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## Remittances and development

*Hanna Fromell, Tobias Grohmann, and Robert Lensink*

### 5.1 INTRODUCTION

The most common form of migration is by people who leave their homes to improve – in one way or the other – their economic opportunities. This is referred to as voluntary labor migration.<sup>1</sup> Labor migration, both domestic and international, affects not only the economic outcomes of the migrants themselves but also the economic outcomes of those left behind: first, through migration – that is, the outflow of people from their origin communities, countries, and labor markets – and, second, through the financial transfers that migrant workers send back home. These transfers are called remittances. They are the topic of this chapter. More specifically, we focus on international remittances: financial transfers made by international labor migrants sent to households in their home country. In the context of voluntary labor migration, remittances result from an active migration decision of one or more members of a household aiming to increase the household's overall income with earnings that are higher than what they would have earned at home.

The recent two decades have seen a large increase in international remittances, where especially low- and middle-income countries receive large sums in comparison to the size of their economy. At the same time, international organizations and policymakers have taken increased interest in international remittances and the financial systems that facilitate their flows (Brown & Jimenez-Soto, 2015). On the one hand, banks consider the handling of remittances as high risk, resulting in derisking measures, such as the closure of accounts held by monetary transfer operators and the termination of correspondent bank relationships through which banks exchange banking services. On the other hand, the number of international migrants is not high enough and that there are substantial positive gains to be realized from lowering the many migration barriers in place (Clemens, 2011). In line with such more-favorable views on the role of migration, international actors are setting international targets on how to reduce financial and regulatory migration barriers in order to encourage individuals to migrate and take up jobs abroad and remit money home. For instance, United Nations sustainable development goal (SDG) number ten explicitly calls to reduce the transaction costs of remittances to less than 3% and to implement well-managed migration policies (UN, 2015). A result of the increasing interest

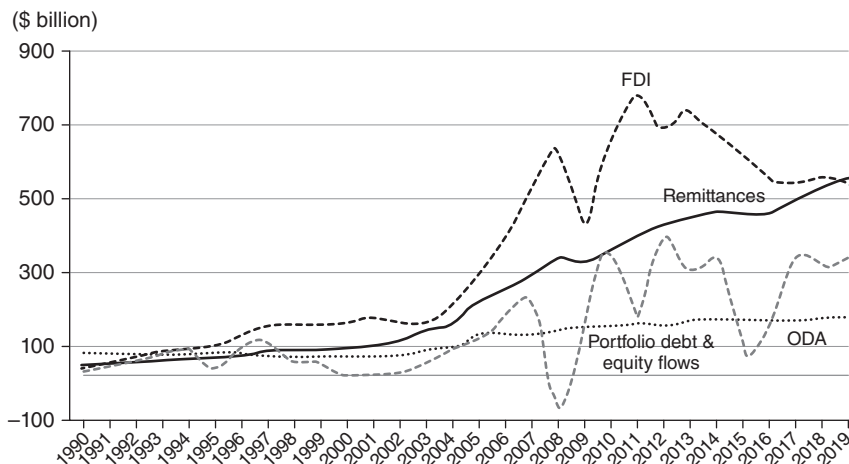
among international organizations and policymakers in the role of international migration and remittances has been an increase in resources allocated to researchers to advance knowledge in this area (Brown & Jimenez-Soto, 2015). Among academics from different disciplines, including economics, there is indeed an increasing interest in remittance research. Questions that have interested economists have concerned the underlying motives among migrants to send money home and the impact of remittances on their recipients, including their communities and on the home economy as a whole.

In this chapter, we review and discuss the results and methodology of research that addresses remittances in a development context. We restrict our review to international remittance payments and focus on remittance flows from developed countries to developing countries. The remainder of this chapter is organized as follows. In section 5.2, we highlight the importance of remittances for development, by sketching the magnitude of current and past remittance flows to developing countries. Section 5.3 outlines some of the key characteristics of remittances. In section 5.4, we present research on the motivation for remittances. The subsequent three sections focus on the impact of remittances on their receivers: section 5.5 discusses the impact of remittances on economic growth; section 5.6 looks at the relationship between remittances and financial development in the recipient economy; and section 5.7 elaborates on the impact of remittances on inequality and poverty. Section 5.8 presents research on policy tools that either aim to facilitate remittance payments or aim to improve the marginal impact of remittance payments.

## 5.2 THE MAGNITUDE AND IMPORTANCE OF INTERNATIONAL REMITTANCES

Remittance flows to low- and middle-income countries (LMICs) reached a record high of USD529 billion in 2018 (World Bank, 2019a). Figure 5.1 shows the amount for remittances, foreign direct investment (FDI), official

FIGURE 5.1 Capital inflows to low- and middle-income countries, in billions USD

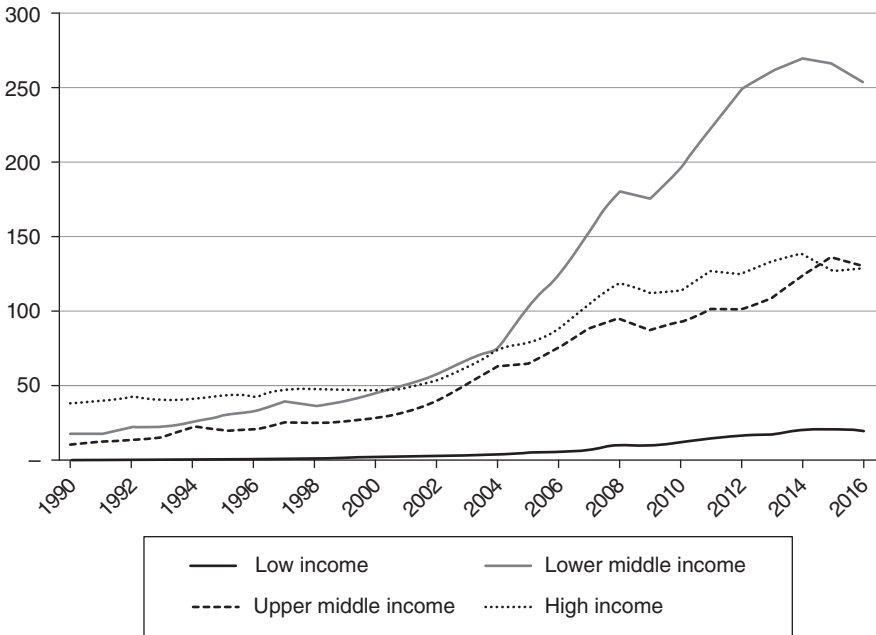


development assistance (ODA), and private financial flows (private debt and portfolio equity) received by LMICs annually since 1990 (World Bank, 2019a, p. 1). In 2018, remittances to LMICs were about three times the size of aid receipts and about as high as FDI. Moreover, remittance payments are expected to increase further in the near future. If China is taken out of the sample, then remittances have already surpassed FDI since about 2014 (ibid., p. 2). The figure also illustrates remittances’ resilience to financial shocks, such as the 2007/2008 financial crisis to which FDI instead responded with a dramatic drop of 39.7%.

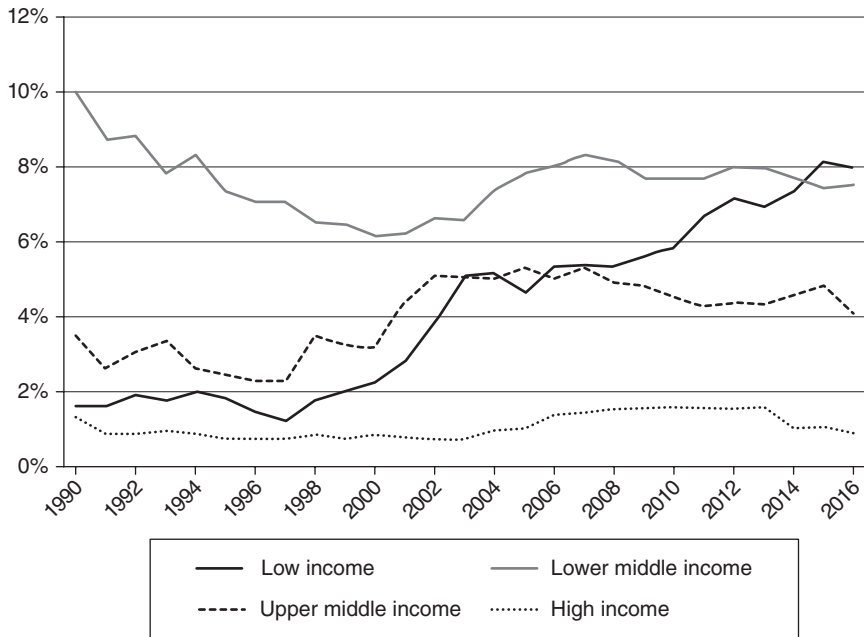
Figure 5.2 plots the evolution of absolute remittance receipts for all countries, grouped by income category, in the period 1990 to 2016.<sup>2</sup> For all income groups, we can observe an overall increase in received remittances since the early 2000s. However, the lower-middle-income countries (LMC) stand out with an especially steep increase in remittances received, while that of the low-income countries (LIC) have undergone only a meagre shift upward in comparison to the other income groups.

