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**Migration, Remittances, Poverty and Inequality**
**The Philippines**

by

ERNESTO M. PERNIA*

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Abstract

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The paper looks into the effects of international migration and remittances on household incomes and well-being, poverty reduction, human capital investment, saving, and regional development in the home country. Remittances appear to raise average incomes for all income groups but more so for the richer households than for the poorer ones, a finding that is consistent with that in several Latin American countries. Such eyeballing of the data is supported by econometric analysis which further reveals that remittances enhance household savings, spending on education and health care, and help the poor move out of poverty. Analysis at the regional level shows that, *ceteris paribus*, remittances also appear to contribute importantly to regional development, although overall increases in regional incomes do not seem to benefit low income households as much as the upper income ones.

# Migration, Remittances, Poverty and Inequality
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## 1. Introduction

The movement of peoples from the less developed countries to the more developed ones is an age-old phenomenon. Over time, with socioeconomic inequalities persisting across nations, globalization, and demographic structural shifts in the more advanced economies, migration across national borders has picked up speed. More recently, the remittances associated with migration have become a salient issue in academic and policy discussions, as well as in the media, for a number of reasons. First, the amounts have increased sharply, at rates even faster than the departure of migrant workers. Second, for many developing countries, remittances have begun to significantly exceed foreign direct investment (FDI), capital market flows, or official development assistance (ODA). Third, remittances provide timely support to otherwise shaky balance of payments and fiscal positions. Finally, remittances appear to contribute importantly to lifting households out of poverty, as well as benefit the wider community through the multiplier effects of increased spending on consumption or investment.

The Philippines is now reputed to be the world's fourth highest remittance recipient country after India, China, and Mexico. In 2006, remittances were officially recorded at U.S.$12.8 billion – up 20% from the preceding year and are estimated to hit $14 billion by the end of 2007. This amount compares with 2005 estimates of $23.5 billion for India, $22.4 billion for China, and $21.7 billion for Mexico (World Bank 2006). However, relative to GDP, remittances for the Philippines represent just over 10% of GDP – the highest among the four countries. Clearly, remittances flowing from the Filipino *diaspora* have become a major facet in the economic and social life of the country.

This paper focuses on the effects of international migration and remittances on household incomes and well-being, poverty reduction, human capital investment, and regional development in the home country. The next two sections review the international and local literature on the consequences of migration and remittances. The fourth section discusses remittances in relation to domestic incomes and poverty reduction in the Philippines. The fifth section enhances the descriptive analysis with a bit of econometrics that extends the analysis further to investment in human capital, work force participation, saving,

* Professor of Economics, University of the Philippines, Diliman, Quezon City 1101. Very able research assistance was provided by Jackson L. Ubias, Ph.D. candidate at the U.P. School of Economics.

and regional development. The paper concludes with the main points and some implications for policy.

## 2. Migration

It is axiomatic to say that migration is an investment that typically results in benefits which more than compensate for the costs involved. This is clearly borne out by the unabated movement of people across territorial borders and its acceleration in recent years. Such migration is not without the encouragement of governments in developing countries burdened by problems of poverty, unemployment, and shortage of foreign exchange.

Because international migrants typically are among the better educated and experienced workers in the home country, their departure often results in a disruption of economic activity before the vacancies are filled. And even when these are filled, the situation may not be the same as before. Labor market responses would depend on the composition of emigration and the nature of labor markets in terms of flexibility, segmentation, and rates of un- and under-employment. Lucas (2005) reports two general types of outcomes: (i) where emigrant workers are easily replaced with no discernible loss in output or rise in wages (e.g., India, Indonesia, and Sri Lanka); and (ii) where upward pressure on wages is palpable (e.g., Pakistan, Philippines, Mexico, Malawi, and Mozambique).[1] In both cases, the labor market outcome appears to be beneficial to those left behind.

Another important effect of migration is on the quality of goods and services, reflecting the quality of replacement workers. A deterioration in quality would not be unusual. Such is apparent, for instance, in the quality of education and health services in the Philippines as a consequence of the departure of skilled or professional workers, such as teachers and health workers. For instance, health indicators are now lagging behind the Southeast Asian average despite the fact that the Philippines leads in the training of health professionals.[2] However, the deterioration could also be partly due to diminished real budgets for public services owing to the country's less than robust economic growth in earlier periods.

Concerning the brain drain issue, Adams (2003) finds that international legal migration is largely the movement of educated persons, with the large majority of those moving to the United States and other OECD countries having secondary schooling or higher. However, he claims that although migrants are well educated, international migration does not take away a very large share of a country's best educated (in general, less than 10% of the college-educated or higher). Nonetheless, he admits that for a few labor-sending countries, international migration does result in brain drain.

Indeed, other authors argue that international migration leads to a significant loss of highly educated persons for a wide range of countries (Lowell 2002; Lucas 2005). Tan (2007) argues that, in the case of the Philippines, there is a creaming off of highly skilled nurses and

[1] Tan (2007), however, finds no significant upward pressure on real wages in the Philippines and opines that, perhaps, employers decide to hire less qualified replacement workers at prevailing wages instead of raising them to attract or retain highly skilled personnel.

[2] For example, while infant mortality rate had dropped to 29 per thousand in 2001, it is higher than in Malaysia and Thailand; moreover, as much as 40% of women deliver babies without an attending physician, nurse or midwife.

blue-collar workers; to the extent that the education-training system is unable to produce comparable replacements, at least in the short to medium term, brain drain ensues.

In general, however, the empirical evidence on the magnitudes and types of losses to labor-exporting developing countries remains scant. One aspect is the loss of public funds invested in the education and training of those who migrate, particularly permanent emigrants, which is a good argument for the need to reform the financing of tertiary education. Nevertheless, the brain drain is probably not an unmitigated bane as there are compensating benefits, such as remittances, other beneficial links that the emigrants develop and maintain with the home country, as well as return migration.[3]

Regarding international migration and poverty in developing countries, Adams and Page (2003) show that international migration (defined as the share of a country's population living abroad) exerts a strong negative effect on poverty. Overall, a 10% rise in the share of international migrants in a country's population is associated with a 1.9% decline in the proportion of the population living below a US dollar-a-day poverty line. They also find that the level of international remittances (defined as the share of remittances in a country's GDP) is significantly associated with poverty reduction. On average, a 10% increase in the share of remittances in a country's GDP is associated with a 1.6% drop in poverty incidence.

Cross-country regressions, however, are hampered by certain shortcomings, such as the inter-country differences in concepts, definitions and measurements of the variables used. Hence, the results are to be taken with caution, as they can offer at best only broad indications. These exercises need to be complemented or validated by country-specific studies using household survey data and other sub-national data.

## 3. Remittances

Remittances to developing countries are reported to have risen more than fivefold from U.S.$30 billion in 1990 to $170 billion in 2005 (World Bank 2006). These do not include the amounts sent through informal channels which vary directly with the proximity of the host country to the home country and/or with the frequency of home visits by either the migrants themselves or their kin and friends who can serve as trusted couriers. The practice of informal remittance is likely to persist with regulatory systems in both host and home countries that make formal remittance highly cumbersome and costly. Admittedly, some notable progress has been made by governments and international agencies in helping migrants overcome the hurdles of remitting.[4] But, undoubtedly, much more needs to be done.

The reported favorable consequences of remittances in home countries provide strong motivation for improving the remittance system in terms of both making the flows more efficient, as well as broadening and deepening their impact on economic growth and poverty reduction in the sending countries. Indeed, some observers now refer to remittances as the new development finance (Wimaladharma, Pearce, and Stanton 2004).

