The contribution of OFW remittances to income inequality: a decomposition analysis

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Abstract

The paper aims to determine whether remittances from overseas Filipino workers improve or worsen income inequality. Using decomposition equations, the paper divides total inequality into its four components, namely wages, entrepreneurial incomes, other income, and remittances from migrants. The decomposition exercise reveals that the contribution of remittances to overall income inequality depends on their share in total income, their distribution among the population, and their correlation with total income. Remittances are found to accrue mostly to higher-income classes, but they are seen to be gradually becoming less inequality-increasing over time. Therefore, policies that would aim to reduce income inequality should consider making migration-facilitating factors more accessible to those in the lower ends of the distribution, because remittances would only tend to contribute less to income inequality if the lower-income brackets were also able to migrate. Finally, further studies should look into the implications of the changes in inequality, especially with regard to welfare.

JEL classification: F22, D63

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1. Introduction

The Philippine government has always acknowledged the positive effect of overseas employment on the welfare of its citizens. Overseas Filipino workers' (OFW) remittances have contributed much to the country's GNP and foreign exchange earnings. In fact, remittances comprised, on the average, about 2 percent of GNP in the eighties, and that contribution has more than doubled to 4.8 percent in the nineties (Tan [2000]). These remittances are used to service the country's foreign debt, and the export of labor is thus seen as a means to achieve or sustain economic development. In addition, the Philippine government has established secure safety nets—the Philippine Overseas Employment Administration (POEA) and the Overseas

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Workers' Welfare Administration (OWWA)—to protect the interests of the millions of migrant Filipinos. These agencies have also lowered the transaction costs associated with overseas employment, effectively making migration an even more attractive and worthwhile option for its workforce as well.

Despite these obvious and substantial economic benefits, however, there is still reason to believe that the effects of overseas employment and remittances may not always be positive. Because migration entails both monetary and psychological costs, some workers in certain classes are already precluded from migrating. Even if costs are made lower through government assistance, these workers may still not be able to find jobs abroad, especially if they do not meet the required qualifications of age, education and experience, because overseas employment is basically demand-driven.

There is therefore reason to suspect that the benefits associated with migration, particularly earnings and remittances, may not be distributed evenly as well. Remittances may not always improve the distribution of income, and contrary to what many believe, they may even contribute to income inequality within the country.

The question of whether remittances from abroad serve to alleviate or worsen income inequality is of great interest, particularly because of the high level of inequality in the country. In addition, the country has faced massive outflows of workers in recent years. Considering that these workers sent in an amount almost equal to 5 percent of GNP in the 1990s, the overall effect of these remittances on household income distribution appears to be substantial and thus worth looking into.

There is also a dearth of empirical Philippine studies about the topic. Moreover, the few studies that exist focus only on the short-term effects of international remittances on income distribution, covering only one specific year or up to three years at most. And because their conclusions, as expected, differed from one another, the relationship between remittances and income distribution seemed unclear.

In this regard, this paper recognizes the importance of analyzing the said relationship over a much longer period of time. Migration is a dynamic phenomenon; its flows and structure change as other variables, such as the demand for and the skill levels of migrant workers, fluctuate over time. Hence, by looking at a longer time span, the paper aims to arrive at an observable trend that allows for a firmer, more realistic statement about the relationship between remittances and income distribution. This, in turn, will be of help in making policy recommendations. Furthermore, the paper hopes to contribute to the existing literature on remittances and income inequality in the Philippines.

2. Review of related literature

Previous studies have attempted to establish the relationship between labor migration and income inequality. But because few actually dealt with the long-term relationship between the two, focusing instead on a short or specific period of time in the subject economy's history, the results were often contrasting. Thus, if a general consensus about the effect of migrants' remittances on income inequality were to be reached, then further investigations should be able to address this and a few other methodological concerns.

First of all, much of the available existing literature is non-empirical and descriptive. For example, the studies organized by the International Labour Organization in the mid-eighties to examine the economic impact of overseas migration on labor-sending Asian countries (Amjad [1989]) are mostly theoretical, as they do not use regression equations or decomposition analyses to test their hypotheses. The study on South Korea, for instance, merely reports a highly positive correlation between migration and the income disparity of urban households: The Gini ratio in the 1970s when migration prevailed is higher than in the 1960s (Hyun [1989]). Although this supports the hypothesis that remittances exacerbate income inequality, mere correlation is still a weak basis on which to establish any sound conclusion.

There have been empirical studies, though, and many use some form of decomposition analysis because it considers all of a household's possible sources of income at any given point in time. By breaking households' income streams down into their different components, the studies by Adams and Alderman [1992] and later by Adams and He [1995] determine exactly what income sources contribute to the total income inequality in rural Pakistan, as well as how much these actually contribute to the observed inequality. It should be stressed, however, that the main objective of these two studies is only to analyze the determinants of poverty in Pakistan and not to assess the impact of international remittances on income inequality, a fact that reflects on their methodology. In their decomposition of the Gini coefficient, all transfers—international remittances, domestic or internal remittances, pensions, and payments of the government to the poor—are lumped together as one source of income; hence, the effect of international remittances on income inequality is not isolated. Other studies also lack this focus and emphasis on income inequality, such as that of Macaraig and Sarino's [1980], which focus on the direct effects of Philippine labor exports on welfare more than it does on income disparities.

A good decomposition model, then, would have to be able to isolate overseas remittances from the income stream in order to assess their impact, if any, on the income distribution. Stark, Taylor and Yitzhaki [1986] use such a model when they decompose the Gini coefficient to study the effect of international remittances on the income distribution of two rural Mexican villages with different migration

histories. The results are contrasting. Remittances are found to reduce inequality in the village that has a longer history of migration and hence a more open access to the United States labor markets, while inequality increases in the village where only a few households have experienced migration to the United States.

Rodriguez, in his 1998 article, applies the same model to the Philippines and finds that remittances actually worsen income inequality since only the wealthier and more educated are able to migrate. Considering that the Philippines has a history of labor migration that spans over three decades, this result seems to almost contradict the one by Stark, Taylor and Yitzhaki for the rural Mexican village, which also has a long history of migration.

The relationship between remittances and income inequality therefore remains unclear, at least based on the available literature. However, what these existing studies provide are a few emerging patterns that may be helpful in future analyses. The results of previous studies suggest that (a) migration tends to worsen income inequality if only a select few are able to migrate; and that (b) it tends to improve the distribution of income if even those from the lower income classes are able to find work abroad.

This paper takes all these into consideration, and now sets the context within which the analysis is to be made by discussing the theoretical framework used.

3. Theoretical framework

Migration is essentially a factor movement determined by employment opportunities and wage differentials. Migrant labor responds to whatever job opportunities open up abroad, but these tend to be limited because of various economic, political and even cultural barriers in the host or receiving economies. Labor exporters like the Philippines respond to these openings by having a flexible labor force. In this sense, migration is seen as a human capital problem of simply maximizing the returns to the education or training that the potential migrant has undertaken (Tan and Canlas [1989]).