Figure 5.3 instead plots remittances expressed in percentage of gross domestic product (GDP) by country-level income group. While remittances receipts in LICs compared unimpressively to other income groups in absolute terms, Figure 5.3 illustrates a strong positive trend in remittances as a share of GDP in low-income countries. Since around 2010, the data show a clear increase in the remittances share of GDP in LICs compared to the

**FIGURE 5.2** Received remittances by country-level income group, in billions current USD



Source: World Bank’s database on World Development Indicators

**FIGURE 5.3** Remittances in percentage of GDP by country-level income group

Source: World Bank's database on World Development Indicators

other income groups. Although the GDP share stagnated over the past few years, this documents the importance of remittances as a source of funding for low-income countries. In the group of low- and middle-income countries, the top receivers of remittances in 2018 in absolute terms were India, China, Mexico, the Philippines, and Egypt. The top receivers in terms of the remittances-to-GDP ratio were Tonga, the Kyrgyz Republic, Tajikistan, Haiti, and Nepal (World Bank, 2019a, p. 2).

### BOX 5.1 Remittances statistics

Country-level data on remittances, such as the statistics presented in section 5.2 retrieved from the World Bank's World Development Indicator (WDI) database, are collected from each country's balance of payments. This is an official record that accounts for incoming and outgoing international economic transactions, which are formally defined in the Balance of Payments and International Position Manual (BPM6, International Monetary Fund, 2009). According to this manual, remittances are a composite measure of two positions in the balance of payments: personal transfers and compensation of employees (capital transfers between households are left out). Personal transfers are cash or noncash transfers from migrants to domestic households that do not

involve economic exchanges such as payments for provided services. (As we will see in section 5.4, this definition assumes that remittances are paid from altruistic motives.) The compensation of employees instead refers to salaries paid to temporary workers (migrants who are residents of the host country for less than one year). This category is commonly included in the measurement of remittances because temporary workers are expected to return with their salaries to their origin country (Yang, 2011). Some researchers argue for excluding compensation for employees from the measure of remittances (Chami et al., 2008; Barajas, Chami, Fullenkamp, Gapen, & Montiel, 2009).

The remittances indicator in the WDI database is itself partly an estimate based on the balance of payments data. The World Bank uses estimates when either no data or only partial data are available in the balance of payments of a country in a given period (for details, see World Bank, 2017, Annex A). Moreover, because the balances of payments capture remittances only if they flow through formal channels, such as electronic wire, they do not capture remittances that flow through informal channels, such as cash or goods carried across borders. While these informal remittance transfers may be small individually, they may make up a considerable portion of remittances received by households, because their overall number is potentially large. Therefore, officially reported country-level remittance flows likely underestimate the actual amount for remittances in the world. Furthermore, changes in how remittances are measured can account for a large share of the increase in remittance in the period 1990–2010 (Clemens & McKenzie, 2018, see also section 5.5.2).

Several ways are available for migrants to send remittances back home. We can distinguish between formal and informal channels. Formal channels are provided by remittance service providers (RSPs), which are classified into four groups: banks, money transfer operators (e.g. Western Union), post offices, and mobile operators. The payments that go through these channels are officially reported and appear in the official statistics seen in Figures 5.1, 5.2, and 5.3. In contrast, remittances sent via informal channels (e.g. in kind or in cash through returning relatives and friends or through transport companies) are typically not included (see also Box 5.1).

The World Bank also provides data on the costs of sending remittances. According to their Remittances Prices Worldwide<sup>3</sup> database, in the first quarter of 2019, the global average of sending remittances was at 6.94% of the remitted amount (World Bank, 2019b). To compare, in 2009, when these data were first collected, the global average was recorded at 9.67%. This marks a decline of almost 3%. Reducing the costs of remittances is subject to many international development agreements. For example, the UN SDGs state a target of reducing the global average to under 3%.

Given this general picture of remittances to developing countries, we next highlight some of the specific characteristics of remittances that make them relevant in a development context.

## 5.3 CHARACTERISTICS OF REMITTANCES

### 5.3.1 Remittances are person-to-person transfers

The most important difference between remittances and other sources of external funding of developing countries is that remittances are person-to-person transfers. In contrast, ODA are government-to-government transfers, and FDI are firm-to-firm transfers (Frankel, 2011; Glytsos, 2002). This suggests that remittances could be effective as stimulators of development. To see this, recall that remittances are the result of an active migration decision leading to higher earnings abroad that are shared with those left behind. Ideally, then, remittances arrive directly where they are most needed at relatively low cost and effort. Hence, they may be effective in tackling poverty and in raising the economic opportunities of their receivers. In contrast, to fully unlock the development potential of ODA, a high level of institutional quality and organization would be required (Burnside & Dollar, 2000). Inefficient governance structures may cause portions of the aid flows to trickle away. Similarly, in order for FDI firm-to-firm transfers to raise incomes and opportunities of the poor, they need to be passed along efficiently in the form of better employment opportunities and higher wages. So in virtue of their person-to-person nature, remittances have the potential to be a direct form of financing development. Yet whether they are more effective than ODA and FDI also depends on whether both senders and receivers of remittances have indeed better information than governments and other organizations about where funding is needed.

### 5.3.2 Remittances and resource allocation

One important aspect to consider when investigating remittances in a development context is that they could change the spending behavior of their recipients. That is, the receipt of remittances may change the recipient household's resource allocation: how much income the household allocates on investments vis-à-vis consumption. We present two views that are based on microeconomic theory.

One view is that the receipt of remittances does not change the spending behavior of households. Here the hypothesis is that remittances are a fungible source of income and that remittances are thus just like any other source of household income (Stark, 1991). This implies that each additional dollar from remittances is spent on exactly the same proportions of consumption and investments as any additional dollar from regular income. Hence, remittances would increase consumption and investment proportionally. This implies that remittances have the potential to promote long-term economic growth in the recipient country through their positive effect on investments while reducing short-term growth fluctuations and short-term poverty through their positive effects on consumption.

The contrasting view is that the receipt of remittances can change the spending behavior of households. Here the underlying assumption is that the life cycle hypothesis (LCH) holds. This means that individuals aim to even out their consumption over their life cycles. If this is the case, then there are two scenarios: the household could allocate the additional remittance income either to investments or to consumption. This depends on whether remittance payments are perceived as transitory (one-off payments) or permanent income flows. If remittances are perceived as transitory payments – that is, raising the recipient’s income only in the current period – households will spend a larger portion of their remittances on investment. This is because they save (invest) their transitory income to distribute consumption over future periods. If, however, remittances are considered permanent, recipients will increase their consumption significantly already in the period of the first receipt. Some authors (Adams & Cuecuecha, 2010) believe that remittances are perceived as a transitory income, while others point to evidence that a significant proportion of remittances are spent on ‘status-oriented’ consumption goods (Chami, Fullenkamp, & Jahjah, 2003), which would indicate that remittances are treated as permanent income. Thus, under the assumption of the LCH, remittances could be either more effective in promoting short-term growth effects (through consumption) or more effective in driving long-term economic growth (investments).

Another reason why remittances may change receiving households’ resource allocation is that they are often earmarked for nonconsumption purposes such as housing, farm equipment, or the education of younger household members (Taylor & Wyatt, 1996; Brown & Jimenez-Soto, 2015). This view implies that remittances have a positive impact on long-term economic growth because they are spent more on the margin on investment goods rather than on consumption.

### 5.3.3 Are remittances countercyclical?

Remittances are often seen as countercyclical cashflows, meaning that remittance flows increase – or at least do not decrease – when the economic situation in the remittance-receiving country deteriorates (Spatafora, 2005; Frankel, 2011; De, Islamaj, Kose, & Yousefi, 2016). If this holds true, remittance flows could serve an informal insurance against economic uncertainty for recipient households. They could provide financial assistance when faced with negative income shocks, such as bad harvests. This would constitute positive impacts on welfare and economic development in poorer countries.

Yet the assertion that remittances are countercyclical for recipient countries is not undisputed in the literature (e.g. Ruiz & Vargas-Silva, 2014). According to theory discussed in section 5.4, countercyclicity should only hold for remittances that have been purely motivated by altruism, as opposed to self-interest. Self-interested remittances are made for investment motives only. Thus, if motivated purely by self-interest, they would stop flowing to receiving countries that are in an economic downturn simply because there are no gains to be made; the senders’ money would be



invested more profitably elsewhere. Moreover, if motivated by self-interest, we would expect them to be largely procyclical with respect to the recipient country. If so, then the potentially beneficial impact of remittances on economic development in the poorest countries might vanish. So whether or not remittances have a positive impact on development in poor countries also seems to depend (at least to a certain degree) on the motives of their senders (De et al., 2016).

What about cyclicity with respect to the remittances-sending country? If economic conditions in the host country of the migrant worsen, for example, when unemployment rises, then migrants may not be able to earn as before and reduce their remittances. So while remittances may be either procyclical or countercyclical with respect to the economic conditions in the recipient country, they are likely to be procyclical with respect to the sending country. On a macroeconomic level, however, the procyclicality of the remittance-sending country does not seem to be pronounced. For example, the data in section 5.2 suggest that remittance flows remained relatively stable over the financial crisis in 2007–2008.

## 5.4 MOTIVATIONS TO REMIT

Given remittances' substantial share of total capital inflows in many developing countries, we look into what motivates migrants to remit. We here present some of the motivations behind remittances frequently discussed in the literature. For each of the motivations, we introduce a bit of theory from which empirical hypotheses can be derived. We then also point to studies that have tested these hypotheses empirically. One challenge for the literature is to disentangle observable outcomes such that motives to remit can be derived from them. This is because motivations to remit should not be seen as mutually exclusive; migrants may well have mixed motives to remit (section 5.4.5). But as we will see, with careful formulations of hypotheses, different motivations for remitting money back home can have different implications for the behavior of the remittance-sending migrant and the remittance-receiving household.