[3] Good examples are the Chinese and Indian *diasporas* that are playing an important role in the continuing rise of FDIs into China and India. Likewise, both countries are experiencing return migration, either permanent or circular.

[4] This must be a significant factor in the marked rise in recorded remittance flows into home countries.

The motivation to remit is often explained in terms of altruism, pure self-interest (target saving), or mutual insurance (Lucas 2005). It seems more likely that the motivation to remit is a combination of these and other reasons (such as parental or elder-sibling obligation) that can change over time.[5] Remittances are also viewed as returns to migration, an investment in human capital of the migrant typically to provide a better present and a brighter future for the children or younger siblings. Thus, we often hear the remark: "I'm doing this not so much for myself but for my children and their future."

In terms of macro determinants, apart from the economic conditions in the host country that influence the job opportunities and earnings for the migrants, macroeconomic stability (realistic exchange rate, stable prices and interest rates) in addition to social and political stability in the home country would probably favor the rise of formal remittances and the corresponding fall of informal remittances. While beneficial to the economy's long-term growth, the decline of informal remittances could hurt individual families in the short run (e.g., owing to delays, transaction costs, and lower exchange rate). However, in the longer run, as the impact of remittances, working through multiplier effects, deepens and widens throughout the economy, it can contribute to sustained growth and welfare improvement of lower income households.[6]

Since labor migrants tend to come from the not-so-poor households (typically, those above the poverty threshold), it is the lower-middle to middle-income families who directly gain from remittances. In Latin America, Acosta, Fajnzylber and Lopez (2007), for example, find that the proportion of remittance recipient households who are poor varies considerably across countries. Only in some countries are remittance recipients predominantly poor, as in Mexico and Paraguay where 61% and 42% of recipient households, respectively, belong to the first income quintile.

The poorer households could benefit from remittances mainly in subsequent rounds via multiplier effects from increased consumption and investment spending. The size of the multiplier effect may hinge on whether remittances are received by rural or urban households, with the former typically consuming more local products, thereby creating a larger multiplier effect (Adelman and Taylor 1990). How much of the remittances will be spent for consumption and how much for investment by the recipient families themselves, or investment by others from the saved remittances, will depend on the investment climate in the locality (Pernia and Salas 2005). The role of policy is to improve such investment environment (macro fundamentals, governance and institutions, and infrastructure). Combined with social and political stability, such an environment could also encourage migrants to remit through formal channels.

The economic consequences of remittances can be considered at the micro, meso and macro levels. At the household level, a substantial portion of migrant workers' earnings are typically remitted to family members in their home communities. Remittances serve to enhance family incomes, as shown by a number of studies in various countries. Acosta, Fajnzylber and Lopez (2007) find that remittances appear to lower poverty levels in several Latin American countries although the impact varies across countries and, on balance, tends

[5] In the Asian context, and probably also in other developing counties with strong familial ties, caring and giving (including remittance) among family members are typically not considered "altruism" but a natural gesture of concern.

[6] However, Burgess and Haksar (2005) argue that the longer term economic effects of remittances are ambiguous.

to be modest.[7] Latapi and Janssen (2006) provide empirical evidence on the poverty-alleviation effect of remittances specifically in Mexico. In Guatemala, Adams (2006) shows that internal remittances appear to reduce poverty somewhat more than do international remittances.

In the Philippines hit by a recession owing to the Asian financial crisis (1997-98), Yang and Martinez (2006) find that the appreciation of the remittance currency resulted in higher household remittance receipts. These, in turn, led to a notable fall in poverty incidence in remittance-receiving households, with positive spillovers to households without remittances, possibly allowing improved consumption smoothing (Tullao, Cortes and See 2007).[8] Sawada and Estudillo (2006) report a similar outcome as remittances represent a transfer income to low-income households and an increase in gifts to other households. However, remittances appear to lead to higher income inequality (Gini ratios) as they tend to benefit more the higher income deciles (Rodriguez 1998; Tullao, Cortes and See 2007).

One issue that has been raised is the extent to which family members in remittance recipient households may reduce their work effort – a moral hazard effect on labor supply. There is evidence of a decline in labor force participation among remittance recipients – more among females than males – in El Salvador (Acosta 2007) and in the Philippines (Rodriguez and Tiongson 2001; Tullao, Cortes and See 2007), with the gender effect depending on whether the wife or the husband is the recipient (Cabigen 2006). But this appears to be matched by an increase in entrepreneurial activities, such as microenterprises for women and self-employment for men (Acosta 2007; Yang 2004).

The extent to which remittances are spent on consumption or on investment continues to be a debated issue. However, remittances are a fungible resource to the recipient household (Lucas 2005). Hence, the issue is not really whether the money received is actually invested but whether households whose incomes are increased by remittances save more and such savings become available for investment in the local or macro economy. Adams (2006) finds that households receiving internal and international remittances in Guatemala spend less of their incremental income on consumption than do households without remittances. The former type of households tend to spend more on investment, particularly in education, than the latter. In Pakistan, Mansuri (2007) finds that households with return migrants invest significantly more compared with non-migrant households and with those whose migrant members are still working abroad.

Expenditures on education, housing and land are of course important forms of investment.[9] According to Mansuri (2007), remittances have a positive and significant effect on child education and health in Pakistan, with a gender equalizing effect as the gains for girls are appreciably greater than those for boys. Moreover, with better access to schooling, children in remittance recipient households tend to work substantially fewer hours.

Regarding Latin America again, Acosta, Fajnzylber and Lopez (2007) suggest that the effect of remittances on the educational attainment of children is generally restricted to

[7] The Latin American countries include Bolivia, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Paraguay, Peru, and the Dominican Republic.

[8] Burgess and Haksar (2005), however, find no clear empirical support for the purported short-term stabilizing effect of remittances on consumption in the Philippines.

[9] These investments reflect a rational behavior on the part of the family particularly when the investment climate is unfavorable or other investment vehicles are not readily available.

children with low levels of parental schooling. As to health outcomes, they report that in Guatemala and Nicaragua remittances positively affect children's health, especially in poor households.

In the Philippines, Yang (2004) finds that households, whose overseas workers experienced favorable exchange-rate shocks, were able to reduce child labor, increase educational spending, improve child schooling, and afford higher ownership of durable goods. Likewise, Tullao, Cortes and See (2007) report that remittances lead to higher human capital investment (education and health).

Acosta (2007) argues, in the context of El Salvador, that obtaining education and spending more quality time on parental duties or home production are growth-promoting activities. Likewise, when remittance-recipient families hire outside labor, a positive spillover effect on the local community is generated, or when they purchase capital goods, labor productivity is enhanced. However, McKenzie (2006), on the basis of Mexican data, discusses some unfavorable effects of migration, such as on child care (less breastfeeding and uncompleted schedule of vaccines). In addition, parental absence due to migration tends to have an unfavorable effect on the schooling of children, particularly of the more highly educated parents. These other effects of migration are likely to temper the positive effects of remittances.

At the meso level, Pernia (2006) finds that in the Philippines the more developed regions send more overseas Filipino workers (OFWs) than the less developed ones, resulting in appreciably greater shares of total remittances going to the former. However, OFWs from the poorer regions tend to remit home bigger average amounts than those from the richer regions. This may be attributed to greater altruism on the part of OFWs from poorer regions towards their more deprived families. Another explanation – not at variance with the first – is higher positive selectivity of migrants from the less developed regions, i.e., more highly skilled and, hence, earning higher average incomes. An implication is that while remittances overall tend to contribute to a widening of the economic disparities across regions, they appear to lift the well-being of poor households even in the lagging regions.

