu	-0.013	0.010	-1.260	0.207	-0.033	0.007	4.380
HHH_age	0.010	0.003	3.310	0.001	0.004	0.015	40.120
ProducLabor	0.079	0.028	2.800	0.005	0.024	0.134	3.273
ChildDepRat	0.066	0.053	1.260	0.209	-0.037	0.170	0.614
Index_house	-0.073	0.021	-3.540	0.000	-0.114	-0.033	7.697
Tot_activity	-0.000	0.034	-0.010	0.992	-0.067	0.066	1.983
D_poor*	0.005	0.096	0.050	0.960	-0.183	0.192	0.167
D_poorest*	0.165	0.071	2.320	0.021	0.025	0.305	0.427
DistSch	0.025	0.007	3.610	0.000	0.012	0.039	6.209
DistMarket	0.046	0.030	1.530	0.125	-0.013	0.105	3.900

Note: (*) dy/dx is for discrete change of dummy variable from 0 to 1.
Source: Household survey conducted by the author

Appendix 4.3: Marginal Effects of the Variables in Probit Model 2

Marginal effects after probit
y = Pr(D_Y2006) (predict)
  = 0.580

variable	dy/dx	Std.Err.	z	P>|z|	[95%	C.I.]	X
HHH_gender*	0.015	0.106	0.140	0.887	-0.192	0.222	0.266
HHH_edu	-0.008	0.013	-0.590	0.554	-0.034	0.018	3.955
HHH_age	0.011	0.004	2.700	0.007	0.003	0.020	43.540
ProducLabor	-0.010	0.038	-0.260	0.795	-0.084	0.064	3.656
ChildDepRat	-0.185	0.082	-2.270	0.023	-0.345	-0.025	0.592
Index_house	-0.040	0.025	-1.590	0.112	-0.090	0.009	7.377
Tot_activity	-0.066	0.048	-1.390	0.163	-0.160	0.027	1.994
D_poor*	0.268	0.105	2.560	0.010	0.063	0.473	0.143
D_poorest*	0.238	0.099	2.410	0.016	0.044	0.431	0.481
DistSch	-0.009	0.008	-1.170	0.242	-0.025	0.006	7.201
DistMarket	-0.101	0.041	-2.460	0.014	-0.181	-0.021	3.919

Note: (*) dy/dx is for discrete change of dummy variable from 0 to 1.
Source: Household survey conducted by the author

Appendix 4.4: Marginal Effects of the Variables in Probit Model 3

Marginal effects after probit
y = Pr(D_SubMig) (predict)
  = 0.386

variable	dy/dx	Std.Err.	z	P>|z|	[95%	C.I.]	X
HHH_gender*	0.050	0.109	0.460	0.649	-0.165	0.264	0.266
HHH_edu	-0.006	0.014	-0.410	0.679	-0.033	0.021	3.955
HHH_age	-0.004	0.004	-0.900	0.369	-0.013	0.005	43.540
ProducLabor	0.124	0.041	3.030	0.002	0.044	0.204	3.656
ChildDepRat	0.181	0.085	2.140	0.033	0.015	0.347	0.592
Index_house	-0.053	0.027	-2.020	0.044	-0.105	-0.002	7.377
Tot_activity	-0.038	0.048	-0.800	0.424	-0.132	0.056	1.994
D_poor*	0.001	0.133	0.010	0.992	-0.259	0.262	0.143
D_poorest*	-0.356	0.093	-3.810	0.000	-0.539	-0.173	0.481
DurMig	0.048	0.014	3.430	0.001	0.021	0.076	4.461
DistSch	-0.007	0.008	-0.900	0.370	-0.023	0.009	7.201
DistMarket	-0.035	0.043	-0.820	0.412	-0.119	0.049	3.919

Note: (*) dy/dx is for discrete change of dummy variable from 0 to 1.
Source: Household survey conducted by the author

Appendix 5.1: Result of PCA for Durable Goods

Total Variance Explained

Compon ent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.457	40.953	40.953	2.457	40.953	40.953
2	.957	15.954	56.907			
3	.755	12.578	69.485			
4	.684	11.394	80.879			
5	.594	9.892	90.772			
6	.554	9.228	100.000			

Note: Extraction Method: Principal Component Analysis.

Source: Household survey conducted by the author

Component Matrix[a]

	Component
	1
8.1 Radio	.554
8.2 TV	.743
8.3 Mobile phone	.644
8.4 CD player	.622
8.6 Bicycle	.552
8.7 Motorbike	.701

Note:- Extraction Method: Principal Component Analysis.
  - a. 1 component extracted

Source: Household survey conducted by the author

Component Score Coefficient Matrix

	Component
	1
8.1 Radio	.225
8.2 TV	.302
8.3 Mobile phone	.262
8.4 CD player	.253
8.6 Bicycle	.225
8.7 Motorbike	.285

Note: - Extraction Method: Principal Component Analysis.
Source: Household survey conducted by the author

Appendix 5.2: Result of PCA for Agricultural Tools

Total Variance Explained

Compo nent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.636	32.730	32.730	1.636	32.730	32.730
2	1.272	25.445	58.174	1.272	25.445	58.174
3	.904	18.080	76.254			
4	.706	14.120	90.374			
5	.481	9.626	100.000			

Note: Extraction Method: Principal Component Analysis.

Source: Household survey conducted by the author

Component Matrix[a]

	Component	
	1	2
8.9 Drought animal	.537	-.534
8.10 Pulling cart	.697	-.488
8.11 Hand ploughing tool	.650	.176
8.12 Hand tractor	.324	.681
8.15 Plumbing machine	.579	.504

Note: - Extraction Method: Principal Component Analysis.

  - a. 2 components extracted.

Source: Household survey conducted by the author

Component Score Coefficient Matrix

	Component	
	1	2
8.9 Drought animal	.328	-.420
8.10 Pulling cart	.426	-.383
8.11 Hand ploughing tool	.397	.138
8.12 Hand tractor	.198	.535
8.15 Plumbing machine	.354	.396

Note: - Extraction Method: Principal Component Analysis.

  - Component Scores.

Source: Household survey conducted by the author