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Remittances and Inequality

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Abstract

The impact of remittances on inequality is uncertain a priori. However, at the margin, remittances are likely to be more inequality increasing (or less inequality decreasing) in poorer as opposed to richer areas. This is suggested with a simple theoretical model, and tested empirically using survey-based estimates of the Gini income elasticity of remittances in Honduras. The results are robust to alternative distribution weights used for measuring inequality.

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Keywords: migration, remittances, income distribution.

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1 Introduction

Remittances from abroad are a key source of revenue in many developing countries, but the impact of remittances on income inequality is unclear. While some studies suggest that remittances are inequality increasing (e.g., Rodríguez, 1998, and Leones and Feldman, 1998 in the Philippines; Barham and Boucher, 1998 in Nicaragua; Adger, 1999 in Coastal Viet Nam), others suggest that they are inequality decreasing (e.g. Ahlburg, 1996 in Tonga; Handa and King, 1997 in Jamaica).

Theoretically, whether remittances contribute to increasing or decreasing income inequality depends on who is migrating and remitting. If migrants come from poorer segments of the population, the impact of their remittances is more likely to contribute to a reduction in inequality because on average poorer families are going to receive the extra income from remittances. On the other hand, if migrants tend to be better off, remittances are more likely to be inequality increasing since comparatively richer families will benefit from the extra income.

A related, but not identical point has been made by Jones (1998) and Stark et al. (1986). Although none of these authors provide a formal model of the decision to migrate, they both argue that the impact of remittances on inequality depends on the stage of migration in the home country or location. Jones argues that the effect of remittances on the distribution of income depends on the "stage" of migration in the sending community. He distinguishes three stages of migration: the "innovative stage", when only the most adventurous and better off people migrate, in which case remittances tend to be inequality increasing; the "early adopter stage", when people from lower segments of the income distribution also start to migrate and, therefore, remittances become comparatively more inequality decreasing; and finally, the "later adopter stage", when due to the accumulation over time of remittances in families with migrants, those families are farther apart from the families without migrants and therefore remittances may be inequality increasing again. Stark et al. (1986) also find that a village's migration history, as well as how widespread migration opportunities are, matter for how remittances affect inequality. They find that in a Mexican village with little migration to the United States, remittances are inequality increasing while the opposite is true for a village where migration to the United States has a long history.

In this paper, rather than looking at how the impact of remittances on

inequality changes with the state of migration, we focus on how this impact varies according to the income level of the area of origin. We present a simple two-period model to explain why the impact of remittances on inequality is uncertain a priori. More precisely, we argue that the impact of remittances on inequality depends on where those who migrate are located in the distribution of income. We consider the decision to send migrants for different households within a community. We find that, in the general case, neither the poorest nor the richest households will benefit from migration, and therefore send some of their members away. The richest people in a community are not likely to gain from migration because their income is already high, so that it would be difficult for them to obtain a higher wage by migrating. The reason why the poorest do not migrate is different: they may find it too costly, that is they may not have access to financial markets to borrow and pay upfront for the cost of migration, even though they would benefit more from migration than other households. Given that neither the very poor nor the very rich are likely to migrate, the impact of migration on inequality is uncertain. But it can still be argued on the basis of our model that remittances will tend to be more inequality increasing (or less inequality decreasing) in poorer areas than in richer areas.

To make this clear, consider a comparison of the impact of remittances in urban (i.e., richer) versus rural (i.e., poorer) areas. Since we observe migration (or rather, remittances) in both types of areas, the families of the migrant individuals must have had enough income to pay for the cost of migration, but their income must have been also sufficiently low so as to benefit from migration (i.e., the wage at home is lower for the household member who is migrating than the expected wage upon migration). Assume that the individuals who migrate to some attractive area within a country or abroad have similar characteristics whether they are coming from rural or urban areas. Urban families who have members who migrate are likely to occupy a lower position in the distribution of income within urban areas than their rural counterparts. That is, with a similar level of income, the migrants' families will tend to be comparatively richer in rural areas (when compared to other rural households), and poorer in urban areas (when compared to other urban households). Then, the same level of remittances would be more inequality reducing (or less inequality increasing) in urban than in rural areas. While this does not mean that remittances will definitively be inequality increasing in rural areas, and inequality decreasing in urban areas, it still permits to assume that comparatively, the impact of remittances in

both types of areas will be different, and predictably so.