At the macroeconomic level, remittances have become a major source of foreign exchange, especially for developing countries plagued by fiscal deficits, external debts, persistent trade imbalances, and scant foreign direct investment. Foreign exchange inflows, however, often exert upward pressure on prices, requiring skillful monetary management that often includes sterilization, although in the Philippines, given its dependence on imports, the effect on prices has been the opposite. Moreover, these inflows may spur a real appreciation of the exchange rate, thereby constraining the development of export-oriented and import-competing industries. This has been likened to the Dutch disease problem of Indonesia brought about by the boom in oil exports income (Quibria 1986). Further, the remittance windfall may have a moral hazard effect as the urgency for the government to pursue policy reforms or improve governance dissipates while people are lulled into complacency, as appears to be the case in the Philippines.

## 4. Remittances, Household Incomes, and Poverty

An approach to analyzing the effect of remittances on incomes or on poverty reduction is to look at the quintile distribution of household and individual incomes without and with remittances. For this exercise, merged data from the Family Income and Expenditure Survey

(FIES), Survey of Overseas Filipinos (SOF), and Labor Force Survey (LFS) are used. These surveys are carried out by the National Statistics Office (NSO) at regular intervals. International remittance is defined to include cash receipts, gifts, support, relief and other forms of assistance from abroad.

### 4.1 International remittances and domestic incomes

Table 1 shows that the mean remittance amount received by households (cols. 3 & 6) increases monotonically with income quintile in both 2000 and 2003. The positive effect of remittances on household incomes also rises monotonically from about 1.0% for the lowest quintile to 4.8% for the middle quintile and 12-16% for the top quintile (cols. 4 & 7).

**Table 1. Household income in pesos without and with remittance by quintile (all households), 2000 & 2003**

| (1) Income quintile | 2000 | | | 2003 | | |
|---|---|---|---|---|---|---|
| | (2) Income w/o remittance | (3) Mean remittance | (4) Remittance raises income by (%) | (5) Income w/o remittance | (6) Mean remittance | (7) Remittance raises income by (%) |
| 1 | 31,731.3 | 333.8 | 1.1 | 34,410.4 | 335.8 | 1.0 |
| 2 | 56,422.7 | 1,318.0 | 2.3 | 61,163.3 | 1,363.5 | 2.2 |
| 3 | 86,311.1 | 4,084.9 | 4.7 | 91,849.7 | 4,411.8 | 4.8 |
| 4 | 136,862.9 | 11,877.6 | 8.7 | 141,978.1 | 13,114.0 | 9.2 |
| 5 | 351,941.0 | 44,623.4 | 12.7 | 336,173.5 | 54,667.5 | 16.3 |

Note: **International remittance** is defined to include cash receipts, gifts, support, relief and other forms of assistance from abroad.
Source: Family Income and Expenditure Survey (FIES), 2000 (sample: 39,608 households) & 2003 (sample: 42,094 households).

As Schiff (2006) points out, while the effect of remittances on the poor in general may be limited, it is likely to be larger for those poor households with migrants who remit. Table 2 presents data focusing on remittance-receiving households. It says that the poorest quintile has the lowest share (4-5%) of households receiving remittances and this goes up consistently to 36-44% for the richest quintile (cols. 2 & 6). The impact of remittances on household incomes is indeed larger for all income groups but still greater for the upper quintiles than for the lower ones, rising from 22-35% for the first quintile to 46-49 % for the fifth (cols. 5 & 9).

**Table 2. Household income in pesos without and with remittance by quintile (households with remittance), 2000 & 2003**

| (1) Income quintile | 2000 | | | | 2003 | | | |
|---|---|---|---|---|---|---|---|---|
| | (2) HHs receiving remittance (%) | (3) Income w/o remittance | (4) Mean remittance | (5) Remittance raises income by (%) | (6) HHs receiving remittance (%) | (7) Income w/o remittance | (8) Mean remittance | (9) Remittance raises income by (%) |
| 1 | 3.8 | 25,224.0 | 8,861.1 | 35.1 | 5.0 | 31,037.6 | 6,669.2 | 21.5 |
| 2 | 8.6 | 43,818.3 | 15,325.9 | 35.0 | 11.3 | 51,711.0 | 12,100.0 | 23.4 |
| 3 | 15.7 | 65,970.8 | 26,027.1 | 39.5 | 19.8 | 75,158.1 | 22,347.5 | 29.7 |
| 4 | 24.2 | 101,667.1 | 49,184.6 | 48.4 | 30.5 | 114,106.1 | 43,050.0 | 37.7 |
| 5 | 35.8 | 254,212.1 | 124,771.4 | 49.1 | 44.1 | 267,903.9 | 123,971.2 | 46.3 |

Source: FIES, 2000 (sample: 7,154 households) & 2003 (sample: 8,729 households).

In Mexico, which is the third highest remittance recipient country (the Philippines being the fourth), as mentioned above, the welfare-enhancing effect of remittances is quite the opposite. Latapi and Janssen (2006) finds that while the mean remittance amount also increases with income quintile for remittance-receiving households, as in the Philippines, remittances account for as much as 81% of total household incomes for the lowest quintile, dropping monotonically to 23% for the top quintile.[10]

The substantial impact of remittances on household well-being in Mexico may be explained by the fact that as much as 61% of all households receiving remittances fall in the bottom income quintile, the highest in Latin America, followed by Paraguay with 42% (Acosta, Fajnzylber, and Lopez 2007). This is not the case in the Philippines where larger proportions of remittance recipient households belong to the upper income groups and only 5% or less falls in the bottom quintile.

### 4.1.1 Remittances adjusted for foregone domestic earnings

The welfare-enhancing effect of remittances shown above may be overstated as it does not consider the counterfactual: what if the migrant, who was earning prior to leaving, had stayed home instead? This means that household total income *sans* remittance would be reduced by the departure of the migrant. Thus, there is a need to account for the foregone earnings to better approximate the net effect of remittances on household incomes.

Assuming one migrant per household and that the average earnings per worker prior to migration approximate mean non-remittance income per capita, this amount is deducted from household non-remittance income.[11] The adjustment is done in Table 3 which shows that the effect of remittances on household incomes is much more modest compared with that shown in Table 2. Worse, the adjusted with-remittance incomes for the first and the second quintiles are reduced by more than 3% in 2003 (col. 5) though not in 2000 (col. 3). Still, the welfare-enhancing effect of remittances rises consistently with income quintile.

**Table 3. Household income without and with remittance adjusted for domestic earnings foregone due to migration (households with remittance), 2000 & 2003**

| (1) Income quintiles | 2000 | | 2003 | |
|---|---|---|---|---|
| | (2) Adjusted income w/ remittance | (3) Remittance raises adjusted income by (%) | (4) Adjusted income w/ remittance | (5) Remittance raises adjusted income by (%) |
| 1 | 27,250.0 | 8.0 | 29,946.2 | -3.5 |
| 2 | 47,146.2 | 7.6 | 50,040.9 | -3.2 |
| 3 | 73,459.2 | 11.4 | 76,492.4 | 1.8 |
| 4 | 121,162.2 | 19.2 | 124,064.8 | 8.7 |
| 5 | 299,668.6 | 17.9 | 308,673.8 | 15.2 |

Source: FIES, 2000 (sample: 7,154 households) & 2003 (sample: 8,729 households).

[10] If remittances are computed as increases over household incomes without remittance, as is done for the Philippines in Table 2 above, the rise in total household incomes for remittance recipient households would be a massive 426% for the poorest quintile, falling monotonically to 29.6% for the richest (Latapi and Janssen 2006, Table 4, p. 13).