### 5.4.1 Altruism

Perhaps the most apparent reason why migrants remit is that they care about the well-being of the people in their home country, such as family and community members, and prefer to share some of their income with these recipients. In other words, their remittances are altruistically motivated.

Using a mutual altruism framework, in which the migrant as well as the recipient care for each other's well-being, Rapoport and Docquier (2006) show analytically how the volume of the altruistic remittance transfer depends on the altruistic preferences of migrant and recipient as well as on their respective incomes. First, the transfer increases with the altruistic preference of the migrant. That is, the higher the transfer, the more the migrant cares about the well-being of those left behind. This is a result that we would expect from transfers under altruism. Second, maybe surprisingly,

the transfer decreases with the altruistic preferences of the recipient. The intuition is that because the migrant knows that the recipient cares about the migrant's well-being and is therefore harmed when the migrant has to transfer money, there will be lower transfers. In other words, the recipient allows the migrant to keep more of the earnings. Hence, the more the recipient cares about the well-being of the migrant, the lower the required transfers. Third, the altruistic remittances transfer increases with the migrant's income. The intuition is that if there is more to share on part of the migrants, then the additional income will be shared, depending, of course, on how much they care about those left behind. Fourth, the altruistic transfer decreases with the recipient household's income. The intuition is that migrants have an a priori preference for a certain distribution of consumption between themselves and their family. They use both their own income and the nonremittance income of the recipient household to ensure this distribution. Thus, if they see that income at home (in the recipient household) increases, they do not feel compelled to remit as much as before, because they assume that the consumption needs are satisfied.

Since altruistic preferences of migrants and recipients are not directly observable, the literature has tested the two implications regarding increases of the migrant's income and regarding increases of the recipient's income. However, because the hypothesis that remittance transfers increase when migrant incomes go up is consistent with many other motivations to remit (e.g. insurance; see section 5.4.3), reliable evidence for altruistic remittances can be found by testing the hypothesis that the migrant should remit less if the recipient's income increases. In contrast to this prediction, much evidence speaks against the pure altruism hypothesis, since the distribution of consumption indeed varies with the distribution of income. For example, an early study in Botswana by Lucas and Stark (1985) shows that receipts of remittances are not higher among households with a lower pretransfer income than among richer households, holding the level of income of the remitting party constant. Yet Agarwal and Horowitz (2002) find that remittances are lower for households who receive remittances from more than one migrant. They interpret this as evidence consistent with altruism given that additional remittances from others should increase income and lower the needs for remittances by any single migrant.

### 5.4.2 Exchange

Another studied motive for remitters is that of exchange, whereby migrants remit money to pay for services, such as taking care of young family members and elderly family members or maintaining their property. Rapoport and Docquier (2006) show in a simple model for such motivations that remittances are expected to increase with the amount of services required, but that there is no clear prediction about their response to a change in the recipient's income (see Box 5.2). Yet the maximum amount that the migrant would be willing to remit increases with the *migrant's* income, similar to the altruism motive. An increase in the recipient's income should increase their opportunity cost of providing services for the migrant. This implies that they

require a higher payment for providing services, thus increasing the minimum amount that the recipient would be willing to accept from the migrant. This also means that an increase in the recipient's income may decrease the probability of receiving remittances while increasing the amount of received remittances. Notably, this is in contrast to what is predicted by an altruistic model, according to which an increase in the recipient's income always decreases both the probability of receiving and the received amount. Moreover, according to the exchange model, an increase in the employment rate in the remittance-receiving country would increase the recipient's bargaining power and thereby increase the amount received. That is, the recipient at home would have higher opportunity costs (e.g. through better employment opportunities) and would require higher remittances to offset these. The opposite prediction would instead be made if migrants' motives were formed as described by the model of pure altruism. In this case, the recipient's income rises through better employment and their consumption increases. As discussed earlier, this leads the remitting migrant to reduce the amount of remittances sent.

Evidence for the exchange hypothesis is provided by Lucas and Stark (1985), who conducted a study in Botswana. They found that sons remit greater amounts to families with large herds, which could be because the sons pay family members at home to look after their cattle. These findings are also consistent with a motive to inherit, which is discussed in section 5.4.4. However, the altruism motive cannot be ruled out, because the larger remittances were possibly a cause of – rather than a response to – large herds held by the household at home.

### BOX 5.2 Modeling exchange-driven motivations

The model explaining remittances as a result of exchange-driven motivations presented by Rapoport and Docquier (2006) uses a framework in which remittances are regarded as a means to pay for services, denoted  $\bar{X}$ , that the recipient household provides to the migrant. Such services could be taking care of younger or older family members or maintaining property at home. The migrant and the recipient household each has a utility function given by  $U^i(C^i, \bar{X})$ , where  $i = m, h$ ; here  $m$  is the migrant and  $h$  is the recipient household. Since the services generate utility for the migrant but are costly in terms of exerted effort to the recipient household, the marginal effect of services on utilities can be defined as  $\frac{\partial V^m}{\partial \bar{X}} > 0$  and  $\frac{\partial V^h}{\partial \bar{X}} > 0$ . For the recipient household, with a given pretransfer income,  $I^h$ , to be willing to provide the requested number of services, the offered transfer,  $T$ , must be such that

$$V^h(I^h + T, \bar{X}) \geq V^h(I^h, 0).$$

That is, the recipient's utility obtained from providing the service in exchange for payment must be at least as high as the utility that they

can obtain from declining. This participation constraint can be solved for  $T$ : the minimum payment required for the recipient household to be willing to provide the requested services depends on the size of the services and on the recipient's pretransfer income. It then follows that  $\frac{\partial T}{\partial I^h} < 0$  and  $\frac{\partial T}{\partial X} > 0$ . Remittances are thus predicted to increase with the number of services required, but there is no clear prediction about their response to a change in the recipient's income.

### 5.4.3 Insurance for household at home

Remittance payments could also be motivated by an insurance, where the transfers from the migrant insure the recipient household against negative income shocks. In such an arrangement, one would expect a negative relationship between remittances and income fluctuations of the recipient. De la Brière, Sadoulet, Janvry, and Lambert (2002), who study remittances to households in the Dominican Republic, find some support for an insurance contract between female migrants and their parents, where remittances increase when parents experience a loss in number of working days. Further evidence consistent with the insurance motive comes from studies designed to address problems associated with potential endogeneity (e.g. reverse causality and omitted variables). This is because an insurance motive can only be identified if the relationship between remittance transfers and domestic income shocks can be separated from other factors that affect both in the same direction. For example, remittances could fund productive investments and lead to increased income, or as discussed earlier, they might also reduce domestic income by reducing the recipients' labor force participation. Such factors should be excluded in order to identify the negative relationship between remittances and income that is predicted by an insurance motive. Clarke and Wallsten (2003) address reverse causality by using panel data techniques, and Yang and Choi (2007) use variations in rainfall as an instrumental variable (IV) for income variation. Both find evidence that suggests an insurance motive for remittance payments. On the other hand, the finding from Agarwal and Horowitz (2002) that remittances vary depending on whether the household receives remittances from more than one migrant are inconsistent with the insurance motive. The finding is indeed also inconsistent with exchange motives, in which remittances function to pay for services or pay back a loan.

### 5.4.4 Investment for bequests

Because motives such as exchange and insurance build on informal agreements between households and migrated household members, a problem of moral hazard arises, whereby the migrant has an incentive to deviate from their promise to remit. The threat of depriving the migrant from their inheritance rights may thus work as an enforcement mechanism (Rapoport

& Docquier, 2006). De la Brière et al. (2002) present evidence that migrants remit for bequest purposes, by showing that there is a positive association between the remitted amount and land assets of households: migrants from wealthier families tend to remit more than migrants from poorer families.

#### 5.4.5 Mixed motive

While most of the literature discussing the motivation to remit strive toward finding the one motive that best explains remittances, there is widespread recognition that several motives can simultaneously drive a given migrant to send money home. For example, Cox, Eser, and Jimenez (1998) allow for remitters to be driven by both altruism and exchange motives. They suggest that the enforcement of the repayment of a loan could partly be solved through the loyalty and guilt aversion of the remitter toward the recipient.

The exchange of money for services can refer to past services, namely any assistance or loans received that served to aid in the process to migrate. The household and the migrant member of the household would then enter into an informal contract in which the migrant takes a loan from the other household members to finance the expenses necessary to migrate. Cox et al. (1998) use data from a Peruvian household survey and find evidence for a bargaining-cum-altruism framework (mixed motive; see section 5.4.5), in which a member of the household (the prospective migrant) takes a loan from another member of the household to allow for the smoothening of consumption over time and where remittances are used to repay the loan. In this framework, the recipient's pretransfer income can have a positive impact on the received remittances for lower levels of income and a negative impact at higher income levels. The rationale is that the recipient's income positively affects their ability to sustain themselves without borrowing money from the sender, which improves their relative bargaining power over the terms of these loans and causes a positive impact from the recipient income on the transfer amount. On the other hand, increased pretransfer income eases the liquidity constraint of the recipient, making them less in need of the money transfer. For lower levels of recipient pretransfer income, the effect of improved bargaining power dominates that of becoming less in need of additional income, producing an initial positive relationship between income and remittances.