Relative wage rates also determine the direction of labor flows, and indeed, this monetary benefit is often assumed to be the main motivation that encourages migration. More explicitly, when people compare incomes within a reference group—such as their local community, for example—the comparisons create psychic costs or benefits, or feelings that Stark and Bloom [1985] call "relative deprivation or relative satisfaction." Generally, a person who feels more relatively deprived is expected to have a stronger incentive to migrate than a person who feels less so. As particular individuals reap the benefits of migration, the relative deprivation perceived by non-migrants may change, thereby inducing them to migrate as well. Migration can thus be viewed alternatively as "a diffusion process [wherein] the

level of migration at any point in time is likely to be positively related to past migration" (Stark, Taylor and Yitzhaki [1986]).

Thus begins a country's migration history. When few households have just started establishing contacts at the receiving economy, the distribution of remittances—and possibly of income as well—is "necessarily unequal" (Stark, Taylor and Yitzhaki [1986]) because information about the working conditions abroad is scarce and costly, making migration, in a sense, a high-return yet high-risk investment. Moreover, the initial costs of migration all preclude those from the poorer sectors from leaving. Thus, the first households that will invest in a migration decision are likely to come from the upper rungs of the income distribution, since they are more financially capable to assume its costs and risks.

In addition, given that migration is demand-driven, any inequality in the distribution of income puts those in the lower-income classes at an even greater disadvantage since working abroad may require specific skills or a certain level of education and experience. Unless the low-income classes can afford to acquire these prerequisites, then migration may remain to be a valid option only for those in the high-income classes.

The impact of remittances in the overall household income distribution at this initial stage therefore depends firstly upon the magnitude of remittances in relation to income from other sources. If remittance-receiving households rely significantly on remittances to augment their income, then the distribution of remittances is expected to greatly contribute to the distribution of income. If, on the other hand, remittances represent only a small part of household incomes, then remittances will have a minimal effect on income distribution.

In addition, the impact of remittances on income inequality also depends on which income classes migrants originally come from. If migrants primarily come from the relatively well-off, then their remittances may worsen income inequality. However, if migrants also come from the lower classes, then remittances may contribute to greater income equality.

Over time, successful migrants provide valuable information to those left behind, raising the latter's propensity to migrate by lowering the uncertainty associated with migration. These would-be migrants, now feeling more relatively deprived, will want to migrate to shift the distribution of returns in their favor. Early migrants may even help make this possible by providing direct financial assistance to new migrants. Essentially, migration tends to create a "chain" that generates opportunities for later migration (Tan [2000]).

Therefore, the effect of remittances on income inequality over time depends on how information and migration-facilitating factors become diffused through the population. If access to these factors easily spreads across households, then receipt of remittances by those at the lower ends of the distribution is likely to

occur, possibly reducing the initially unfavorable effect of remittances on income inequality (Stark, Taylor and Yitzhaki [1986]).

Furthermore, the types of labor or skills demanded abroad may change over time, thereby influencing the income distribution in the sending countries. For instance, if the demand for labor abroad shifts towards those occupations that require lower skill and education levels, then migration opportunities are opened up for those in the lower income brackets, and remittances may then contribute to greater income equality.

Finally, if migration is indeed a diffusion process, then its impact must now be seen as stage-specific (Stark and Bloom [1985]), since the level of diffusion of migration-facilitating factors as well as the skills demanded by overseas employment vary at each point in a country's migration history. This should partly explain the divergence of views about the effect of remittances on income inequality, because the studies did not temper their conclusions with the fact that the observations were made at distinct and specific stages of the migration process. Looking at longer time spans also suggests that this impact may change over time. While remittances do seem to worsen income inequality at the start of the migration chain, they may gradually reduce inequality, especially if more people from the lower ranks of the distribution are enticed and are able to migrate.

4. Methodology

Taking this stage-specificity into consideration therefore requires not only looking at the context of a specified period of time, but dissecting the income stream of households over this period as well. Households receive income from various sources, such as wages and entrepreneurial activities. International remittances are just one possible income source for any period in time, and a decomposition analysis will isolate their impact on total income inequality. To account for migration as a stage-specific diffusion process, the decomposition will also be done repeatedly for several periods.

4.1 Decomposition analysis

Following Stark, Taylor and Yitzhaki [1991] and, more recently, Adams and He [1995], the source decomposition based on the Gini coefficient of total income, G, can be written as

$$G = 2\left[\operatorname{cov}(y,r)\right]/\mu, \tag{1}$$

where y is the series of total incomes, and r is the cumulative distribution of total incomes. The Gini coefficient of the ith source of income, G_i, can therefore be expressed as

$$G_i = 2\big[\text{cov}(y_i, r_i)\big]/\mu_i, \tag{2}$$

where y_i and r_i refer to the series of incomes from the ith source and their corresponding cumulative distributions, respectively. Since total income is the sum of all source incomes, the covariance between total income and its cumulative distribution can be expressed as the sum of covariances between each source income and cumulative distribution of total income. Equations (1) and (2) can then be used to express the total income Gini as a function of the source Ginis:

$$G = \Sigma S_i R_i G_i, \tag{3}$$

where S_i is the share of each source of income to total income, or

$$S_i = \mu_i/\mu \tag{4}$$

and R is the Gini correlation ratio, expressed as

$$R_i = \text{cov}(y_i, r)/\text{cov}(y_i, r_i) \tag{5}$$

$$= \frac{\text{covariance between source income amount and cumulative distribution of total income}}{\text{covariance between source income amount and cumulative distribution of source income}}$$

The Gini correlation ratio, R, ranges between +1 and −1. An income source is an increasing (decreasing) function of total income as R approaches +1 (−1). When the income source is a constant, R equals zero, implying that that income source's share of the Gini is zero.

The decomposition corresponding to the Gini coefficient can therefore be expressed by the following terms:

$$\Sigma w_i g_i = 1; \; w_i = \mu_i/\mu; \; g_i = R_i\left(G_i/G\right) \tag{6}$$

where $w_i g_i$ is the factor inequality weight of the ith source in overall inequality, and g_i is the relative concentration coefficient of the ith source in overall inequality.

Assuming that additional increments of an income source are distributed in the same manner as the original units, an income source can be defined as inequality-increasing or inequality-decreasing on the basis of whether additional shares of income from that source lead to an increase or decrease in overall income inequality. Based on Equation (6), it follows that the ith income source is inequality-increasing or inequality-decreasing according to whether g_i or the relative concentration coefficient is greater than or less than unity.