[11] Mean non-remittance income per capita seems like a reasonable proxy for migrants' average foregone domestic earnings as, in all likelihood, not all migrants were employed prior to departure for such reasons as over-qualification for available jobs, discouraged worker phenomenon, preoccupation with departure plans, etc.

## 4.2 Remittances and poverty reduction

Table 4 illustrates how remittances matter to poverty reduction. In the absence of remittances, there would have been more than 26 million persons, or 33.4% of the total population (col. 5), considered poor in 2003 (according to the official definition of poverty) belonging predominantly to the first two quintiles. But with remittance, poverty headcount was lower at 24 million and poverty incidence at 30% (col. 6). Poverty incidence for the bottom quintile was slightly reduced by 0.1%, and by 13% for the second quintile, while that in all three upper quintiles was completely wiped out (col. 7).

**Table 4. Poverty incidence by income quintile (all households), 2000 & 2003**

| (1) Income quintile | 2000 | | | 2003 | | |
|---|---|---|---|---|---|---|
| | Incidence | | (4) Change (%) | Incidence | | (7) Change (%) |
| | (2) Without remittance (%) | (3) With remittance (%) | | (5) Without remittance (%) | (6) With remittance (%) | |
| 1 | 99.5 | 99.5 | -0.0 | 97.9 | 97.8 | -0.1 |
| 2 | 47.4 | 44.1 | -6.9 | 33.4 | 29.1 | -12.7 |
| 3 | 6.0 | 0.5 | -91.6 | 4.8 | 0.0 | -100.0 |
| 4 | 4.4 | 0.0 | -100.0 | 3.8 | 0.0 | -100.0 |
| 5 | 3.3 | 0.0 | -100.0 | 3.3 | 0.0 | -100.0 |
| **Total (%)** | 36.7 | 33.5 | -8.6 | 33.4 | 30.3 | -9.3 |
| **Total ('000)** | 28,274.3 | 25,855.9 | -8.6 | 26,475.0 | 24,017.9 | -9.3 |

Source: FIES, 2000 (sample: 203,454 persons) & 2003 (sample: 203,609 persons).

Focusing on remittance recipient households (Table 5) reveals that the effect in terms of poverty reduction is more pronounced as total poverty incidence falls in 2003 from about 24% without remittance to 10% with remittance (cols. 5 and 6). Likewise, the poverty reduction effect improves to 2% for the poorest and to 50% for the next poorest (col. 7).

**Table 5. Poverty incidence by income quintile (households with remittance), 2000 & 2003**

| (1) Income quintile | 2000 | | | 2003 | | |
|---|---|---|---|---|---|---|
| | Incidence | | (4) Change (%) | Incidence | | (7) Change (%) |
| | (2) Without remittance (%) | (3) With remittance (%) | | (5) Without remittance (%) | (6) With remittance (%) | |
| 1 | 100.0 | 99.6 | -0.5 | 99.6 | 97.5 | -2.1 |
| 2 | 75.0 | 40.7 | -45.7 | 61.5 | 30.5 | -50.4 |
| 3 | 32.7 | 0.0 | -100.0 | 21.4 | 0.0 | -100.0 |
| 4 | 17.1 | 0.0 | -100.0 | 11.5 | 0.0 | -100.0 |
| 5 | 9.1 | 0.0 | -100.0 | 7.4 | 0.0 | -100.0 |
| **Total (%)** | 28.6 | 10.2 | -64.2 | 24.4 | 10.3 | -57.8 |
| **Total ('000)** | 3,767.0 | 1,348.5 | -64.2 | 4,250.1 | 1,793.2 | -57.8 |

Source: FIES, 2000 (sample: 35,749 persons) & 2003 (sample: 41,894 persons).

On the whole, the results parallel those for the income effect of remittances. The poor appear to benefit from remittances but relatively modestly. Given the distribution of households with more in the upper income groups receiving remittances and, indeed, getting

greater average amounts of these inflows, the beneficial effect of remittances is skewed in their favour. A similar modest effect is reported by Acosta, Fajnzylber and Lopez (2007) in the case of Latin America, except perhaps in Mexico and Paraguay where large proportions of households receiving remittances belong to the poorest quintile.

### 4.3 Domestic remittances

Apart from international remittances, households do benefit from domestic remittances as well. Table 6 presents data on household incomes with international remittances but without and with domestic remittances. This shows that the proportion of households receiving domestic remittances is highest for the bottom quintile at 4.3-4.9% for 2000 and 2003, respectively, and declines consistently to 2-3% for the top group (cols. 2 & 6). And while the average remittance amount still increases monotonically with income quintile (cols. 4 & 8), the effect on household incomes is strongest for the poorest at 16-22%, dropping also consistently to 10-12% for the middle quintile, then to 5.5-8.7% for the richest (cols. 5 & 9). It thus appears that domestic remittances are, at the margin, both more welfare-enhancing for the lower quintiles and inequality-improving than are international remittances, which is consistent with the finding for Guatemala (Adams 2006). This is attributable to the fact that a good part of internal migration is made up of rural-urban migrants who may work in lowly occupations (e.g., domestic help) but are nonetheless the principal sources of support to poor households in rural areas.

**Table 6. Household income without and with domestic remittance (households with domestic remittance), 2000 & 2003**

| (1) Income quintile | 2000 | | | | 2003 | | | |
|---|---|---|---|---|---|---|---|---|
| | (2) HHs receiving domestic remittance (%) | (3) Income w/o domestic remittance | (4) Mean domestic remittance | (5) Remittance raises income by (%) | (6) HHs receiving domestic remittance (%) | (7) Income w/o domestic remittance | (8) Mean domestic remittance | (9) Domestic remittance raises income by (%) |
| 1 | 4.3 | 25,690.8 | 5,537.4 | 21.6 | 4.9 | 29,306.5 | 4,744.7 | 16.2 |
| 2 | 3.9 | 50,273.9 | 7,371.7 | 14.7 | 4.8 | 55,793.8 | 6,720.6 | 12.1 |
| 3 | 3.7 | 80,584.2 | 9,646.9 | 12.0 | 4.7 | 87,535.4 | 8,421.0 | 9.6 |
| 4 | 3.0 | 134,740.6 | 12,016.8 | 8.9 | 4.4 | 142,173.2 | 11,511.7 | 8.1 |
| 5 | 2.0 | 315,294.3 | 27,429.3 | 8.7 | 3.0 | 323,677.1 | 17,822.9 | 5.5 |

Source: FIES, 2000 (sample: 13,126 households) & 2003 (sample: 17,626 households).

## 5. Econometric Analysis

### 5.1 Remittances, household incomes, and poverty

The foregoing discussion of remittances, household incomes, and poverty can be enhanced through econometric analysis. This addresses the question: to what extent can remittances raise household incomes and alleviate poverty, as well as affect investment in human capital, labor force participation and household saving, controlling for the confounding influence of other variables?[12]

[12] Appendix Tables 1 and 2 present the definition of the variables and their descriptive statistics, respectively.

Table 7 shows that the effect of remittances (remit) on household incomes is positive and highly significant, controlling for the education of household head (hheduc), dependency ratio (depratio), and the income class of the province of residence. The negative sign of depratio for quintile 2 is as expected though not the positive sign for quintile 1.[13]

**Table 7. Remittances and household incomes**

**A. Quintile 1**

| HHinc | Coef. | Std. Err. | t | P > \|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| remit | 0.3776106 | 0.0472543 | 7.99* | 0.0000 | 0.2849821 | 0.470239 |
| hheduc | 637.4871 | 30.5207 | 20.89* | 0.0000 | 577.66 | 697.3141 |
| depratio | 1767.899 | 114.628 | 15.42* | 0.0000 | 1543.204 | 1992.594 |
| provcls | 221.5056 | 208.9244 | 1.06 | 0.2890 | -188.0304 | 631.0417 |
| cons | 29761.26 | 301.8917 | 98.58 | 0.0000 | 29169.49 | 30353.03 |

No. of obs = 9,589; R2 = 0.0780.