### 5.5 REMITTANCES AND GROWTH

The previous sections already anticipated that remittances may have a positive impact on economic growth in the recipient country. This section deals specifically with the impact of remittances on economic growth. In section 5.5.1, we describe, theoretically, the various channels through which remittance inflows may potentially impact growth. In section 5.5.2, we discuss how empirical studies have tried to identify the effects of remittances on growth and which methodological challenges they face. As will become apparent, the empirical literature has so far been unsuccessful to deliver unambiguous results regarding remittances' impact on economic growth.

### 5.5.1 Theory<sup>4</sup>

To structure our discussion of the various channels through which remittances may affect overall economic growth, we use a standard growth accounting framework. In this framework, the output growth of an economy is broken down into separate contributions of the two main production factors: capital and labor. The residual growth of the economy, which is not accounted for by growth in capital or labor, is attributed to technological progress, expressed by total factor productivity: how effectively the economy uses its production factors. This theory section is divided into three parts, each representing a separate channel through which remittances may affect economic growth:

- 1 Capital accumulation (physical and human).
- 2 Labor force growth.
- 3 Total factor productivity.

Remittances may affect the rate at which an economy invests in economically productive goods (physical capital) and in the skills, knowledge, and experience of its labor force (human capital). There are at least three potential mechanisms through which remittances can alter *physical capital growth*. First, remittances may directly impact physical capital growth simply by providing additional resources for investments. The assumption here is that income from remittances is saved by the remittance-receiving households. Thus, private savings in the economy increase, which means that in our standard growth accounting framework investments also increase (cf. savings–investment identity). Investments are assumed to be spent on productive goods, and in this way, the economy grows. This requires that households spend part of the received remittances on saving or investment and thus perceive them as transitory income (see section 5.3.2). Second, there is a potential indirect effect of remittances on investment via an increase in total income and collateral. This may improve the creditworthiness of remittance-receiving households and ultimately increase their ability to invest in economically productive projects. Third, remittances may have a positive effect on macroeconomic stability and thus shape a positive economic climate for investment.

Yet remittances do not obviously have a positive impact on investments and thus on economic growth. As discussed in section 5.3.2, if remittances are not perceived as one-off payments (i.e. transitory income), but rather as a permanent inflow of additional income, they may stimulate consumption rather than investment – even in the presence of credit constraints (recall that the second mechanism operates through creditworthiness). Remittances may therefore have a relatively small impact on long-term national aggregate output but a larger impact on reducing short-term output fluctuations and short-term poverty (see section 5.7.2).

Remittances may also affect *human capital accumulation*. Keeping the size of the labor force constant, remittances may raise the effectiveness of labor, such as by improving sanitary conditions, facilitating healthier lifestyles, making healthcare possible, and creating educational opportunities.

Remittances may also indirectly affect human capital accumulation by reducing the need for child labor, which, for households in developing countries, is often a way to generate more income. If children are sent to work in order to generate more household income, they usually abandon school at relatively young ages and forgo educational opportunities. By increasing household income, remittances may also reduce the need for child labor, increase educational attainment, improve health, and so increase human capital.

Remittances may affect economic growth through their impact on labor force participation, which alters the size of the economy's *labor force*. Here the impact of remittances is likely to be negative, because the receipt of remittances may create disincentives for receivers to supply labor (see Chami et al. [2003] for a formal model). The labor supply reduction can be explained by an income effect as well as by a substitution effect (Amuedo-Dorantes, 2014). To see this, consider that labor supply decisions arise from a trade-off between allocating time on leisure versus allocating time on work. Remittances are a form of nonlabor income and thus increase the income of the receiving households and raise their reservation wage. That is, they call for a higher price for their labor and demand higher wages. If there are no jobs with that wage, then receivers increase the time they allocate to leisure and reduce the time they allocate to work; this is the income effect.

On the other hand, under the assumption of altruistic remittances, moral hazard and asymmetric information problems may arise. That is, receivers may be incentivized to purposefully reduce their labor supply in order to continue receiving the remittance payments from the remitter; this is the substitution effect. The assumption of altruistic remittances is important here because the remitted amount is tied to the income of the receiving household at home (see section 5.4.1). The moral hazard is that the cost of the risky decision to reduce labor supply is covered by the remitter; the receiver can afford to reduce labor supply, because remittance flows come in. This situation arises because the remitter has incomplete information about the labor supply decisions of the members of the receiving household.

Finally, remittances may also impact economic growth in the receiving country by affecting total factor productivity (TFP) growth. This can occur if remittances alter the quality and efficiency of the financial system with respect to financial intermediation and the allocation of capital (see Barajas et al., 2009). Yet it is not certain whether such TFP effects are positive or negative. For example, if remittances are used by the remitter to invest capital in the receiving country, then remittances could either increase or decrease the quality of financial intermediation. That is, if the person making the investment has an informational advantage (disadvantage) over domestic formal intermediaries, the quality of financial intermediation would increase (decrease) in the recipient country, and TFP growth would increase (decrease). By increasing the size of capital flows in the receiving country's banking system, remittances could also lead to positive economies of scale. That is, because an increased productivity of the financial sector would lower the costs of financial intermediation, remittances could spur TFP growth. Remittances may also increase the financial literacy of their recipients, as they learn about financial products. This could have a positive

impact on their investment decisions, leading to investments into more-productive activities. Yet remittances may also hinder TFP growth and have negative effects on economic growth in the long run through Dutch-disease effects (see Box 5.3)

### 5.5.2 Empirical evidence

The theoretical arguments in the previous section provide ambiguous predictions regarding the impact of remittances on home-country growth; the effect could be positive (e.g. via investments) or negative (e.g. via labor force participation). Moreover, various mechanisms could offset each other. Consequently, researchers have tried to empirically determine the effect of remittances on economic growth. The literature in this field typically implements cross-sectional or panel data in a standard growth regression framework to determine the impact of international remittances on economic growth. Remittances are then included as the explanatory variable of interest among a standard set of growth variables. For example, a cross-sectional specification of such a growth regression could take the following form:

$$\Delta y_i = \beta_0 + \beta_1 y_{0i} + \beta_2 REM_i + \beta_3 X_i + \varepsilon_i,$$

where  $\Delta y_i$  is the growth rate of economic output in country  $i$ , measured by the log of real GDP per capita;  $y_{0i}$  is the initial value of  $y_i$ ;  $REM_i$  is remittances received by country  $i$ ; and  $X_i$  is a set of control variables that account for determinants of economic growth other than remittances. Some studies choose to replace  $REM_i$  – that is, the current level of remittance inflows – with  $\Delta REM_i$ , the change in received remittances between the initial and final period. This is to better capture the dynamic nature of remittance flows.  $X_i$ , the set of control variables, may include variables such as domestic investment, education, net private cashflows, exchange rate changes, and measures for institutional quality or financial development. Usually,  $REM_i$  and  $X_i$  are expressed in their ratio to GDP to account for the size of the recipient economy.

One of the first studies that investigates the impact of remittances on economic growth in a large cross-country study, rather than a single-country study, is Chami et al. (2003). Before their study, constraints on data availability made studying the impact of remittances on a larger sample of countries infeasible. Chami et al. (2003) use cross-section and panel estimations on a dataset with 113 countries in the period 1970–1998. They regress growth in real GDP per capita on (the change of) the remittances-to-GDP ratio. Their results suggest a negative effect of remittances on economic growth.

#### BOX 5.3 Dutch disease

Remittances may affect economic growth of the recipient country by affecting the real exchange rate in the economy. Such effects are called Dutch-disease effects. Assuming that the receipt of remittances increases consumption and that prices in the traded sector are



exogenously given on the global market, higher remittance inflows lead to higher relative prices on nontradable goods. This leads to a shift of resources towards the nontradable sector. Moreover, an increase in relative prices of nontradable goods corresponds to an appreciation of the real exchange rate, which reduces the competitiveness of the economy in international markets and ultimately causes a contraction of the traded sector. Since the traded sector generates positive externalities for the nontraded sector, this may ultimately result in a reduction in the competitiveness of the nontraded sector as well. This results in a loss of overall TFP growth in the economy and has negative impacts on long-term economic growth.

A study by Lartey, Mandelman, and Acosta (2012) substantiates the Dutch-disease effects of remittances, by estimating whether remittances have an impact on the real exchange rate of remittance-receiving countries. To do this, they estimate the following function:

$$RER_{it} = \sum_{j=0}^p \alpha_j REM_{it-j} + \beta_2 X_{it} + (\delta_i + \eta_t + \varepsilon_{it}),$$

where  $RER_{it}$  is the real exchange rate in country  $i$  at time  $t$ ,  $REM$  remittances,  $X_{it}$  a set of control variables,  $\delta_i$  time-invariant country-specific effects,  $\eta_t$  time-specific effects and  $\varepsilon_{it}$  an idiosyncratic error term. The expression  $\sum_{j=0}^p \alpha_j$  allows for longer lags of remittances in order to capture the delayed effects of remittances on the real exchange rate.

Using dynamic panel estimators on a panel of 109 developing and transitioning countries from 1990 to 2003, Lartey et al. (2012) find evidence for a Dutch-disease effect of remittance by showing that remittances lead to an appreciation of the real exchange rate. Amuedo-Dorantes and Pozo (2004) find similar evidence. Lartey et al. (2012) also show that an increase in received remittances leads to a shift from the tradable to the nontradable sector and a decline in the output share of the manufacturing sector, while the output share of the service sector increases. Both of these symptoms serve as further evidence for the Dutch-disease effects of remittances in developing countries. Although Lartey et al. (2012) do not investigate the effects on economic growth or welfare in their sample, their findings lend credibility to the hypothesis that remittances can lead to a decrease in economic growth through a reduction of TFP via Dutch-disease effects.