4.2 The data

Data for constructing the decomposed Gini indices are taken from the various Family Income and Expenditure Survey (FIES) rounds from 1985 to 2000, with each round conducted every three years. The FIES is an integrated survey of households that seeks to gather data on family income and expenditures, determine the degree of inequality among families, and provide benchmark information for the estimation of the consumer price index. While the FIES for 1961, 1965, and 1971 are also available, they are excluded from the analysis since their unit-record data are not available for the decomposition.

Four components of household income, and therefore of income inequality, are considered: wages, entrepreneurial income, other income, and remittances from migrants or income from abroad. Wages include all forms of compensation received by family members who are either regular or occasional workers in agricultural and nonagricultural industries. Entrepreneurial income includes earnings from farming, trading, manufacturing and other entrepreneurial activities engaged in by any member of the family as operator or as self-employed. Other income includes the family's net share of crops produced, rental value of owner-occupied dwelling units, and other family sustenance activities. Finally, income from abroad includes cash receipts from family members working abroad as contract workers, as well as gifts and other forms of assistance from other migrants, particularly family members with permanent residence abroad (or emigrants).

However, because some households, especially the rich ones, underreport their incomes, it is possible that income data from the FIES are understated (Rodriguez [1998]). As a consequence, conclusions about the contribution of international remittances to total income inequality may reflect this downward bias; the magnitude of income inequality may be underestimated.

5. Presentation of results and analysis

As evident in Equation (3), the decomposition exercise outlined above can illustrate how (a) the magnitude of remittances to total income, (b) the unequal distribution of remittances, and (c) the correlation of remittances with total income all contribute to the observed inequality. This section sets the context of the analysis against the theoretical framework by describing the changes and trends in the decomposition variables, then proceeds to discuss the contribution of remittances to overall income inequality.

5.1 The migration chain

The Philippines has had a fairly long history of migration, which dates back to American colonial times (Sto. Tomas [1984]). With increasing demand for migrant labor and with some encouragement from the Philippine government, migration

has gradually become a worthwhile option for Filipino workers over the years. This supports the theory that migration is a diffusion process wherein the benefits of migration induce non-migrants to migrate in the future.

Because of this diffusion process, one may expect to see a migration chain, i.e., a gradual rise in the number of deployed workers over time. This phenomenon can be observed from Table 1, which shows that the number of deployed OFWs grows as time passes. Assuming that some of these new migrants remit some fraction of their earnings back home like permanent migrants and contract workers do, one may infer that this migration chain logically—although not always necessarily—results in more households receiving income from abroad, as Table 2 indicates.

Table 1. Deployed overseas Filipino workers
and total remittances from overseas Filipinos, 1984-2000

Year	Deployed OFWs*	Total Remittances (US$ Million)
1984	350,982	602.9
1985	372,784	687.2
1986	378,214	680.4
1987	449,271	791.9
1988	471,030	856.8
1989	458,626	973.0
1990	446,095	1181.1
1991	615,019	1500.3
1992	686,457	1769.5
1993	696,630	2229.6
1994	719,602	3008.1
1995	654,022	3868.3
1996	660,122	4306.6
1997	747,696	5741.8
1998	831,643	4926.0
1999	837,020	6794.6
2000	841,628	6050.4

Source: Yearbook of labor statistics, 2000. Department of Labor and Employment

* Land-based and Sea-based OFWs

Table 2. Number of households receiving income from abroad

	1985	1988	1991	1994	1997	2000
Urban Philippines	343,909	332,890	493,600	557,121	523,704	681,266
Rural Philippines	224,615	273,805	281,400	304,404	357,558	425,239
All Philippines	568,524	606,695	775,000	861,525	881,262	1,106,505
Urban/Rural	1.5	1.2	1.8	1.8	1.5	1.6

Source: FIES, various years. National Statistics Office

The growing numbers of deployed OFWs may imply that the risks associated with migration have diminished, possibly because the information about the working conditions and successes experienced by earlier migrants has accumulated sufficiently to become public information (Tan [2000]). However, this would not necessarily result in an improvement in the labor mobility of those in the lower ends of the income distribution in the sense that they have gained more access to education or skill training. What can be implied from the statistics, especially from Table 2, is that the opportunities for migration have not been equally distributed among urban and rural households. In fact, the urban-rural ratios in Table 2 show that remittance recipients in urban areas have continued to outnumber those in rural areas, and that they may even continue to do so since the ratios show hardly any decline. All in all, urban households are more able to pursue jobs abroad, as various other studies have already claimed and proven (e.g., Rodriguez and Horton [1995]; Tan [1991]).

To explain why more migrants typically come from urban households, one reason found is that urban households are wealthier (Rodriguez and Horton [1995]), which Tables 3.1 and 3.2 confirm. With higher incomes, urban households can more easily assume the initial costs of migration, such as those of acquiring the education required by overseas jobs.

Because of differences in wealth, urban and rural households are also presumed to differ in education and skill levels (although the causation between wealth and education may have worked the other way as well). In addition, urban households face lower transaction and placement costs when it comes to migration since placement offices are usually located in urban centers. Information about overseas employment openings and conditions is also more difficult to access from rural areas because of the limited availability of media, especially access to the Internet. Because of these, Tan [1991] surmises that workers in rural areas probably resettle into urban centers first before migrating to foreign destinations. This hypothesis is not entirely unexpected, given that wages are also higher in urban areas, since the

theory of human capital does predict that workers tend to move to where wages are higher and where employment is available (Ehrenberg [2000]).

Given that urban households generally have better opportunities to migrate than rural households, an analysis of the distributional impact of remittances as migration opportunities spread across the population can therefore be carried out by separately considering the effect of overseas remittances on urban and on rural income inequality. Such an analysis is actually a variation of the one done by Stark, Taylor and Yitzhaki [1986] on the income distribution of two Mexican villages, since the villages also differ in terms of their access to foreign labor markets. Comparing the composition of urban and rural income inequalities will be analogous to considering two contrasting conditions where migration opportunities in one scenario are relatively more diffused than in the other.

Table 3.1. Average family income (in pesos), urban–rural

	1985	1988	1991	1994	1997	2000
All Philippines	31,052	40,408	65,186	83,161	123,168	144,039
Urban Philippines	46,127	60,330	89,571	113,121	178,121	204,977
Rural Philippines	21,875	28,284	41,199	53,483	73,319	85,373
Urban/Rural	2.11	2.13	2.17	2.12	2.43	2.40

Source: FIES, various years. National Statistics Office

Table 3.2. Average family expenditure (in pesos), urban–rural

	1985	1988	1991	1994	1997	2000
All Philippines	26,865	32,521	51,991	67,661	99,537	118,002
Urban Philippines	39,134	47,299	70,551	91,115	140,955	164,794
Rural Philippines	19,397	23,529	33,733	44,427	61,966	72,953
Urban/Rural	2.02	2.01	2.09	2.05	2.27	2.26

Source: FIES, various years. National Statistics Office

5.2 The composition of income inequality

The theoretical framework argues that the impact of migrants' remittances upon income inequality tends to become more favorable (or less unfavorable) as migration opportunities are diffused through the population over time. When viewed in this context, the results of the decomposition exercise seem to support the argument.