**B. Quintile 2**

| HHinc | Coef. | Std. Err. | t | P > \|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| remit | 0.1031346 | 0.0150036 | 6.87* | 0.0000 | 0.0737242 | 0.132545 |
| hheduc | 246.719 | 25.15235 | 9.81* | 0.0000 | 197.4149 | 296.0232 |
| depratio | -329.0217 | 100.4025 | -3.28* | 0.0010 | -525.8328 | 132.2105 |
| provcls | 24.4642 | 179.9667 | 0.14 | 0.8920 | -328.3103 | 377.2387 |
| cons | 60904.04 | 277.2191 | 219.70 | 0.0000 | 60360.63 | 61447.45 |

No. of obs = 9,226; R2 = 0.0171.

Note: Asterisked t-values denote significance at 10% level or better.

Table 8 shows that remittances (remitdm) strongly influence education spending per school-age member, controlling for non-remittance income (norеminc) besides the other variables. Similar results are shown in Table 9 in the case of health care expenditure per household member. To illustrate, remittance-receiving households are able to spend 1,788 pesos more for education per school-age member compared with households that do not get remittances, and the corresponding incremental amount for health care is 668 pesos per household member.

**Table 8. Education spending per school-age household member**

| Educ | Coef. | Std. Err. | t | P > \|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| remitdm | 1788.243 | 81.7339 | 21.88* | 0.0000 | 1628.043 | 1948.443 |
| norеminc | 0.0063706 | 0.0001393 | 45.73* | 0.0000 | 0.0060975 | 0.0066436 |
| hheduc | 263.7683 | 8.847238 | 29.81* | 0.0000 | 246.4275 | 281.109 |
| dep_ratio | -782.0801 | 42.431 | -18.43* | 0.0000 | -865.2457 | -698.9145 |
| provcls | 125.9157 | 62.39291 | 2.02* | 0.0440 | 3.624344 | 248.2071 |
| _cons | -865.7164 | 103.3892 | -8.37 | 0.0000 | -1068.361 | -663.0714 |

No. of obs = 42,094; R2 = 0.1154

Note: Asterisked t-values denote significance at 10% level or better.

[13] The results for quintiles 3-5 are also highly significant and show the correct signs for both remit and the control variables. These are not presented here owing to space constraints. The data for this and subsequent regressions are from FIES, 2003.

**Table 9. Health care spending per household member**

| Health | Coef. | Std. Err. | t | P > \|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| remitdm | 667.5469 | 74.38437 | 8.97* | 0.0000 | 521.7521 | 813.3418 |
| noreminc | 0.0031115 | 0.0001268 | 24.54* | 0.0000 | 0.0028631 | 0.00336 |
| hheduc | 29.30999 | 8.051692 | 3.64* | 0.0000 | 13.52851 | 45.09147 |
| dep_ratio | -274.5437 | 38.61559 | -7.11* | 0.0000 | -350.231 | -198.8563 |
| provcls | 11.33038 | 56.78253 | 0.20 | 0.8420 | -99.96453 | 122.6253 |
| _cons | 129.8337 | 94.09243 | 1.38 | 0.1680 | -54.5894 | 314.2568 |

No. of obs = 42,094; R2 = 0.0216

Note: Asterisked t-values denote significance at 10% level or better.

Table 10 shows that, other things being equal, remittances (remitdm) appear to exert a negative effect on the share of employed persons in the household (employshr,), while income *sans remittance* has a positive sign. This negative effect on total household work effort may be interpreted as a complacency effect, as also reported by earlier studies in El Salvador (Acosta 2007) and in the Philippines (Rodriguez and Tiongson 2001; Tullao, Cortes and See 2007),

**Table 10. Proportion employed of total members household members**

| Employshr | Coef. | Std. Err. | t | P > \|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| remitdm | -0.0659184 | 0.002665 | -24.74* | 0.000 | -0.0711416 | 0.0606953 |
| noreminc | 2.15E-08 | 4.54E-09 | 4.73* | 0.000 | 1.26E-08 | 3.04E-08 |
| hheduc | -0.0010258 | 0.000285 | -3.56* | 0.000 | -0.0015912 | 0.0004604 |
| dep_ratio | -0.1417146 | 0.001383 | -102.44* | 0.000 | -0.1444261 | 0.1390031 |
| provcls | 0.0046177 | 0.002034 | 2.27* | 0.023 | 0.0006305 | 0.0086049 |
| cons | 0.5149325 | | 152.76 | 0.000 | 0.5083255 | 0.5215395 |

No. of obs = 42,094; R2 = 0.2088

Note: Asterisked t-values denote significance at 10% level or better.

As regards household saving behaviour, remittances, *ceteris paribus*, seem to have a positive and significant effect on it, while dependency ratio has the expected negative effect (Table 11). Households receiving remittances are able to raise their saving rate by about 3.0%, although this positive effect can be partly offset by a 1.0% rise in child dependency burden. When remittances are expressed as a ratio to total household income among households with remittances, the positive saving effect remains significant.

**Table 11. Proportion of household savings to total income**

| Saveshr | Coef. | Std. Err. | t | P > \|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| remitdm | 0.0314375 | 0.0027646 | 11.37* | 0.0000 | 0.0260188 | 0.0368561 |
| noreminc | 1.74E-07 | 4.71E-09 | 36.87* | 0.0000 | 1.64E-07 | 1.83E-07 |
| hheduc | 0.0042923 | 0.0002993 | 14.34* | 0.0000 | 0.0037057 | 0.0048788 |
| dep_ratio | -0.0341328 | 0.0014352 | -23.78* | 0.0000 | -0.0369458 | -0.0313197 |
| provcls | 0.010094 | 0.0021104 | 4.78* | 0.0000 | 0.0059576 | 0.0142304 |
| _cons | 0.018565 | 0.0034971 | 5.31 | 0.0000 | 0.0117107 | 0.0254193 |

No. of obs = 42,094; R2 = 0.0677

Note: Asterisked t-values denote significance at 10% level or better.

Table 12 gives the results of logit regression which shows that the share of remittances in household income (remitshr) raises the likelihood of a household getting out of poverty, other things being equal. However, the signs for education of household head (hheduc) and for dependency ratio (depratio) are the opposite of what would be expected.

**Table 12. Remittances and getting out of poverty**

| Pov-out1 | Coef. | Std. Err. | z | P > \|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| remitshr | 6.022487 | 0.1600771 | 37.62* | 0.0000 | 5.708742 | 6.336232 |
| hheduc | -0.161073 | 0.0107673 | -14.96* | 0.0000 | -0.1821764 | -0.1399695 |
| depratio | 0.5059208 | 0.04648 | 10.88* | 0.0000 | 0.4148216 | 0.59702 |
| provcls | -0.1902766 | 0.0752143 | -2.53* | 0.0110 | -0.3376938 | -0.0428593 |
| cons | -3.014069 | 0.134426 | -22.42 | 0.0000 | -3.277539 | -2.750599 |

No. of obs. = 8,279; Pseudo R2 = 0.3427

Note: Asterisked z-values denote significance at 10% level or better.