Chami et al. (2003) formalize a model that predicts moral hazard problems under asymmetric information when remittances payments are understood as altruistic transfers. This serves to formulate testable hypotheses regarding the impact of remittances on economic growth. Recall from the theory in section 5.5.1 that altruistically motivated remittances can create incentives to reduce

labor force participation. Their model, therefore would predict a negative impact of remittances on economic growth in remittance-receiving countries. Although the authors do not test this model explicitly, because they lack data on the labor force participation of migrant versus nonmigrant households in all the countries, they provide indirect evidence for the two main predictions of their model. First, they find that remittances are countercyclical: they increase with negative economic growth in the receiving country. Chami et al. (2003) take this as evidence for altruistic transfers. Second, their results suggest that remittances have a negative impact on economic growth in recipient countries. Together, these two results can be taken as indirect evidence that the receipt of remittances reduces labor force participation. The reason is that only the labor force participation channel is consistent with these two findings.

One of the central methodological challenges in empirical remittance research is to control for the potential endogeneity of remittance flows. Of most concern to researchers is endogeneity due to reverse causality. To see this, consider not only that remittances may affect economic growth but also that economic growth affects the occurrence and size of remittance flows. This is true for countercyclical remittances and procyclical remittances: in both cases, remittance inflows depend on the economic conditions in the receiving country. Moreover, recall that the initial migration decision of labor migrants is typically based on the expected economic outcomes faced by potential migrants at home and abroad. So the mere fact that people are able to send remittances as migrants depends on the economic output of their origin (and destination) countries. Additionally, it seems impossible (or excessively costly) to control for all potential factors that impact both remittances (migration) and growth. Thus, the relationship between remittances and growth appears to be riddled with potential sources of endogeneity.

Chami et al. (2003) address these endogeneity concerns by using an instrumental variable (IV) strategy. More specifically, they use lagged income ratios and lagged interest rate ratios between remittance-receiving countries and the US to instrument remittance flows. The US is taken as a general proxy for all remittance-sending countries. The idea behind this IV strategy is that while the income gaps and interest rate gaps to remittance-sending countries may generate remittance transfers (relevance), they do not determine the economic performance in the recipient country (exclusion) (Chami et al., 2003, pp. 19–21; for more on IV in remittances and migration research, see Box 5.4).<sup>5</sup>

#### **BOX 5.4 Instrumental variables in remittance (and migration) research**

As mentioned several times earlier in this chapter, remittance (and migration) research faces serious endogeneity issues. A popular, and potentially powerful, remedy to endogeneity issues is to use IV regression. If you are unfamiliar with the terms ‘endogeneity’ and ‘instrumental variables’, please refer to standard econometric textbooks.

Two commonly used instruments in remittances and migration research are distance (e.g. from migrant origin to residence at destination) and migrant networks (e.g. the number of migrants from the same origin that already reside at destination). Both these instruments appear relevant, but there are major concerns regarding their exclusion restriction.

The intuition behind the distance instrument is that the greater the distance between origin and destination, the fewer people who will migrate because of associated migration costs. Indeed, there seems to be an inverse relationship between distance and migration flows. Hence, distance should predict migrations – and therefore remittance flows – reasonably well. However, arguing that the distance between origin and destination does not affect (or correlate with) outcomes either at origin or at destination is difficult. For example, the distance between developing African countries and the destination regions of Europe and North America is certainly indicative not only of migrant flows but also of trade flows, colonial ties, and investment flows, all of which affect income, poverty, and education differences between those countries. Thus, distance affects outcomes not only through migration but also through other channels. Exclusion has most likely not been satisfied. See our discussion of the instruments used by Adams and Page (2005) in section 5.7.2.

The intuition behind the network instrument is that the greater the number of people who already live at destination, the lower the costs associated with migration. Prospective migrants do not have to organize their move on their own but rather can rely on networks and even institutionalized channels that help them move and settle in. So relevance is usually satisfied, but the exclusion restriction requires some arguing: the reason why some people have different networks than others is exogenous. Are there omitted variables that would explain both the network and the outcome? The education levels of ancestors, which often are unknown, can affect historical migrations (more educated people are more likely to migrate) and income inequality (people from more educated families are more likely to be richer). Hence, the reason that some have better networks than others is not exogenous but rather endogenously determined by past education levels. Thus, the exclusion restriction is violated.

The previous examples illustrate how difficult finding good instruments in migration research is. The following could work as a general rule of thumb to find an instrument that satisfies the exclusion restriction: if the outcome variable is measured at migrant origin (e.g. incomes of remaining household members), then as an instrument for migration or remittances, use a variable measured at destination (e.g. migrant network); in contrast, if the outcome variable is measured at destination (e.g. earnings of migrants), use an instrument measured at origin (e.g. rainfall shocks at home). If one is worried that migrant

networks do not predict remittance flows well enough, then the instrument could be constructed, for example, as network \* employment at destination. This would also capture the economic conditions at destination, including the ability of migrants to find (well-paying) jobs, and thus capture the migrants' ability to send remittances.

The foregoing rule of thumb can make easier finding instruments that do not affect the outcome directly but only through migration and remittances. So chances are higher to satisfy the exclusion restriction. However, we recommend paying close attention to justifying the IVs properly, because experienced researchers excel at questioning the validity of instruments.

Since the study by Chami and others (2003), numerous other studies have attempted to estimate the effect of remittances on economic growth in the recipient countries (Spatafora, 2005; Faini, 2007; Acosta, Calderón, Fajnzylber, & Lopez, 2008; Chami et al., 2008; Mundaca, 2009; Lartey, 2013; Acosta, Lartey, & Mandelman, 2009; Lartey et al., 2012; Imai, Gaiha, Ali, & Kaicker, 2014, 2016; Feeny, Iamsiraroj, & McGillivray, 2014; Giuliano & Ruiz-Arranz, 2009). These studies differ with respect to their choice of remittance measure, estimation technique, IVs, study period, and selections for countries to study. Despite all these attempts, we don't know whether the receipt of remittances increases or decreases a country's long-term growth. Hence, we cannot conclude on their macroeconomic impact on development in cross-country studies.

We conclude this section by discussing how to interpret the ambiguous results in the literature. For example, Clemens and McKenzie (2018) argue that the reported ambiguous empirical results are due to problems that are more fundamental than the issues regarding specification, sample choice, and instrumentation strategy typically mentioned in the literature. They offer three explanations for the ambiguous results in the literature.

First, they argue that the observed increase of remittance payments in macro data (e.g. balance of payments; see Box 3.1) does not concord with the growth of remittances observed in micro data (e.g. household surveys). They show in their paper that only 21% of the growth in remittances observed between 1990 and 2010 can be attributed to the actual growth of the migrant stocks and migrant earnings. The remaining 79% are attributable to changes in the measurement of remittances. So if remittance growth that we observe in macro data is illusory rather than genuine, then it is also not surprising that we cannot detect consistent effects on growth. Second, they show that, even if the macro data was correct, growth regressions (as discussed earlier) lack the statistical power to even detect any effects on economic growth. And third, they argue that even if there were detectable effects of remittances on home-country GDP growth, they would likely be offset by reduction of the labor force in the home country through migration itself. A similar issue returns when estimating the impact of remittances in micro data on

household incomes (see section 5.7). Yet their third argument highlights an important issue for remittance research: whenever we want to establish an effect of remittances on indicators in the origin communities of migrants, we should do so while taking into account that remittances always occur in conjunction with (or as a consequence of) migration itself. Remittance flows are always preceded by migration flows in the opposite direction.

But does this mean that empirical studies into the development effects of remittances are futile altogether? Concluding that it does would be too quick. As Clemens and McKenzie (2018) argue, although currently available macro data on remittances may display the shortcomings addressed earlier, data become more available in better quality through research and legislation efforts, such that growth regression studies may become feasible in the future after all.

Moreover, it may be more important in the development context to know whether remittances can help receivers to overcome hardship and to escape poverty than to know that remittances incite domestic investment and economic growth.<sup>6</sup> As mentioned earlier, remittances may have other crucial beneficial effects on receiving households and communities. Following this line of thought, we address such effects in the remainder of this chapter. In section 5.6, we discuss the relationship between remittances and financial development. In section 5.7, we present research on the impact of remittances on household incomes – especially with respect to income inequality and poverty. In section 5.8, we also discuss potential policy tools available to policymakers that may help to increase the beneficial effects of remittances on their receivers.

## 5.6 REMITTANCES AND FINANCIAL DEVELOPMENT

In this section, we look at the relationship between remittances and financial development in a remittance-receiving country. On the one hand, the development of the financial system of the remittances-receiving country may be a catalyst for the impact of remittances on economic growth. On the other hand, remittances may directly improve financial development and so contribute to mitigating poverty and inequality in the receiving country. We discuss both options in turn.

It seems almost obvious that better financial development, expressed as the ratio of credits provided by the banking sector (the depth of financial system), facilitates the impact of remittances on economic growth. This is because a more developed financial sector may enhance the efficient allocation of remittance inflows toward profitable investments. Thus, remittances may have a greater impact in countries with more-developed financial sectors. However, this need not be the case. Instead, remittances to developing countries could provide funding for firms and households that do not have access to formal credit markets and so stimulate economic growth. This implies that remittances substitute for credit and would have a greater impact on growth in countries with a less developed financial system.