5.2.1 Shares of income sources in total income (S_i)

Table 4 shows the shares of the four income sources in total income for 1985–2000. Paid wages have been the most important income source in urban areas, representing about 47 percent of total household incomes. In the rural areas, however, entrepreneurial income is a more significant source of income, averaging about 38 percent as against only 35 percent for paid wages. This is so because of a higher incidence of self-employment in the rural areas (Rodriguez [1998]). Nevertheless, paid wages exhibit an increasing trend for the entire country, while entrepreneurial income shows the opposite. Other sources of income consistently represent just about a fifth of total incomes for the entire Philippines.

Remittances, on the other hand, represent less than 10 percent of total incomes, but it appears to be a more important income source in the urban areas than in rural areas. Moreover, the share of remittance income in total income does not exhibit a clear trend for the entire Philippines, which Figure 1 illustrates. This erratic trend may be largely due to movements in the shares of the other domestic income sources. The share of remittances in total income has dropped, for instance, because the shares of domestic incomes like wages have increased.

Furthermore, that the share of remittances is higher for urban households is expected since migration is a more practicable or possible employment option in urban areas. This, in turn, may ultimately be due to the fact that migration-facilitating factors, such as access to information, are more available and relatively more diffused in urban areas.

In addition, as hypothesized by Stark and Taylor [1991], the relatively deprived—in this case, the rural households—are more inclined to migrate to improve their living conditions. We can also expect the same to happen in the Philippines, since rural households have lower average incomes and limited access to education and media. The decomposition results as shown in Table 4, however, do not necessarily suggest that rural workers have not migrated. It is highly possible that rural households migrate to the cities first, where information about, and placement for, overseas jobs are more accessible. With rural-to-urban migration, the otherwise rural incomes will be considered urban incomes, and this is necessarily reflected in higher incomes—and higher income shares—for urban areas. It should be stressed, though, that this is just a hypothesis, and thus needs to be tested further.

On the other hand, the shares of remittances in total household incomes do not exhibit a clear-cut trend, both for urban and rural Philippines. This, however, does not mean that the irregular trend in the share of remittances has little or no impact on the contribution of remittances to total income inequality, as will be seen later.

Table 4. Shares of income sources in total income*

Income Source	1985	1988	1991	1994	1997	2000
All Philippines						
Wages	0.3825	0.4336	0.4300	0.4518	0.4647	0.4586
Entrepreneurial income	0.2836	0.2822	0.2844	0.2530	0.2618	0.2444
Other income	0.2513	0.2139	0.2018	0.2197	0.2056	0.2109
Remittances from migrants	0.0826	0.0703	0.0838	0.0755	0.0680	0.0861
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Urban Philippines						
Wages	0.4213	0.4671	0.4585	0.4756	0.4939	0.4843
Entrepreneurial income	0.2247	0.2328	0.2476	0.2173	0.2287	0.2121
Other income	0.2625	0.2228	0.2036	0.2266	0.2058	0.2119
Remittances from migrants	0.0915	0.0773	0.0903	0.0804	0.0716	0.0916
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Rural Philippines						
Wages	0.3044	0.3627	0.3356	0.3707	0.3732	0.3776
Entrepreneurial income	0.4023	0.3867	0.4063	0.3746	0.3654	0.3459
Other income	0.2286	0.1953	0.1960	0.1963	0.2047	0.2077
Remittances from migrants	0.0646	0.0553	0.0621	0.0585	0.0567	0.0688
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

*NOTE: Figures may not add up to totals correctly due to rounding.

5.2.2 Gini coefficients (G_i)

The contribution of an income source to overall income inequality does not rely solely on its share in total incomes. It also depends on the distribution of income from that particular source.

Table 5 summarizes the inequality in total incomes and within the four income sources. Total urban income is more unevenly distributed than total rural incomes but income distribution over time has improved in urban areas while it has worsened in rural areas. For the entire Philippines, it seems that income distribution has generally improved.

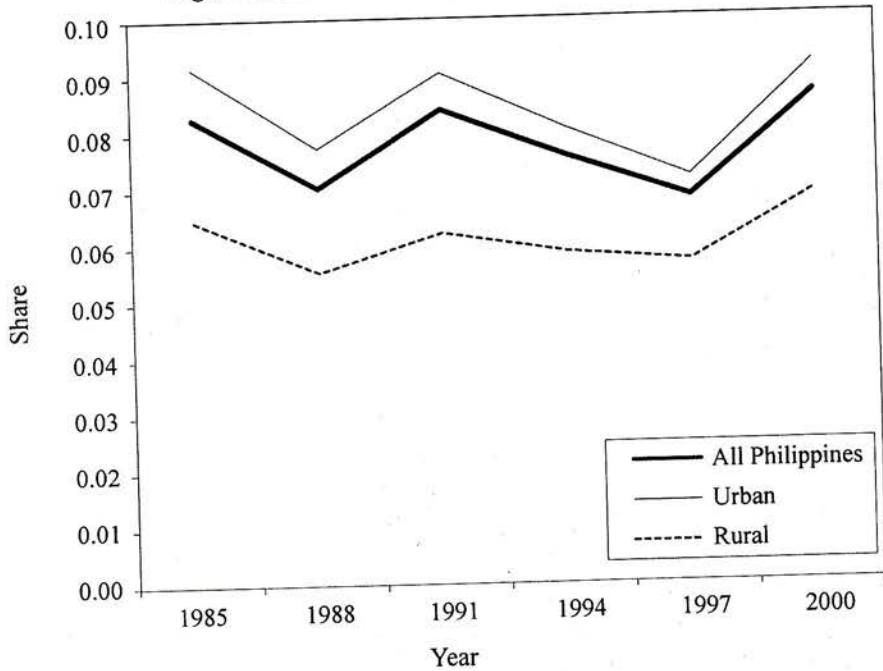**Figure 1. Share of Remittances in Total Income.**

Table 5 also shows that of the four income sources, remittance income is the least evenly distributed with a Gini coefficient of about 0.94 for the entire Philippines. The inequality appears to be even more acute in the countryside: The rural Gini coefficients have an average of about 0.96, while the urban Gini coefficients have an average of about 0.92. Moreover, the inequality in remittance incomes has remained relatively unchanged. The remittance Gini coefficient for urban areas, for example, remains almost constant at 0.92, although the rural coefficients clearly show some slight deviations.

Table 5 further shows that the distribution of remittance income is very skewed, which means that very few Philippine households actually receive remittance income. In fact, less than 10 percent of Philippine households receive some income from abroad. Moreover, the Gini coefficients for rural Philippines are higher than for urban Philippines because no more than about 5.5 percent of rural households receive remittances, whereas as much as 9.2 percent of urban households receive income from abroad. One may also imply from the figures in Table 6 below that the change in the Gini coefficient of remittance income is negligible since the changes in the proportion of remittance-receiving households within populations are small.