## 5.2 Remittances and regional development

The question whether remittances contribute to the well-being of communities or development at the local level can be examined through econometric analysis of the regional data. Based on the literature review, the hypothesis is that remittances not only benefit recipient households directly but also influence the local economy via increased household spending. In other words, besides the recipient families, non-recipient households are affected indirectly from the initial impact of remittances on the local economy and subsequent multiplier effects.

Regression equations

The model has three main variables – welfare of the poor (proxied by expenditure of the poor), remittances, and gross regional domestic product (GRDP). These variables are likely endogenous, hence, requiring three equations:

$$EXPOOR_{rt} = EXPOOR_{rt}(REMIT_{rt}, GRDP_{rt}, LOCAL_{rt}) \quad (1)$$

$$REMIT_{rt} = REMIT_{rt}(GRDP_{rt,} LOCAL_{rt}) \quad (2)$$

$$GRDP_{rt} = GRDP_{rt}(REMIT_{rt,} LOCAL_{rt}) \quad (3)$$

where

$EXPOOR_{rt}$ = expenditure per capita of the poor in region *r* at time *t*

$REMIT_{rt}$ = remittance per capita in region *r* at time *t*

$GRDP_{rt}$ = income per capita in region *r* at time *t*

$LOCAL_{rt}$ = local factors/initial conditions in region *r* at time *t*

$LOCAL_{rt}$ is a vector of exogenous local factors or initial conditions that serve as control variables. These include human and physical infrastructures, such as average schooling years of household heads (hheduc), employment ratio (employr), dependency ratio (dep-ratio), initial primary and secondary school participation rates (elempr0 and hspr0),

initial infant mortality rate (infmort0), initial road density (roads-to-area ratio, road0), initial electricity and water supply coverage (elect0 and water0).

Equation 1 shows how the welfare of the poor is influenced by the region's GRDP per capita, remittance per capita, and local factors or attributes. Equations 2 and 3 take into account the endogeneity of GRDP and remittances as both are affected by each other and by local factors.

Equations 1-3 are estimated using the three-stage least squares (3SLS) method. The 3SLS estimation procedure takes into account not only the endogeneity of the three variables (expenditure of the poor, remittances, and regional income) but also the interaction between equations through the covariance matrix of the equations' disturbances. To test for dynamic effects, current as well as lagged values are used.[14]

For the estimation, panel data on 15 regions for the years 1994, 1997, 2000, and 2003 are used.[15] The data on remittances and household expenditures are from the merged FIES, SOF and LFS; gross regional domestic product (GRDP) from the national income accounts; and various socioeconomic data from records of relevant government agencies. The remittance data set is much bigger than the one used in Pernia (2006) which was solely from the SOF.

Expenditure rather than income of the poorest 40% (quintiles 1 and 2) is adopted to indicate the welfare of the poor. For theoretical and practical reasons, mean consumption expenditure is deemed superior to mean income as a measure of welfare (Deaton 1997). The theoretical basis is the permanent income hypothesis; at the same time, in practice, current income is more difficult and costly to measure in developing countries where the majority of the poor are self-employed and engaged in agricultural activities with fluctuating incomes.

Empirical results

The regression results are mostly in accord with expectations. Table 13 shows that remittances have a positive and significant effect on the well-being of poor households, as reflected in higher family spending per capita of the bottom quintile (q1), after controlling for the effects of other variables. To illustrate, an increase of P1,000 in remittance per capita results in P1,789 additional annual family spending per person among the poorest quintile. Roads, education (hheduc), and health (infmort0) also appear to be particularly important factors that improve the poor's

**Table 13. Remittances, HH expenditure, and GRDP (Quintile 1)**

| Expoor_q1 | Coefficient | t-value | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| GRDP_pc | -34.5606800 | -1.33 | 0.1850 | -85.6594 | 16.5381 |
| remit_pc | 1788.9000000 | 2.31* | 0.0210 | 268.8319 | 3308.9690 |
| roadd0 | 733.7590000 | 4.58* | 0.0000 | 420.0030 | 1047.5150 |
| infmort0 | -33.8221100 | -2.55* | 0.0110 | -59.8581 | -7.7861 |
| hheduc | 224.8272000 | 3.06* | 0.0020 | 80.7198 | 368.9345 |

[14] Appendix Tables 1 and 3 present the definition of the variables and their descriptive statistics, respectively.
[15] The regions are as classified in 2004 and this regional classification is used consistently throughout the period.

| | | | | | |
|---|---|---|---|---|---|
| employr | 187.4082000 | 0.10 | 0.9190 | -3441.6500 | 3816.4660 |
| elempr0 | 15.4874300 | 0.81 | 0.4190 | -22.0739 | 53.0487 |
| hspr0 | 0.8359953 | 0.10 | 0.9200 | -15.5670 | 17.2389 |
| _cons | 187.8218000 | 0.12 | 0.9040 | -2866.8780 | 3242.5210 |
| remit_pc | | | | | |
| GRDP_pc | -0.0152769 | -1.02 | 0.3060 | -0.0446 | 0.0140 |
| roadd0 | 0.1751564 | 2.87* | 0.0040 | 0.0555 | 0.2948 |
| infmort0 | 0.0043699 | 0.59 | 0.5530 | -0.0101 | 0.0188 |
| hheduc | 0.0032430 | 0.10 | 0.9180 | -0.0586 | 0.0651 |
| employr | -2.4772770 | -3.05* | 0.0020 | -4.0715 | -0.8830 |
| dep_ratio0 | -0.0257910 | -6.04* | 0.0000 | -0.0342 | -0.0174 |
| _cons | 3.6105720 | 5.9* | 0.0000 | 2.4103 | 4.8108 |
| GRDP_pc | | | | | |
| remit_pc | 7.7237530 | 6.65* | 0.0000 | 5.4486 | 9.9989 |
| roadd0 | 1.0803020 | 2.24* | 0.0250 | 0.1355 | 2.0251 |
| infmort0 | -0.2704564 | -4.35* | 0.0000 | -0.3923 | -0.1486 |
| hheduc | 0.6211327 | 2.25* | 0.0250 | 0.0798 | 1.1625 |
| employr | 13.9878900 | 1.82* | 0.0680 | -1.0569 | 29.0327 |
| water0 | 14.1068700 | 7.41* | 0.0000 | 10.3756 | 17.8382 |
| _cons | -4.1273570 | -1.17 | 0.2440 | -11.0638 | 2.8090 |

| Equation | Obs | Parms | RMSE | R-sq | F-stat | P |
|---|---|---|---|---|---|---|
| expoor_q1 | 60 | 8 | 366.8176 | 0.9246 | 722.74 | 0.0000 |
| remit_pc | 60 | 6 | 0.205097 | 0.7051 | 154.52 | 0.0000 |
| GRDP_pc | 60 | 6 | 2.022557 | 0.8624 | 387.82 | 0.0000 |

Note: Asterisked t-values denote significance at 10% level or better.

welfare; by contrast, overall increases in regional incomes (GRDP) per capita do not seem to matter to the poor's well-being. As the third panel of Table 13 shows, remittances appear to contribute significantly to regional development through increased spending for consumption, human capital and housing investments, and consequent multiplier effects. However, because the more advanced regions tend to get bigger shares of the total, remittances may contribute to regional divergence rather than convergence (Pernia 2006). As expected, roads, water, education and health infrastructures are critical to regional development.

Table 14 shows that the regression results for the next poorest 20% of households (quintile 2) closely resemble those for the poorest quintile. Here, additional spending rises to P2,177 for every P1,000 incremental per capita remittance. The magnitude of this positive effect on household well-being continues to rise for quintile 3 but becomes insignificant for the next higher quintiles.[16] This is not surprising as remittances probably matter less to the richer families.