A well-known study testing the extent to which the impact of remittances on growth depends on financial sector development is that of

Giuliano and Ruiz-Arranz (2009). Using a sample of about a hundred countries for the 1975–2002 period, they estimate the following equation by using ordinary least squares (OLS) as well as system GMM:

$$GDP_{it} = \beta_0 + \beta_1 GDP_{i,t-1} + \beta_2 REM_{it} + \beta_3 FINDEV_{it} + \beta_4 REM_{it} * FINDEV_{it} + \beta_5 X_{it} + \mu_t + \eta_i + \varepsilon_{it}$$

Here *GDP* denotes GDP; *REM* denotes remittances over GDP; *FINDEV* denotes the measure for financial development (measured in four ways); and *X* is a vector of controls. The last three terms refer to a time-fixed effect, a country-specific fixed effect, and an error. The coefficient of interest is  $\beta_4$ : a positive (negative) significant  $\beta_4$  indicates that the marginal impact of remittances on growth positively (negatively) depends on the development of the financial sector. The study finds strong support for a negative interaction between remittances and the development of the financial sector. In other words, the marginal impact of remittances on growth decreases with financial development. Moreover, the study also finds that remittances increase economic growth. Thus, the results in Giuliano and Ruiz-Arranz (2009) support the hypothesis that remittances are used as substitutes for credit and that remittances help provide an alternative way to finance investment. To corroborate this finding, they also show that remittances seem to drive investments in the less financially developed countries. Hence, as suggested earlier, remittances seem to have beneficial effects on households; they appear to lift credit constraints on investments.

Another, more substantial group of literature argues that remittances may enhance financial inclusion and via this channel may improve inclusive growth and reduce poverty. Thus, in contrast to the first group of literature that argues that impacts of remittances on growth depend on the development of the financial sector, this literature claims that remittances affect the development of the financial sector.

Development benefits from financial inclusion can be substantial and diverse since access to financial products may help poor households reduce their level of poverty and deal with shocks. For instance, access to savings accounts enables households to build up a financial safety net, which may induce income-generating activities and thus reduce poverty. In general, financial services can encourage people to accumulate savings and spend more on necessities, such as nutritious foods, education, and farming equipment and other business investments (Demirgüç-Kunt, Klapper, Singer, Ansar, & Hess, 2018). The growing body of research that points at the enormous development benefits of financial inclusion makes necessary determining whether and to what extent remittances are able to increase financial inclusion.

The first step towards financial inclusion is owning a bank account. Thus, the relationship between remittances and financial inclusion seems clear: many migrant households – that is, the migrants and their relatives back home – open and use bank accounts to send and receive remittances. Hence, sending and receiving remittances facilitates financial inclusion at home and abroad. However, there are several additional reasons why

remittances may cause financial inclusion, both via the demand side and via the supply side of financial products. On the demand side, remittance inflows may encourage remittance receivers to demand financial products if the remittances are channeled through a bank account and thus induce the receiver to interact with a bank. The established relationship with a bank may lead to demand for additional financial products, such as savings, credit, and insurance products. Remittances may also increase financial inclusion via the supply side: commercial banks have realized that the remittance channel can be used to promote financial services among low-income individuals. Also, credit unions have started to develop remittance services by allowing members and nonmembers to send money electronically. Bridging remittance senders and receivers, credit unions often offer other financial services, such as savings accounts (Grace, 2005).

In addition, due to remittance inflows, financial institutions can build a financial history of poor people who haven't had access to the financial sector before. Thus, remittance inflows enable poor people to build a sound financial history with a financial institution, which reduces informational asymmetries and improves access to credit. As mentioned earlier, remittance inflows may function as a substitute for a job and a regular income. Many migrated family members regularly send money home to sustain their family, such that this remittance inflow becomes comparable to regular income. The remittance inflow informs the bank about income and expected future funds of the remittance receivers, which may be used to repay loans, and hence provides information about creditworthiness. Because remittance inflows are often countercyclical – that is, remittance inflows often increase during adverse circumstances at home – remittances may also improve the risk profile of the remittance receiver. Related to this, remittances allow banks to build a relationship with new clientele (relationship lending; see Berger & Udell, 2002). Finally, (potential) bank clients can use current and future remittance inflows as collateral, which will lower bank risk and thus may induce banks to provide credit. Therefore, it seems likely that on the one hand receivers of remittances become more interesting clients for banks and on the other hand they are also induced to make more use of banking services.

Yet the potential positive impact of remittances on financial inclusion ultimately depends on the ability and willingness of banks to adapt. Banks need to expand their offering of financial products to poor people to accommodate the transfer of remittances and to induce financial inclusion of those who don't already have access to financial services. However, banks and private sector businesses in general may simply underestimate market opportunity at the 'bottom of the pyramid' (Prahalad, 2004) and refrain from offering new financial products. Also, governments may play an important role in enhancing the effect of remittances on financial inclusion by, for example, removing taxes on incoming remittances and by relaxing exchange and capital controls. Moreover, migrant identification requirements need to be addressed. Migrants without legal status abroad need to be allowed to use formal channels to remit a valid immigration status but lack identification to open a bank account; consequently, they need

to rely on money transfer organizations (MTOs) or informal networks to remit. Moreover, governments need to ensure that appropriate regulations and consumer protection safeguards are in place, and banks must ensure that financial services are tailored to the needs of disadvantaged groups to ensure that poor people benefit from financial inclusion (Demirgüç-Kunt et al., 2018).

One of the earliest papers on the impact of remittances on financial inclusion is Toxopeus and Lensink (2008). They use a cross-sectional dataset on approximately 60 countries for 2005 and use the following equation (with OLS and a median regression technique):

$$FININL_i = \beta_0 + \beta_1 REM_i + \beta_2 X_i + \varepsilon_i$$

Here  $FININL_i$  is the proxy for financial inclusion (measured by percentage of population that has access to a bank account in country  $i$ ).

Toxopeus and Lensink (2008) provide strong support for a positive significant effect of remittances on financial inclusion. They also consider the impacts of remittances on growth, via the financial inclusion channel, using a three-stage least squares (3sls) technique. This analysis indeed suggests that remittances positively affect growth by enhancing financial inclusion.<sup>7</sup>

A much more elaborate and rigorous analysis of the impact of remittances on financial development is that by Aggarwal, Demirgüç-Kunt, and Martínez Peria (2011).<sup>8</sup> The paper uses a panel of developing countries for the period 1975–2007 and applies cross-country regressions and system GMM regressions for a dynamic panel. Their main regression equation is specified as follows:

$$FININL_{i,t} = \beta_0 + \beta_1 REM_{i,t-1} + \beta_2 X_{i,t-1} + \varepsilon_{i,t}$$

The paper provides strong evidence of a positive significant and robust link between the inflow of remittances and financial development in developing countries.

## 5.7 REMITTANCES AND HOUSEHOLD INCOMES

Whereas the previous sections focused on the impact of remittances on economic growth and financial sector development, this section focuses on the impact of remittances on household incomes. In theory, we expect that remittances to have positive effects on household incomes at home. If prospective migrants make well-informed migration decisions, then the earnings that they receive abroad should offset the costs associated with migration and thus increase the overall income available to the household at home.<sup>9</sup>

Rising incomes through remittances may impact poverty levels as well as inequality levels in the origin communities of migrants. On the one hand, we expect that remittances can lift receiving households out of poverty and thus have negative effects on poverty levels at origin. On the other hand, it is not clear a priori whether remittances would reduce or increase income inequality. Remittances could increase inequality if remittances were to reach only those few households that can afford migration in the first place.



Yet if migration were available to poorer households as well, they could reduce inequality at home.

In the empirical literature, the effects on inequality and poverty have been studied by using both micro-level data (e.g. on the household level) and aggregate-level data (e.g. on the municipality or country level). Given that most of the studies are based on household-level data, we focus primarily on these but also consider aggregate-level studies when appropriate.

### 5.7.1 Remittances and inequality

We begin with the impact of remittances on inequality. Inequality is typically measured with the Gini coefficient – sometimes at the local, village level (Stark, Taylor, & Yitzhaki, 1986; Barham & Boucher, 1998) and sometimes at the country level (Adams & Page, 2005; Brown & Jimenez, 2008).<sup>10</sup> Thus, the research question is by how much the receipt of remittances changes the Gini coefficient in the migrants' origin community. Two strands of literature have developed on this topic. They use different identification strategies and may, even if applied to the same sample, arrive at different conclusions on the impact of remittances on inequality. We describe both methods in turn. We believe that looking at both methods enhances our understanding of how remittance transfers may impact receiving households and their communities. (Box 5.5 discusses the underlying assumptions of the two approaches.)

The Gini decomposition method proceeds in two steps. First, total observed village income is decomposed into different sources: home earnings and earnings from remittances. Second, the Gini coefficient of the observed overall income distribution in the sample is compared with the Gini coefficient of the home earnings of nonmigrant households. If the latter is greater than the former, then remittances have reduced income inequality. Thus, the Gini decomposition method can answer the extent to which income from remittances changes the distribution of total income in the village. The Gini decomposition method was introduced by Stark et al. (1986). In their study on two Mexican villages, the authors find that international remittances (from the US) reduce inequality. That is, they find that the Gini coefficient of total income, including remittances, was lower than the Gini coefficient of the nonremittance income. However, they find that the inequality-reducing effect was more pronounced in the village which had a longer migration history to the US than in the village with a shorter migration history. So it seems that the more migrants migrated over time, the more beneficial was the impact of remittances on income inequality.