Table 5. Gini coefficients

Income Source	1985	1988	1991	1994	1997	2000
All Philippines						
Wages	0.6986	0.6941	0.6809	0.6832	0.6666	0.6725
Entrepreneurial income	0.7066	0.7405	0.7376	0.7258	0.7357	0.7121
Other income	0.6319	0.6591	0.6386	0.6510	0.6142	0.5961
Remittances from migrants	0.9463	0.9426	0.9359	0.9262	0.9348	0.9311
Total Income	0.4970	0.5080	0.4998	0.5012	0.4841	0.4769
Urban Philippines						
Wages	0.6372	0.6304	0.6252	0.6369	0.6012	0.6134
Entrepreneurial income	0.7946	0.8253	0.8002	0.7867	0.7948	0.7673
Other income	0.6750	0.7187	0.6628	0.6719	0.6253	0.6065
Remittances from migrants	0.9173	0.9187	0.9187	0.9064	0.9197	0.9151
Total Income	0.5052	0.5153	0.4927	0.4963	0.4621	0.4536
Rural Philippines						
Wages	0.7060	0.7055	0.7151	0.7028	0.7203	0.7181
Entrepreneurial income	0.5891	0.6101	0.5886	0.5840	0.5963	0.5849
Other income	0.4695	0.4642	0.4942	0.2847	0.5115	0.4849
Remittances from migrants	0.9715	0.9615	0.9588	0.9529	0.9542	0.9515
Total Income	0.3878	0.3910	0.3999	0.3921	0.4187	0.4115

One may recall that the urban-rural ratios in Table 2 indicate that remittance recipients in urban areas continue to outnumber their rural counterparts. The urban-rural ratios in Table 6 show a more complete picture, though. The ratios show an evident downward trend, which implies that of the total number of workers deployed for overseas employment, the proportion that comes from rural areas seems to have increased over the years. Migration thus seems to have gradually become a valid labor option for the relatively poorer rural areas as well. Before discussing its impact on income distribution, though, the paper considers the last determinant of an income source's contribution to income inequality, or the Gini correlation ratios.

Table 6. Percent of households receiving income from abroad

	1985	1988	1991	1994	1997	2000
All Philippines	5.8	5.8	6.5	6.8	6.2	7.2
Urban Philippines	9.2	8.4	8.3	8.8	7.8	9.1
Rural Philippines	3.7	4.2	4.7	4.8	4.8	5.5
Urban/Rural	2.5	2.0	1.8	1.8	1.6	1.7

Source: Authors' estimates based on NSO-FIES, various years

5.2.3 Gini correlation ratios (R_i)

According to Equation (3), an income source's share in total incomes and its distribution among the population reflect only a part of its contribution to total income inequality. The contribution also depends on where the recipients of that income source are situated in the income spectrum.

Table 7 reports the Gini correlation ratios between income sources and total income. The significance of these Gini correlation ratios depends on the distribution of the income source, which its Gini coefficient indicates. Given a very unequal distribution of an income source, higher Gini correlation ratios imply that more households at the upper ends of the distribution receive income from that income source. Lower correlation ratios, on the other hand, imply that even households at the lower ranks of the income distribution receive income from that source.

According to Table 7, all income categories are positively correlated with total income. In the case of remittances, the correlation ratios indicate that inequality in remittance income is positively and highly correlated with overall income inequality, and even more so for rural areas, where remittances are more unevenly distributed, than in urban areas. This implies that in rural areas, primarily households from the higher classes receive remittances from migrants. For urban areas, though, remittances also accrue mostly to the upper classes (since the ratios all exceed 0.5), but to a lesser degree.

Although remittances accrue mostly to the upper classes for the Philippines as a whole, the ratios shown in Table 7 illustrate a downward trend for the entire country. Figure 2 illustrates this trend, which suggests that the proportion of lower-class households receiving income from abroad has increased over time. This lends further support to the observation that an increasing proportion of migrants has come from rural households, especially since rural households have been shown to be less wealthy than urban households and at a disadvantage when it comes to migration opportunities.

Table 7. Gini correlation ratios

Income Source	1985	1988	1991	1994	1997	2000
All Philippines						
Wages	0.7383	0.7736	0.7688	0.7916	0.7896	0.7890
Entrepreneurial income	0.5497	0.5631	0.5643	0.5171	0.5300	0.4850
Other income	0.7980	0.7677	0.7553	0.7842	0.7446	0.7234
Remittances from migrants	0.8046	0.7440	0.7519	0.7118	0.6834	0.7266
Urban Philippines						
Wages	0.7206	0.7474	0.7427	0.7705	0.7529	0.7539
Entrepreneurial income	0.6022	0.6297	0.6033	0.5563	0.5682	0.5059
Other income	0.8159	0.7961	0.7605	0.7925	0.7363	0.7108
Remittances from migrants	0.7112	0.6587	0.6954	0.6469	0.6146	0.6675
Rural Philippines						
Wages	0.6055	0.6764	0.6648	0.6990	0.7313	0.7363
Entrepreneurial income	0.5727	0.5362	0.5684	0.5137	0.5296	0.4985
Other income	0.6340	0.5577	0.5969	0.7998	0.6365	0.5995
Remittances from migrants	0.8590	0.7683	0.7827	0.7490	0.7402	0.7740

Migration theory actually predicts these results. Remittances primarily accrue to those in the upper ranks of the income spectrum because migration entails huge costs, both monetary and psychic. Hence, although the less-privileged are more inclined to migrate, they are more constrained from doing so.

In addition, the lower urban ratios, when compared with the higher rural values, further imply that as migration opportunities become more diffused, more people from the lower ranks are able to migrate and benefit from remittance income. This should explain the observed downward trend as well, because as more people from the lower ranks seize job opportunities abroad, the Gini correlation ratio drops.

5.3 The contribution of remittances to total income inequality

The context is now set for describing the contribution of remittances to total income inequality. Two other variables can be derived from the three decomposition variables to describe the contribution of each income source to overall income inequality. One variable is an exact measure of the contribution of an income source

to overall income inequality, expressed as a percentage of the total-income Gini. The other is the relative concentration coefficient, which tells exactly if an income source increases or decreases total income inequality.

5.3.1 Percentage contributions to the Gini

Table 8 reports the percentage contributions of each income source to the total Gini, which depend on the magnitudes of all the three decomposition variables. The table reports that paid wages make the biggest contribution to total income inequality for the entire country, and that their contribution even increases over time. This result is to be expected because of the trend in the share of paid wages in total income: Wages are the most significant income source, especially in urban areas, and their share in total income for the entire country also demonstrates an upward trend.