To test our model empirically, we use recent data from a nationally representative survey for Honduras. Using the methodology developed by Lerman and Yitzhaki (1985) and Stark et al. (1986), we estimate the impact of remittances on the Gini coefficient and find that at the margin, remittances tend indeed to be more inequality reducing (or less inequality increasing) in urban than in rural areas. While the net impact on inequality at the margin of remittances is sensitive to the choice of the measure of inequality (i.e., extended Gini versus standard Gini), the finding that remittances are more inequality reducing (or less inequality increasing) in urban than in rural areas remains robust when using the extended Gini instead of the standard Gini.

The rest of the paper is organized as follows. Section 2 presents a simple theoretical model, section 3 presents the empirical results using the data from Honduras and section 4 briefly summarizes our findings and presents conclusions.

2 Model

Consider a family with two possible sources of income, namely the wage from a young son (or daughter) and the wage from an older parent. We allow only the son to migrate. For simplicity, we provide a two-period model, but an extension to more than two periods would be straightforward. The family is considered as a single economic agent whose utility depends on today's consumption, c_0, as well as the present value of consumption in period two for the parent (and the other family members who do not migrate), c_p, and for the son, c_s, who may or may not migrate depending on the opportunities provided by migration. The family's utility function is separable, so that:

$$U(c_0, c_p, c_s) = u(c_0) + \beta\big[V(c_p) + W(c_s)\big]. \tag{1}$$

where β is the discounting factor and $u(\cdot)$, $V(\cdot)$ and $W(\cdot)$ are continuously increasing concave functions. Let

$$\lim_{x\to 0} u(x) = -\infty \quad \lim_{x\to 0} V(x) = -\infty \quad \lim_{x\to 0} W(x) = -\infty.$$

That is, zero consumption for the family as a whole in the first period (when all family members are living together) or for either the parent (and the other

members remaining at home) or the son in the second period yields infinite disutility.

In the first period, the parent works and receives a wage of w. If the son also works, he receives the same wage. If the son migrates, he does not earn a wage in the first period, and the family has to pay the cost of migration c. In the second period, the son receives a wage w_m. The total cost of migrating is the sum of the direct cost c and the forgone income for the first period w. The cost c is assumed to be the same for all families. The wage at the host location, w_m, can be considered as the expected wage of migrants before migrating. Empirically, we might find a positive correlation between the wages at home and at the host location for each individual, but in order to make the model as simple as possible, we will assume that the wage at the host location is the same (i.e., constant) for all migrants. Our results do not depend on this assumption.

Markets are assumed to be incomplete, so that the family cannot borrow money in the first period to help one of its members to migrate. The price of consumption, both present and future, is normalized to 1. If the son migrates in the first period, he remits a proportion α of his earnings to help his parent in future periods, unless $w \geq w_m$, in which case α is zero (the son remits only if the parent and other household members at home are worse off than himself). If the son does not migrate, α is also equal to zero since the parent and the son have the same income and there is no reason for them to shift consumption from one to the other. The constraints for the optimization problem are:

$$c_0 = 2w - \xi(w + c) \tag{2}$$

$$c_p = w + \xi(\alpha w_m) \tag{3}$$

$$c_s = w + \xi((1 - \alpha)w_m - w) \tag{4}$$

where

$$\xi = \begin{cases} 1 & \text{if the son migrates} \\ 0 & \text{if the son does not migrate.} \end{cases} \tag{5}$$

When migration takes place, the family chooses α to solve the optimal condition:

$$V'(w + \alpha w_m) = W'\big((1 - \alpha)w_m\big). \tag{6}$$

As it usually happens when altruism is assumed as we do here, the amount of remittances sent by the son is lower when the parent's wage is higher. Since the son cares about the parent well-being, as the income of the parent increases, the marginal utility for the son is lower and he spends less on the parent (see for example Becker, 1974).

To decide whether the son should migrate, the family estimates the gain from migration:

$$\begin{aligned} G(w) =& u(w-c) - u(2w) \\ &+ \beta\big[V(w+\alpha w_m) - V(w) + W\big((1-\alpha)w_m\big) - W(w)\big]. \end{aligned} \tag{7}$$

Migration will take place only when $G(w) \geq 0$.