#### **BOX 5.5 Remittances: exogenous or endogenous transfer payments?**

As mentioned in section 5.7.1, the literature has developed two methods to identify the effect of remittances on income inequality: the Gini decomposition method and the counterfactual incomes method. The

identification strategies should be chosen on the basis of whether the remittances are exogenous transfers or endogenous transfers.

The Gini decomposition method must make the simplifying assumption that the receipt of remittances is independent of household characteristics. That is, it assumes substantial differences between migrant and nonmigrant households with respect to receiving remittances and assumes that the allocation of remittances across households in the origin community is almost random. This assures the identification of the impact of remittances on income inequality: the difference between the Gini of nonmigrant households and the Gini of all households in the sample equals the effect that remittances have on income inequality.

Crucially, if one assumes that remittances are independent of household characteristics, then they are exogenous transfers to household income. They are an additive component to household income. As such, remittances' impact on recipient household income is positive by construction: because remittance flows are never negative (they are either zero or positive), they can also never reduce household income. Yet the assumption of exogenous transfers and, consequently, the implication of nonnegative impact on household income are implausible according to the advocates of the counterfactual incomes method. They argue that remittances necessarily follow from migration and that their effects should always be evaluated in conjunction with the decision to migrate. As explained in section 5.1, household income may decrease after migration even when remittances are paid (e.g. Acosta, Fajnzylber, & Humberto Lopez, 2007). This is possible when migrant earnings abroad are lower than respective home earnings or when household members at home reduce their labor force participation. If this is the case, then remittances are endogenous transfers in the sense that they are substitutes of home earnings rather than an additive source of household income. Hence, receiving remittances depends on household characteristics after all – most importantly on the decision to migrate and to substitute home earnings with earnings abroad.

Thus, the counterfactual incomes method identifies the impact of remittances on inequality as the difference between the Gini of the full sample of households (including remittances) and the Gini of a counterfactual scenario where the household incomes of the sample are calculated as if no one had migrated. So the counterfactual incomes method asks what the gains from migrating and remitting are compared to staying and generating income at home. For further discussion, see Brown and Jimenez-Soto (2015).

In fact, this second result has become one of the central findings in the literature on the impact of remittances on inequality. The general idea is that there exists a nonlinear relationship between remittances and income

inequality, meaning that the effect of a marginal increase in remittances depends on the absolute size of the remittances. In fact, also other studies find that for (initially) low levels, remittances increase community-level inequality and that inequality decreases only once remittances have reached a certain threshold (McKenzie & Sasin, 2007; Shen, Docquier, & Rapoport, 2010; McKenzie & Rapoport, 2007). The literature explains this inverse effect with the maturity of the migration history in the origin community. In the beginning, only a few have the means to migrate abroad, either because they are wealthier than others or because they already have networks abroad that facilitate migration. At this stage, the level of received remittances is low and the transfers benefit only a few, presumably richer, households. This leads to an increase in inequality in the community. However, as emigration from the community continues, migration becomes more affordable also for the poorer households, due to better-established networks at home and abroad. This means that the total number of remittances increases in the community, where more and more remittances go to households at the lower end of the income distribution. The process of a gradual maturing of the migration history of the community therefore leads to a reversal of the effect of remittances on inequality.

The Gini decomposition method has been extended to account for the general equilibrium effects of remittances on incomes in a community at large, both migrant households and nonmigrant households. Hence, it can capture not only the direct but also the potential indirect effects of remittances on inequality (Taylor, 1992; Taylor & Wyatt, 1996). Indirect effects occur when remittances affect either the income of nonmigrant households or other sources of income for the migrant household. For example, remittances may raise the recipient's budget constraint and free up funds for investment. This may increase the income of the recipient household as well as the income of other households through further employment opportunities (e.g. shopkeeping and kettle herding). On the other hand, remittances may negatively impact the labor supply decision of the remaining members of the migrant household. These indirect effects parallel those that we discussed in section 5.5 on economic growth.

Despite the advantage of being able to account for the general equilibrium effects of remittances, the Gini decomposition technique has an important shortcoming: it does not account for the migration decision and the associated opportunity costs of migration. That is, it does not account for the fact that migrant households make an active decision to forgo income at home and to substitute it with remittances from earnings abroad. For the Gini decomposition method, remittances are a separate, additional source of income for the household and the migration decision does not play a role in it (for further details, see Box 5.5).

To address this shortcoming, the second strand of literature has taken a different methodological route. To determine the impact of remittances as substitutes of household income on poverty and inequality, this literature compares the actual earnings of migrant households with what these households would have earned had none of their members migrated. This requires estimating the income of migrant households in a counterfactual

nonmigration scenario. This method is therefore called the counterfactual income method. Studies using this method differ with respect to the construction of the counterfactual nonmigration scenario. Some impute the counterfactual incomes by using data from nonmigrant households; some use the Heckman selection model to construct the counterfactual; and others use propensity score matching.

Several studies use the counterfactual incomes method (Jimenez-Soto & Brown, 2012; Adams & Cuenca, 2013). We briefly present the strategy and results of a seminal study by Barham and Boucher (1998) to exemplify the counterfactual incomes method and to contrast it with the Gini decomposition method. Barham and Boucher investigate the effect of remittances on income inequality on a sample of migrant and nonmigrant households in Bluefields, Nicaragua. They construct a counterfactual nonmigration scenario by estimating the incomes of migrant households had none of the members migrated.<sup>11</sup> Their general strategy is to compare the Gini coefficient of the actual incomes in the observed migration scenario with the Gini coefficient in the counterfactual nonmigration scenario. If the Gini in the actual, observed scenario is lower than the Gini in the counterfactual scenario, then migration and remittances would have had an inequality-reducing effect on incomes in the community.

More specifically, the authors compare two counterfactual scenarios with the actual scenario. For the first counterfactual scenario, they estimate the nonmigration incomes of the migrants and add these counterfactual incomes to the actual incomes of nonmigrants. For the second counterfactual scenario, they also estimate the counterfactual incomes of the nonmigrant members of migrant households, because the migration decision affects not only the migrants but also those left behind. As discussed earlier, nonmigrant members of migrant households may make labor force participation decisions conditional on whether another household member decides to migrate. Hence, migration may not only change the migrants' but also the nonmigrants' contributions to household income.

The results show that the Gini coefficient in the actual (observed) migration scenario is significantly higher than it is in both counterfactual nonmigration scenarios: by 7.5% and by 12%. Because a higher Gini coefficient means higher inequality, remittances have increased income inequality in the sample. Furthermore, when Barham and Boucher use the Gini decomposition method on the same Bluefields sample, they find the opposite result: remittances reduce inequality. That is, if remittances are considered exogenous transfers in this sample, then they reduce inequality. The Barham and Boucher (1998) study suggests that it appears difficult to empirically determine the effect of remittances on inequality in remittance-receiving communities. The results are ambiguous across different methodologies.

### **5.7.2 Remittances and poverty**

In contrast to the ambiguous results on the link between remittances and inequality, there appears to be more consensus that remittances lift the receiving households out of poverty (Adams, 2004; Yang & Martínez, 2006;

Gupta, Pattillo, & Wagh, 2009; Akobeng, 2016; Acosta et al., 2007). As we wrote earlier, these positive results can be expected in the case of successful labor migration. Migration is successful in this sense if migrants achieve what they intend with their migration decision – improving their and their families’ economic outcomes at home by migrating to places where they can find work and earn more money. At least with respect to poverty reduction, migrants seem to make economically rational decisions.

The results seem to be robust across different methodological approaches. For example, Jimenez-Soto and Brown (2012) use the counterfactual incomes method to estimate the effect of remittances on poverty by using household survey data from Tonga. They use propensity score matching to construct the counterfactual scenario to estimate nonmigration household incomes. By measuring poverty in different way, they find that remittances can reduce poverty. For example, remittances reduce the poverty headcount ratio, which measures the extent of poverty, by 31% and reduce the poverty gap ratio, which measures the depth of poverty, by 49%.

Using a cross-sectional approach, Adams and Page (2005) evaluate the direct effect of international remittances on poverty in 71 developing countries. They use a growth-poverty model (Ravallion, 1997; Ravallion & Chen, 1997) given by

$$\log P_{it} = \beta_1 \log y_{it} + \beta_2 \log g_{it} + \beta_3 \log REM_{it} + \delta_i + \varepsilon_{it},$$

where  $P_{it}$  is a poverty measure,  $y_{it}$  is per capita income,  $g_{it}$  is the Gini coefficient,  $REM_{it}$  represents remittances,  $\delta_i$  is time-invariant country-specific effects and  $\varepsilon_{it}$  is an idiosyncratic error term. After instrumenting for the potential endogeneity of remittances, they find a statistically significant negative coefficient for remittances. This means that remittances reduced poverty in their sample.

However, concerns could be raised regarding the IV strategy used in this study. In particular, Adams and Page do not discuss the exclusion restriction of the three instruments that they use to address the endogeneity of the remittance variable. For example, they use the distance between the remittance-sending area (US, EU, or Gulf) and the recipient country as their first instrument. While they rightly argue that distance may be a good predictor of remittances (migration is typically negatively correlated with the distance between origin country and destination country), they do not discuss the exclusion restriction at all. So it is not obvious why distance would not affect poverty in remittances-receiving countries – for example, through trade, FDI, or colonial ties. Thus, it seems that distance is not a good instrument for remittances, and since similar considerations apply to their other two instruments, their study cannot conclusively identify a causal effect of remittances on poverty (see also Box 5.4).