On the other hand, although entrepreneurial incomes make up the bulk of rural incomes, their contribution to rural income inequality still falls below that of wages, and it exhibits a downward trend. This is so because even in rural areas, the share of entrepreneurial income declines over time, while that of wages rise. Moreover, for rural areas, entrepreneurial income is less correlated with total income than wages are, as shown by the higher Gini correlation coefficients for wages. Rural entrepreneurial incomes are also more evenly distributed than rural wages, as they have lower Gini coefficients.
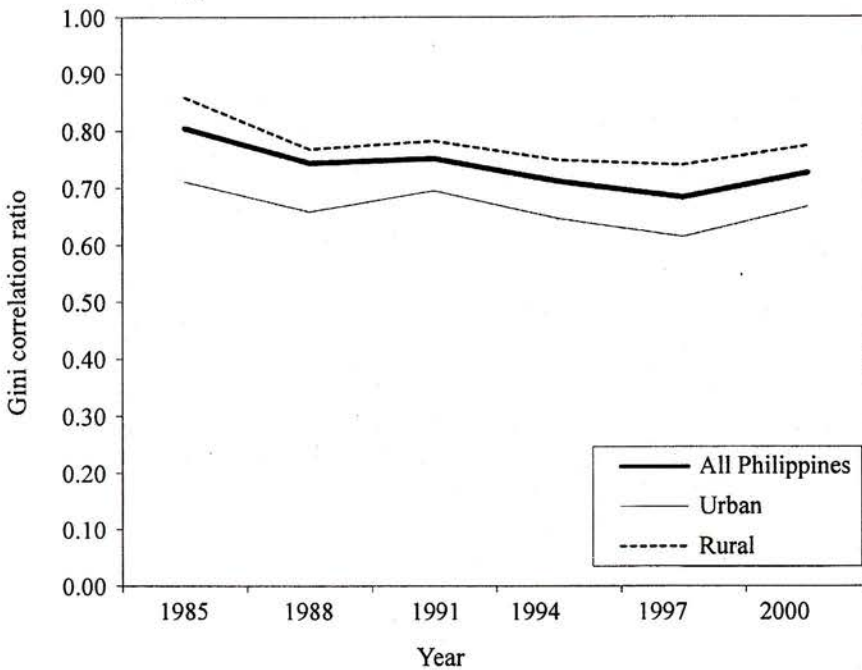
Figure 2. Gini Correlation Ratio of Remittances.

Table 8. Contributions of income sources to the Gini (in percent)*

Income Source	1985	1988	1991	1994	1997	2000
All Philippines						
Wages	39.69	45.82	45.04	48.75	50.52	51.02
Entrepreneurial income	22.16	23.17	23.68	18.95	21.09	17.70
Other income	25.50	21.31	19.48	22.38	19.42	19.07
Remittances from migrants	12.65	9.70	11.79	9.92	8.97	12.21
Total	100.00	100.00	100.00	100.00	100.00	100.00
Urban Philippines						
Wages	38.29	42.71	43.20	47.03	48.38	49.37
Entrepreneurial income	21.28	23.48	24.27	19.16	22.35	18.15
Other income	28.62	24.73	20.83	24.31	20.51	20.14
Remittances from migrants	11.82	9.08	11.71	9.50	8.76	12.34
Total	100.00	100.00	100.00	100.00	100.00	100.00
Rural Philippines						
Wages	33.56	44.27	39.90	46.44	46.96	48.51
Entrepreneurial income	35.00	32.35	33.99	28.66	27.56	24.51
Other income	17.55	12.93	14.46	11.40	15.92	14.67
Remittances from migrants	13.90	10.46	11.66	10.65	9.57	12.31
Total	100.00	100.00	100.00	100.00	100.00	100.00

* Contributions are computed as $[(S_i \times R_i \times G_i)/G] \times 100$, where G is the total-income Gini.

Note: Figures may not add up to totals correctly due to rounding.

Remittances have made the smallest contribution to total income inequality, even if they are the most unevenly distributed income source. Figure 3 helps describe this contribution of international remittances to total income inequality. The shapes of the lines closely resemble those in Figure 1, which show that the share of remittances in total incomes has fluctuated over the time frame considered. This emphasizes the fact that an income source's share in total income determines its percentage contribution to total income inequality, and that the two generally move together. Remittances have thus made the smallest contribution to overall inequality because they have always had the smallest share in total income.

Figure 3. Contribution of Remittances to Total Income Inequality (in Percent)
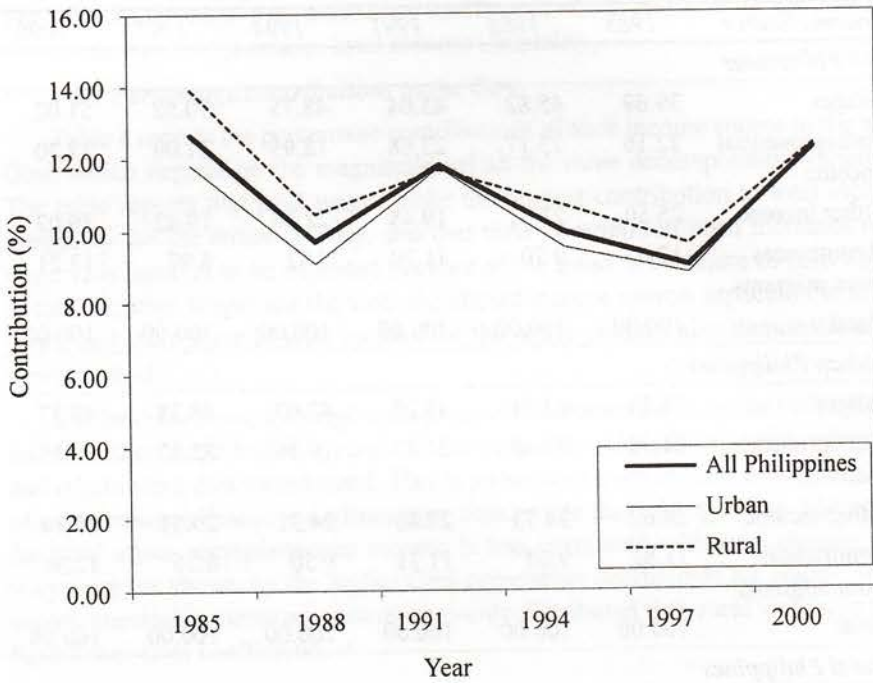
There is one important difference between Figures 1 and 3, though. While the plot line for urban Philippines appears above that for rural Philippines in Figure 1, one can observe the opposite in Figure 3. This implies that the contribution of an income source to total income inequality does not rely solely on that income source's share in total income, as the decomposition equations above actually assert.