[16] The regression results for quintiles 3-5 are not presented here due to space constraints but are available with the author.

**Table 14. Remittances, HH expenditure, and GRDP (Quintile 2)**

| Expoor_q2 | Coefficient | t-value | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|
| GRDP_pc | 19.7960100 | 0.64 | 0.5200 | -40.4793 | 80.0713 |
| remit_pc | 2176.7630000 | 2.38* | 0.0180 | 380.9168 | 3972.6100 |
| roadd0 | 634.9709000 | 3.36* | 0.0010 | 264.4181 | 1005.5240 |
| infmort0 | -34.0943700 | -2.17* | 0.0300 | -64.8396 | -3.3492 |
| hheduc | 365.9736000 | 4.22* | 0.0000 | 195.9233 | 536.0239 |
| employr | -192.9370000 | -1.00 | 0.3160 | -6480.2480 | 2094.3740 |
| elempr0 | 36.1213400 | 1.60 | 0.1100 | -8.1753 | 80.4180 |
| hspr0 | -9.9495820 | -1.01 | 0.3130 | -29.2814 | 9.3822 |
| _cons | -995.3467000 | -0.54 | 0.5880 | -4597.0710 | 2606.3770 |
| remit_pc | | | | | |
| GRDP_pc | -0.0152769 | -1.02 | 0.3060 | -0.0446 | 0.0140 |
| roadd0 | 0.1751564 | 2.87* | 0.0040 | 0.0555 | 0.2948 |
| infmort0 | 0.0043699 | 0.59 | 0.5530 | -0.0101 | 0.0188 |
| hheduc | 0.0032430 | 0.10 | 0.9180 | -0.0586 | 0.0651 |
| employr | -2.4772770 | -3.05* | 0.0020 | -4.0715 | -0.8830 |
| dep_ratio0 | -0.0257910 | -6.04* | 0.0000 | -0.0342 | -0.0174 |
| _cons | 3.6105720 | 5.9* | 0.0000 | 2.4103 | 4.8108 |
| GRDP_pc | | | | | |
| remit_pc | 7.7237530 | 6.65* | 0.0000 | 5.4486 | 9.9989 |
| roadd0 | 1.0803020 | 2.24* | 0.0250 | 0.1355 | 2.0251 |
| infmort0 | -0.2704564 | -4.35* | 0.0000 | -0.3923 | -0.1486 |
| hheduc | 0.6211327 | 2.25* | 0.0250 | 0.0798 | 1.1625 |
| employr | 13.9878900 | 1.82* | 0.0680 | -1.0569 | 29.0327 |
| water0 | 14.1068700 | 7.41* | 0.0000 | 10.3756 | 17.8382 |
| _cons | -4.1273570 | -1.17 | 0.2440 | -11.0638 | 2.8090 |

| Equation | Obs | Parms | RMSE | R-sq | F-stat | P |
|---|---|---|---|---|---|---|
| expoor_q2 | 60 | 8 | 429.584 | 0.9389 | 890.33 | 0.0000 |
| remit_pc | 60 | 6 | 0.205097 | 0.7051 | 154.52 | 0.0000 |
| GRDP_pc | 60 | 6 | 2.022557 | 0.8624 | 387.82 | 0.0000 |

Note: Asterisked t-values denote significance at 10% level or better.

Another result worth noting in Tables 13 and 14 is that while the impact of an increase in regional income (GRDP per capita) on household welfare is insignificant for quintiles 1 and 2, it is positive and significant for quintiles 3-5, with the size of the positive effect increasing monotonically. This suggests that regional development in general does not benefit low-income households as much as the higher income families, which is consistent with earlier findings based on provincial data (Balisacan and Pernia 2003).

Does the positive impact of remittances on the expenditure of the poor in the regions translate into poverty reduction or the poor getting out of poverty? Table 15 presents the results of 3SLS regression using the model [equations (1)-(3)] above, but substituting the proportion of households who are able to surmount the poverty threshold (povout2) for

expenditure of the poor (expoor). Consistent with the results discussed above, remittances do seem to have a positive and significant effect on poverty reduction, i.e., the higher the ratio of remittance per capita to GRDP per capita (remitshr2), the greater the proportion of poor households getting out of poverty (povout2). To illustrate, a 10% increase in remitshr2 results in a 2.6% rise in the proportion lifted out of poverty. The control variables (reflecting human capital stock) are also significant and have the correct signs, namely, lagged infant mortality rate (infmort0) and lagged high school participation rate of population aged 13-16.

**Table 15. Remittances, poverty reduction, and GRDP**

| Variable | Coef. | Std. Err. | z | P > \|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| povout2 | | | | | | |
| remitshr2 | 0.2576122 | 0.073465 | 3.51* | 0.0000 | 0.1136218 | 0.4016026 |
| infmort0 | -0.0007451 | 0.000435 | -1.71* | 0.0870 | -0.0015984 | 0.0001082 |
| hspr0 | 0.0004809 | 0.000153 | 3.12* | 0.0020 | 0.0001793 | 0.0007825 |
| _cons | -0.0055738 | 0.009798 | -0.57 | 0.5690 | -0.0247776 | 0.0136301 |
| remit_pc | | | | | | |
| grdp_pc | -0.0254725 | 0.015375 | -1.66* | 0.0980 | -0.0556069 | 0.0046618 |
| roadd0 | 0.213839 | 0.063027 | 3.39* | 0.0010 | 0.0903082 | 0.3373699 |
| infmort0 | 0.0018616 | 0.007635 | 0.24 | 0.8070 | -0.0131045 | 0.0168277 |
| hheduc | 0.0129546 | 0.032650 | 0.40 | 0.6920 | -0.0510388 | 0.076948 |
| employr | -2.430346 | 0.843813 | -2.88* | 0.0040 | -4.08419 | -0.7765026 |
| dep_ratio0 | -0.0269341 | 0.004435 | -6.07* | 0.0000 | -0.0356265 | -0.0182416 |
| _cons | 3.761769 | 0.635488 | 5.92 | 0.0000 | 2.516234 | 5.007303 |
| grdp_pc | | | | | | |
| remit_pc | 5.078041 | 1.051485 | 4.83* | 0.0000 | 3.017168 | 7.138913 |
| road0 | 1.787525 | 0.465865 | 3.84* | 0.0000 | 0.8744443 | 2.700605 |
| infmort0 | -0.2354732 | 0.062374 | -3.78* | 0.0000 | -0.3577255 | -0.1132208 |
| hheduc | 0.5714185 | 0.278638 | 2.05* | 0.0400 | 0.0252967 | 1.11754 |
| employr | 11.83606 | 7.736603 | 1.53 | 0.1260 | -3.327401 | 26.99953 |
| water0 | 13.32879 | 1.917441 | 6.95* | 0.0000 | 9.570675 | 17.0869 |
| _cons | -2.062298 | 3.549034 | -0.58 | 0.5610 | -9.018276 | 4.893681 |

| Equation | Obs | Parms | RMSE | R-sq | chi2 | P |
|---|---|---|---|---|---|---|
| povout | 60 | 3 | 0.0161765 | 0.3166 | 31.13 | 0.0000 |
| remit_pc | 60 | 6 | 0.213836 | 0.6794 | 140.35 | 0.0000 |
| GRDP_pc | 60 | 6 | 2.017302 | 0.8631 | 361.07 | 0.0000 |

Note: Asterisked z-values denote significance at 10% level or better.