## 5.8 POLICY TOOLS AND INTERVENTIONS

Since much of the empirical literature on the impact of remittances suggests a positive impact on several welfare indicators, some researchers have investigated how policy reform could be used to influence migrants’ remittances

decisions. One question of particular relevance for policy is how remittances can be allocated in the most productive way. Great attention has been paid to whether remittances are used mainly for consumption or for investment. Which one would be the optimal use for a given household is not obvious. Furthermore the evidence diverges on whether remittances tend to be spent more on investments or more on consumption (Yang, 2011). For example, Yang (2008) and Yang and Martínez (2006) exploit sudden changes in exchange rates between the host country of migrants and their origin country, which are used as IV for changes in remittances. Significant increases in investments and an increased likelihood of exiting poverty are identified among the remittance-receiving households. Another question that has been given a lot of attention is how remittances could be further increased. Most of the literature discussed in this section provides evidence about the factors that influence the use of remittances and their magnitude.

### **5.8.1 Financial literacy programs**

If remittances are not spent optimally, imperfect knowledge about financial products on the part of the recipients appears as one plausible explanation. Studies have been conducted in which migrants or the household members left at home receive training in financial literacy to verify whether this has positive effects on remittances and their productivity. Doi, McKenzie, & Zia (2014) find positive effects from providing training both to the household members left at home and to the migrant, before migration. However, they find no positive impact from giving financial training to only the migrant or only the household members left at home. Financial literacy training has also been offered to migrants after their move to the host country. The findings of such training have been mixed, where Seshan and Yang (2014) find increased savings and remittances among migrants working in Qatar, while Gibson et al. (2013) find no impact on remittances sent home from offering financial training to immigrants in Tonga, East Asia, and Sri Lanka.

### **5.8.2 Migrant control over the use of remittances**

If a migrant has a different opinion over how the household should spend the money from that of the household, the migrant may be more inclined to remit more if given greater control over how remittances are spent. Evidence supporting this possibility is provided by Ashraf, Aycinena, Martinez, and Yang (2011), who offer savings accounts with varying degrees of migrant control over savings in the home country and find that migrants accumulate the most savings when they are given the highest level of control. Further evidence for the importance of being in control among migrants is offered by Chin, Karkoviata, and Wilcox (2011).

### **5.8.3 Costs**

As mentioned earlier, the costs associated with international remittances have become the target of international development agreements. Recall that these

costs are often substantial, amounting to a global average of about 7% of the amount remitted (World Bank, 2019a), and there are often relatively high fixed costs per transaction. Nevertheless, remittances have been observed to be relatively frequent and small in size (Yang, 2011), resulting in relatively high fees paid relative to remitted amounts. One potential reason for why migrants choose to remit so often rather than sending larger amounts more seldom is a problem of self-control. Migrants may, for example, anticipate that the recipient will be tempted to spend too much of the remittances as soon as they have been received if a larger amount that is intended to last for a longer period is sent all at once (Yang, 2011). As the costs paid to remit are substantial, scholars have investigated whether a reduction in such costs would enable the supply of remittances to rise. Ambler, Aycinena, and Yang (2015) run a randomized control trial in which they offered migrants living in the US the chance to send money to fund the education of a student of their choice living in El Salvador. They contrast two policy interventions: in the first, migrants' contributions were matched by an additional USD3 for each USD1 submitted, and in the second, the cost to remit were reduced by half. The results show that migrants were more than twice as likely to allocate money through the matching program compared to the cost reduction program. Further illustrating this high price elasticity of demand, they find that no allocations were made when no matching was offered. A high sensitivity in the cost to remit is also confirmed by Ambler, Aycinena, and Yang (2014), who find that the large positive effects in remitted amounts persist even 20 weeks after the discount on costs ceased to apply. The authors find suggestive evidence that this may be because the recipients continue to demand the increased amounts received even after the discount period. Other studies confirm that recipients seem to have some influence over the remittances they receive. In a lab-in-the-field experiment, Ambler (2015) finds that if a migrant earns unexpected windfall money and household members at home learn about this, the migrant is willing to remit more than if the household members do not learn about the windfall.

#### **5.8.4 Channel remittances to specific purposes**

Migrants who are concerned about the productive use of their remittances and who care not only about their family members but also about the community as a whole may be more willing to send money home if their money can be earmarked for specific purposes. Several programs have been designed with such a purpose, where remittances are earmarked for the education of students. For example, the study mentioned earlier, by Ambler et al. (2015), allowed migrants to fund the payment of a selected student in El Salvador. The success of this product is limited in so far as there was no demand for channeling money through this program when there was no matching of money by the program on top of what was offered by the migrant. However, De Arcangelis, Joxhe, McKenzie, Tiongson, and Yang (2015) find evidence for positive demand among migrants to fund the education of students in their origin country. Interestingly the authors find a significant increase, of 15%, in remittances when they are labeled as intended for education but where it is still possible for the recipient to use the money

for other purposes. Imposing a hard form of commitment by channeling the money directly to the school only adds another 2.2% on top of the remittances sent when the money has been labeled.

## 5.9 CONCLUSION

This chapter showed that international remittances, the financial transfers made by labor migrants to their families and relatives at home, have the potential to exert positive effects on economic output, financial development, poverty levels, and income inequality in developing recipient countries. In this sense, their role vis-à-vis other forms of development finance – for example, via official development assistance (ODA) or foreign direct investments (FDI) – cannot be understated and should be further investigated.

This chapter also highlighted the importance of understanding the motivations of migrants to transfer money home as they shape the special characteristics of remittances that set them apart from other forms of development finance. Such an understanding facilitates the assessment of the development effects of remittances and improves any endeavor to eventually unlock their presumed development potential.

While the empirical literature on the development effects of remittances is growing in number and quality, we maintain that consumers should be aware of the various weaknesses regarding data availability and research methodology exhibited by the literature. We also highlighted throughout the chapter that the potentially beneficial effects of remittances should always be investigated in conjunction with migration decisions. Remittances never occur without migration, and therefore, who receives remittances is highly dependent on who can afford to migrate. Future research in the field should therefore account for this selectivity and aim to improve the methods that are used to measure the effect of remittances on development (e.g. McKenzie, Stillman, & Gibson, 2010; Gibson, McKenzie, & Stillman, 2013).

We also described ways that policymakers could influence the remitting behavior of international labor migrants. Supporting the strategies adopted by recent international agreements on migration and remittance policies, a reduction in the costs of remitting smaller amounts promises higher volumes of remittance flows.

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## Discussion questions

- 1 Which theoretical considerations explain a change in the receivers' spending behavior towards consumption and which towards investment goods? Consider the permanent income hypothesis and different motivations to remit.
- 2 What are the effects of remittances from refugees on communities at home? Would they differ from labor migrants' remittances?
- 3 What could explain the ambiguous empirical results on the impact of remittances?
- 4 Do you find the choice of instrumental variables in Chami et al. (2003) convincing? Why or why not?



- 5 Consider the role of the financial sector in the impact of remittances on growth. In your opinion, does the financial sector play a moderating or a mediating role? Read up on moderators and mediators in econometric research. How would you design a study to investigate either of the two roles?
- 6 Given what you have learned, how would you design a program to enhance entrepreneurship through the receipt of remittances in the recipient community?
- 7 What are social remittances, and what would their impact on economic growth, financial inclusion, poverty and inequality be? How would you assess their impact?

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## Notes

- 1 Voluntary labor migration differs from so called forced migration, or displacement, that occurs when people have to leave their homes due to threats to their safety and security. Forced migration is smaller in size and typically generates smaller remittance flows. It has therefore not received much attention in the literature and is not discussed in this chapter.
- 2 This totaled 216 countries: 31 low-income countries, 53 lower-middle-income countries, 56 upper middle-income countries and 76 high-income countries.
- 3 The World Bank, *Remittance Prices Worldwide*, available at <http://remittanceprices.worldbank.org>.
- 4 This section draws from Chami et al. (2008), Barajas et al. (2009), and Amuedo-Dorantes (2014).
- 5 In our study questions, we ask you to evaluate the quality of the Chami et al. instruments. See also Box 5.4.
- 6 Brown and Jimenez-Soto (2015) argue along similar lines.
- 7 The 3sls analysis assumes that remittances affect growth only via financial inclusion. However, remittances likely also affect growth via other channels, implying that the implicit exclusion restriction used in the 3sls approach conducted by Toxopeus and Lensink (2008) will not hold.
- 8 Gupta, Pattillo, and Wagh (2009) use a similar approach to that of Aggarwal, Demirgüç-Kunt, and Martínez Peria (2011). However, Gupta, Pattillo, and Wagh (2009) focus on sub-Saharan Africa. Most importantly, they find strong support for a positive and significant impact of remittances on financial development.
- 9 Recall that we focus on labor migration where one household member leaves their family behind to work abroad. So the decision to migrate is deliberate and not coerced. Of course, if we were to investigate other types of migrations, such as forced migration, then we could not expect that their earnings abroad would necessarily exceed their home earnings.
- 10 The Gini coefficient is the most popular measure of inequality in a population. It measures how far a population's income distribution deviates from a perfectly equal distribution. A Gini coefficient of 0 expresses perfect equality, while a value of 1 expresses maximal inequality.
- 11 The study uses a double-selection Heckman model (Heckman, 1979) to control for the migration decision of migrating household members and the labor force decisions of nonmigrant household members.

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