As Figure 3 shows, migrants' remittances contribute more to rural inequality than they do to urban inequality, even if remittances make up a smaller part of rural incomes, because remittances are more unevenly distributed in rural areas than they are in urban areas. This is reflected in a more evident, more-than-proportional increase in inequality in rural areas: Remittances from abroad represent, on the average, only about 6 percent of rural incomes, but they contribute an average of about 11.4 percent to rural income inequality. On the other hand, remittances from abroad represent about 8 percent of urban incomes, but they contribute only about 10.5 percent to urban income inequality.

Still, these percentage contributions do not seem to fully answer whether remittances—or any income source for that matter—serve to increase or decrease income inequality. Since the contributions of all income sources are positive, it may appear at first glance that all income sources increase inequality. While the shares may become negative because the Gini correlation ratio can acquire a negative

value, this possibility seems unlikely given that the Gini correlation ratios of all four income sources have been consistently positive.

In addition, it is difficult to establish a discernible trend based on these percentage contributions alone. Figures 1 and 3 seem to show that the contribution of remittances over time depends solely on their share in total incomes; the contribution of remittances to the total-income Gini fluctuates just because their share in total incomes also fluctuates. The plot lines in Figure 3 also cannot account for the declining trend in the Gini correlation ratios (and the theoretical implications thereof), which, as Equation (3) states, should also explain the contribution of remittances to the overall inequality.

5.3.2 Relative concentration coefficients (g_i)

To describe more accurately the contribution of remittances to total income inequality over time, one must therefore use another measure or variable. Derived from Equation (6) above, the relative concentration coefficients of each income source are presented in Table 9. An income source either increases or decreases income inequality, depending on whether the coefficient is greater or less than unity.

Interestingly, paid wages appear to increase inequality, especially for rural areas. The coefficients also show an increasing trend, with values again peaking in 2000 for the entire country. This trend becomes even more apparent for urban Philippines, where paid wages account for the bulk of household incomes: Wages become inequality-increasing only in 2000 after being inequality-decreasing since 1985.

In the case of entrepreneurial income, it has always been inequality-decreasing, especially for rural Philippines where it accounts for the biggest share in total income. The coefficients even exhibit a decreasing trend, which implies that entrepreneurial income actually contributes to greater income equality over time.

With values consistently greater than 1, remittances from migrants are undoubtedly inequality-increasing. Furthermore, the fact that the rural coefficients are larger than the urban values implies that remittances worsen rural inequality more than they do urban income inequality—an observation which is consistent with the calculated percentage contributions to the Gini.

Unlike the computed values for the percentage contribution of remittances, however, the relative concentration coefficients of remittances reveal a more perceptible trend when graphed, as seen in Figure 4. The coefficients for migrants' remittances exhibit an obvious declining trend, especially for rural areas and the Philippines as a whole; the urban trend is a bit more erratic, although later years generally yield values lower than the 1985 level. This downward tendency implies that, over time, remittances have gradually become less inequality-increasing, as predicted by theory.

Table 9. Relative Concentration Coefficients*

Income Source	1985	1988	1991	1994	1997	2000
All Philippines						
Wages	1.0377	1.0569	1.0474	1.0790	1.0873	1.1125
Entrepreneurial income	0.7814	0.8208	0.8328	0.7488	0.8054	0.7242
Other income	1.0146	0.9960	0.9652	1.0186	0.9447	0.9041
Remittances from migrants	1.5319	1.3805	1.4079	1.3152	1.3198	1.4185
Urban Philippines						
Wages	0.9089	0.9144	0.9423	0.9887	0.9796	1.0193
Entrepreneurial income	0.9471	1.0084	0.9798	0.8817	0.9774	0.8558
Other income	1.0900	1.1102	1.0230	1.0728	0.9964	0.9503
Remittances from migrants	1.2913	1.1744	1.2967	1.1813	1.2235	1.3466
Rural Philippines						
Wages	1.1023	1.2205	1.1887	1.2528	1.2581	1.2847
Entrepreneurial income	0.8698	0.8366	0.8366	0.7652	0.7542	0.7084
Other income	0.7675	0.6620	0.7377	0.5807	0.7777	0.7065
Remittances from migrants	2.1520	1.8892	1.8767	1.8204	1.6868	1.7897

* Relative Concentration Coefficient = $g_i = R_i \times (G_i/G)$, where G is the total-income Gini.

Therefore, if the relative concentration coefficients reported in Table 9 are as predicted, then it must be the case that the low-income groups have had greater access to migration-facilitating factors such that an increasing proportion of migrants have now come from their ranks. For instance, more placement centers may have been established in rural areas, although statistics to support this claim are not available. In any case, the conclusion still seems to be supported by the declining urban-rural ratio in Table 6 above, as well as by the downward trend in the Gini correlation ratio of remittances in Figure 2—all of which show that low-income groups have also benefited from remittances. This result would actually agree with those of other studies on Asian countries, especially the one on Sri Lanka (Rodrigo and Jayatissa [1989]), which suggested that remittances would tend to improve the income distribution if migrants also came from low-income households.

Figure 4. Relative Concentration Coefficient of Remittances
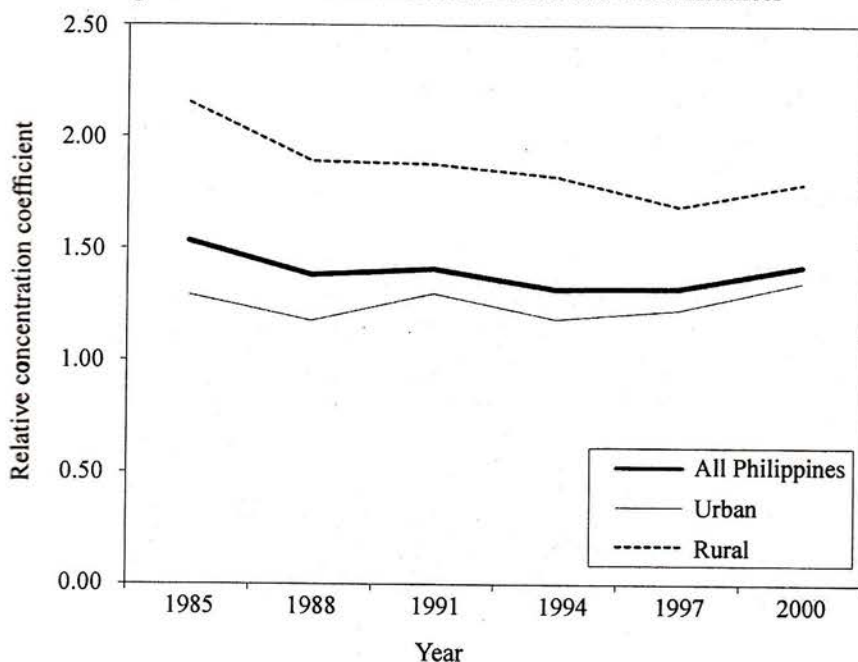
Moreover, the conclusion that remittances have gradually become less inequality-increasing over time must now be seen in light of the fact that migration is a demand-driven phenomenon and of the view that its impact on income distribution is stage-specific. The time period covered in the paper was actually a stage in the migration history of the Philippines when the prevailing demand for overseas workers had just shifted from the professional fields in the sixties and seventies to the relatively low-skilled service sector in the eighties. In fact, the 1996 Survey of Overseas Filipino Workers by the NSO claimed that the service sector "[had] been the sector with the most demand as early as 1990"—a trend that has continued well into the nineties, as Table 10 indicates.