The third panel of Table 15 shows that remittance per capita (remit_pc) has a positive and significant effect on regional income per capita (grdp_pc), reflecting regional development, through increased spending for consumption, human capital and housing investments, and consequent multiplier effects. Moreover, initial physical infrastructure (road0 and water0) and human infrastructure (hheduc and infmort0) are important for regional development.

## 6. Conclusion and Policy Implications

International remittances appear to raise average incomes for all income groups but more so for the richer households than for the poorer ones. Adjusted for the migrants' foregone domestic earnings, the income effect turns out even more modest, particularly for the lower income groups, a finding this is consistent with that in several Latin American countries. The higher income quintiles have proportionately more households receiving remittances and, indeed, receiving bigger amounts, suggesting that remittances contribute to a skewing of income distribution across households. By contrast, domestic remittances appear to be more welfare-enhancing for the lower income households than are international remittances.

Econometric analysis reveals that, other things being equal, remittances do significantly enhance household incomes and savings, raise spending on education and health care, and help the poor move out of poverty. However, remittances may also result in complacency as household members left behind tend to reduce participation in the work force.

Analysis at the regional level further shows that, *ceteris paribus*, remittances improve the welfare of poor households and help them surmount the poverty threshold. Likewise, remittances also appear to contribute importantly to regional development through increased spending for consumption and investment in human capital and housing, and consequent multiplier effects. However, overall increases in regional incomes do not seem to benefit low income households as much as the upper income ones.

The apparent regressive distribution of remittances and their effects may be contributing to the persistence of high income inequality in the country, as reflected in a hardly changing Gini coefficient (e.g., 0.4605 in 2003 to 0.4580 in 2006). In turn, such inequality tends to dampen the poverty reduction effect of remittances. This is not inconsistent with the latest FIES which reveals that the national poverty incidence rose to 32% in 2006 from 30% in 2003.

On the whole, while international remittances are associated with beneficial effects at the household, regional and macro levels, they cannot be relied upon as a principal instrument for reducing poverty, redressing income inequality and, for that matter, fostering the country's long-run development. In the coming years, as the global labor market demands more professional and technical workers, and to the extent that Philippine labor supply can respond, remittances could result to a further worsening rather than an improvement in income inequality, not mention the deleterious long-term effects of the brain drain on the economy and society.

The government seems right in calling OFWs the country's "modern-day heroes" as migration exacts no mean sacrifices on them and their families. However, instead of lip service, the government should provide genuine service to OFWs, and there are a number of ways this could be done. For example, the government could do a much better job in shielding OFWs from unscrupulous recruiters and agents and assisting them forge fair contracts with their overseas employers.

Channelling remittance flows also requires further improvements, such as minimizing the inconvenience and financial costs of remitting. The fact that an appreciable share of total remittances continues to be sent informally suggests the transaction costs OFWs have to bear

in accessing the more formal channels. Moreover, the government should improve the climate for investing remittances in the regions.

While remittances seem to have greatly benefited the macro-economy in terms of its external current account, debt service, lower inflation and unemployment relief, the remittance bonanza has not been totally an unmixed blessing. For it seems to have allowed the government to skirt the difficult task of policy reform (including, *inter alia*, population policy) that would have improved the performance of the domestic economy, thereby reducing the need for overseas employment. Moreover, migration arguably causes brain drain that compromises the country's human capital requirements for its long-term development. The government would probably be well advised to rethink its policy on labor export – a phenomenon subject to geopolitical vicissitudes and global market swings.

Instead of relying on labor migration, the country would be better served if the government seriously pursued policy reforms to put the economy on a rapid and sustained growth path, as did South Korea and Thailand during their labor export phases in the 1970s and 1980s. A robust domestic economy would make working abroad an option – not a necessity – for Filipinos.

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## Appendix

### Table 1. Definitions of variables

| Variable | Definition | Source |
|---|---|---|
| dep_ratio | dependency ratio (pop 0-15/15+) | FIES |
| dep_ratio0 | lagged dependency ratio | FIES |
| educ | education spending per school age household member | FIES |
| employr | ratio of employed persons (old definition) to total household population | LFS, FIES |
| employshr | ratio of employed persons to household members | FIES |
| expoor | expenditure of the poor | FIES |
| grdp_pc | gross regional domestic product per capita (1985 prices) | NIA, FIES |
| hheduc | average numbers of years of education of household head | FIES |
| hspr0 | lagged high school participation rate of pop 13-16 years old | DECS |
| infmort0 | lagged infant mortality rate | NSO |
| medic | medical care spending per household member | FIES |
| noreminc | total household income net of remittance | FIES |
| povout1 | dummy (1 = graduates from poverty line due to remittance, 0 = otherwise) | FIES |
| povout2 | proportion of families who graduates from the poverty line due to remittance | FIES |
| provcls | provincial income classification | BLGF |
| remit | remittance (cash receipts, gifts, support, relief and other forms of assistance from abroad) | FIES |
| remit_pc | remittance per capita (1985 prices) | FIES |
| remitdm | dummy (1 = household with remittance, 0 = otherwise) | FIES |
| remitshr1 | share of remit to total household income | FIES |
| remitshr2 | ratio of remit_pc to GRDP_pc (1985 prices) | |
| roadd0 | lagged road density (concrete or asphalt roads/land area) | DPWH |
| saveshr | ratio of savings to total household income | FIES |
| hhinc | total household income | FIES |
| water0 | lagged proportion of households with potable water from faucets | FIES |

**Table 2. Descriptive statistics (cross-household regressions)**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| remit | 42094 | 13158.18 | 55082.41 | 0 | 2140000 |
| dep_ratio | 42094 | 0.7242433 | 0.7673312 | 0 | 1 |
| educ | 42094 | 1864.379 | 7061.685 | 0 | 559000 |
| employshr | 42094 | 0.3987329 | 0.2434558 | 0 | 1 |
| hheduc | 42094 | 7.547774 | 3.864332 | 0 | 16 |
| medic | 42094 | 691.043 | 6111.153 | 0 | 1006770 |
| noreminc | 42094 | 124600.2 | 241352.3 | 0 | 3.23E+07 |
| provcls | 42094 | 1.120183 | 0.5197497 | 1 | 5 |
| remitshr | 42094 | 0.0549274 | 0.1566658 | 0 | 1 |
| saveshr | 42094 | 0.0657146 | 0.2326739 | -4.955759 | 0.9507214 |
| hhinc | 42094 | 137758.4 | 250921.6 | 3086 | 3.23E+07 |

**Table 3. Descriptive statistics (cross-region regressions)**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| dep_ratio0 | 60 | 81.09567 | 10.04073 | 60.71 | 103.74 |
| drdp_pc | 60 | 10.70567 | 5.498901 | 3.99 | 30.258 |
| employr | 60 | 0.3865906 | 0.0366899 | 0.3216036 | 0.4902301 |
| hheduc | 60 | 6.095167 | 1.280317 | 3.62 | 9.83 |
| hspr0 | 60 | 59.583 | 14.84756 | 18.02 | 92.57 |
| infmort0 | 60 | 16.30017 | 5.14708 | 4.67 | 25.29 |
| povout2 | 60 | 0.0248601 | 0.0197332 | 0.0004254 | 0.0938789 |
| remit_pc | 60 | 0.5530909 | 0.380858 | 0.1219869 | 1.623024 |
| remitshr | 60 | 0.0540577 | 0.0312403 | 0.0139298 | 0.1498908 |
| roadd0 | 60 | 0.3671133 | 1.007903 | 0.0256022 | 4.1863 |
| water0 | 60 | 0.3813379 | 0.1805207 | 0.0858325 | 0.820852 |