Hence, it also seems plausible that remittances have become less inequality-increasing over the period considered because the Philippines has faced a demand for migrant labor that favors the relatively low-skilled occupations and the low-income classes. More importantly, if the Philippines were to face the same demand in the future, then OFW remittances may be expected to become even less inequality-increasing (or more inequality-decreasing).

The relative concentration coefficients seem to show further that of the three decomposition variables, the positions of remittance-receiving households in the income distribution—as manifested in the Gini correlation ratios—greatly determine whether remittances will alleviate or worsen income inequality. This is

so because over time, fluctuations in the share of remittances in total income do not explicitly mean that remittances have actually improved or exacerbated income inequality. The distribution of remittance incomes has also hardly changed, even though migration-facilitating factors have presumably become diffused through the population. Finally, the changes in the demand for certain types of overseas workers are more likely to affect the income distribution by determining from which income classes migrants will most likely come, which ultimately affects the Gini correlation ratios accordingly.

**Table 10. Distribution of overseas Filipino workers,
by major occupation, 1995–2000 (in percent)**

Major Occupation Group	1995	1996	1997	1998	1999	2000
Professional, technical and related work	10.8	12.0	11.0	11.8	14.7	14.0
Administrative, executive and managerial	0.3	0.4	0.4	0.6	1	0.7
Clerical and related workers	2.9	3.4	3.0	4.3	3.3	4.3
Sales workers	1.7	1.0	1.6	1.5	1.8	1.7
Service workers	41.4	40.1	40.2	41.9	39.2	38.0
Agricultural, animal husbandry and forestry workers, fishermen and hunters	1.3	1.1	0.6	0.3	0.4	0.8
Production and related workers, transport equipment operators and laborers	41.0	41.1	43.2	39.3	39.6	40.1
Occupation not adequately described	0.8	0.8	0.2	0.2	0.1	0.3
Total	100	100	100	100	100	100

Source: Authors' estimates based on NSO-Survey of Overseas Filipino Workers, various years.

Note: Figures may not add up to totals correctly due to rounding. Figures for years prior to1995 were unavailable.

6. Conclusions and recommendations

In summary, decomposing total income inequality into its sources revealed that remittances from international migrants contributed to income inequality. Remittances appeared to increase inequality—and more so for rural than urban

areas. However, remittances had become less inequality-increasing over time, as predicted by the theory of stage-specific migration and income distribution.

The paper likewise showed how the magnitude of remittances' contribution to total inequality in the Philippines was determined by the fluctuating share of remittances in total income, the highly unequal distribution of remittance incomes, as well as the rank or position of remittance-receiving households in the income distribution. Of these three determinants, however, the income class from which migrants came appeared to be the most significant element in explaining whether remittances increased or decreased total income inequality over time.

6.1 Policy recommendations

Therefore, if the goal of policy were to reduce income inequality, then policymakers should best focus on how the income classes from which migrants came would contribute to overall inequality. More explicitly, policies should aim to allow those in the low-income brackets greater degrees of access to migration-facilitating factors, for remittances would only reduce inequality if the less-privileged classes were also able to migrate. An example of such a policy would include the establishment of more placement centers, especially in rural areas. This would lower the transaction and placement costs faced by rural would-be migrants, since it would reduce the need to travel to urban centers.

On the other hand, it would seem imprudent to continue encouraging overseas employment without giving due consideration to the long-term effects of labor outflows, especially if migrants were to continue coming from urban areas and from higher-income households. Or, if only the more-skilled workers were able to migrate, an active deployment of workers for overseas employment might result in brain drain, which had been "often viewed as increasing inequality in the source [countries]" (Davies and Wooton [1992]). Most importantly, the migration of workers would seem very vulnerable to unanticipated changes in the skills and occupations demanded abroad. In this regard, policymakers might want to focus on fostering conditions that would either create domestic employment or make working domestically more attractive relative to working abroad, with a long-term goal of making the productivity of labor rise. This approach could take many forms, but two could be cited as pertinent.

One way to increase the productivity of labor would be through the inflow of capital or investments, whether foreign or domestic. The inflow of capital would, at least in theory, increase the productivity of labor because it would increase its demand, and hence domestic wages. This should address the issues of how to make skilled labor stay and how to absorb the excess supply of labor if the demand for migrant labor slackens. Considering that wages appear to have a growing importance to households and an increasing contribution to inequality over the years, though, the crafting of policies that aim to stimulate investments should carefully consider the

implications for the wage structure. In the final analysis, too, domestic investments should be encouraged primarily, for foreign direct investments would most probably account for only a small part of total investments. In any case, policies should be geared towards establishing and sustaining favorable macroeconomic conditions.

The other way to increase the productivity of labor would be by having an efficient educational system—with an aim to reduce the spread of educational differences and skill levels between workers and between income classes—so that those in the lower classes would be better equipped if foreign demand shifts toward low-skilled labor. In this regard, the government might want to look into its public education system, where many of the low-income classes acquire the minimum skill requirements needed in securing a job, whether here in the Philippines or abroad. All in all, by reducing the spread of educational differences, an efficient educational system might also reduce the spread of migration opportunities between the upper and lower income classes.

6.2 Recommendations for further studies

The paper has opened up many areas for future research. The paper has limited itself to a discussion of income inequality in the context of international migration, but the analysis can be taken a few steps further. For one, regression analysis can determine the effects of individual households' characteristics on income and its distribution. It may even be used to test the significance of the results of the decomposition.

There also has been some mention of the possibility of urban-to-rural migration before actual international migration takes place. Although the paper has not dwelled on the issue, it remains an important avenue towards understanding the impact of migration and remittances on Philippine income inequality. In this regard, future studies may opt to decompose income inequality on a smaller level—perhaps regional—instead of on a national level.

Finally, the paper has not given attention to the further implications of the changes in inequality, specifically on its ambiguous implications with regard to welfare. For instance, a small increase in the income of household A, leaving all other households' incomes unchanged (*ceteris paribus*), may result in a worsening of income inequality depending on household A's relative position in the distribution. This may be interpreted as a welfare gain, at least for household A, but not necessarily so for the entire society. It is thus reasonable to investigate the effect of a small change in income from remittances—or from any other source, as the decomposition equations allow it—on social welfare. Doing so, however, will require some knowledge of social welfare functions, which is beyond the scope of this paper.

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