The impact of migration and remittances on income inequality depends on whom migrates. Let the income of the parents be distributed over an interval $[\underline{w}, \bar{w}]$ according to a continuous cumulative distribution function, $F(\cdot)$. If c is very large, or w_m is low enough or both, we may have no migration at all. In a more realistic setting, unless c is very low, some families with very low income will probably choose not to migrate. This is because for very low wages, $G(w) < 0$, since as the wage approaches the cost of migration, the utility becomes minus infinity.[1] Without loss of generality, let $G(\underline{w}) < 0$. That is, the lowest wage is sufficiently close to the cost of migration, so people with that wage will not migrate. At the other extreme of the distribution of income, if some families enjoy a wage at home higher than the wage they can expect under migration, so that $\bar{w} > w_m$, they will also choose not to migrate. Since both $G(\underline{w})$ and $G(\bar{w})$ are negative, there are an even number of times that $G(\cdot) = 0$.

If migration is observed, we will assume for simplicity that there are only two wage levels for which $G(\cdot) = 0$, in which case there are three different groups of families. The first group consists of families who do not migrate because their income is too low. For these families, the present disutility from the cost of migration outweighs future benefits, even though the expected wage gain from migration is the highest for these families. In figure 1, all families with parental wage lower than w^- belong to this group. Note that, since $u(\cdot)$ is concave, as the wage at home increases, $u(2w) - u(w-c)$ becomes smaller, and it is more likely that the son will migrate. The second group of families is the one for which migration is a rational choice. This group

[1] $\lim_{x \to c^+} u(x-c) = -\infty$.

is represented in figure 1 by the families with parental wage in the segment $[w^-, w^+]$. Note that since $G(w^+) = 0$, then:

$$u(2w^+) - u(w^+ - c) = \beta\big[V(w^+ + \alpha(w^+)w_m) - V(w^+) + W\big((1 - \alpha(w^+))w_m\big) - W(w^+)\big]. \qquad (8)$$

Since $\alpha(w^+)$ is optimally chosen and the left hand side of (8) is positive, $w^+ < w_m$, for otherwise $\alpha = 0$ and (8) would not hold.

Finally, for families with high wages, the future benefits of migration are low or even negative if $w \geq w_m$.[2] All families with parental income higher that w^+ in figure 1 are in this case. Since $w^+ < w_m$, some families with migrants could have more income in future periods than families for whom the gains from migration are negative because their income at home is high, but the total utility of the families who chose not to migrate will, by revealed preferences, remain higher.

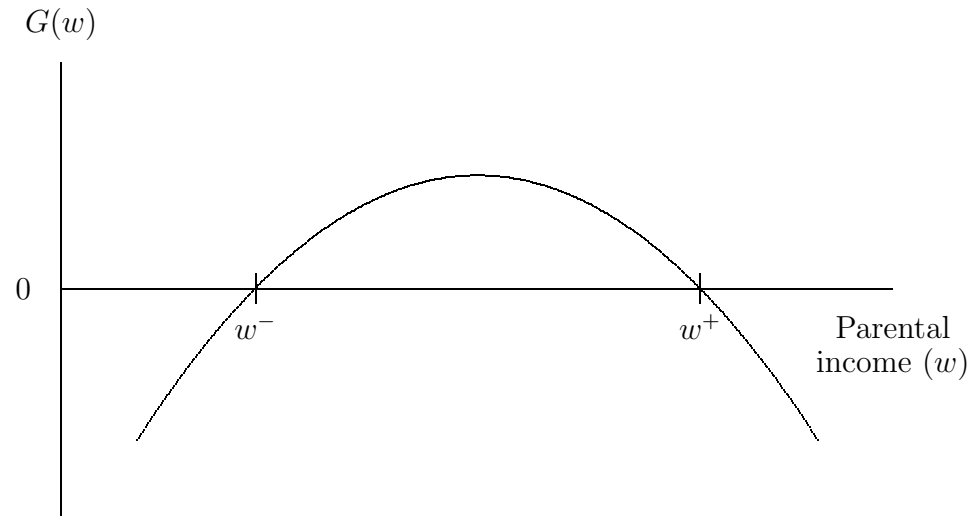

Figure 1: Gains from migration for different paternal incomes.

Thus only families in the second group (wages in $[w^-, w^+]$) are affected by migration. For these families, the total income after migration, i.e. the

[2]Actually even for lower wages the gains from migration would be negative since they have to pay the costs of migration.

sum of the wages earned by the father and the son, is larger than without migration. Since the proportion of total income in the hands of the other two other groups is lower after migration, the Lorenz curve after migration will cross the Lorenz curve before migration as shown in figure 2. The impact of migration on inequality is uncertain, and inequality measures such as the Gini index may increase or decrease due to migration. For migration to be inequality decreasing with certainty, we must have $w^- < \underline{w}$, in which case even the poorest families will migrate. The other extreme case is when $\bar{w} < w^+$, in which case the Lorenz curve after migration would lie below the Lorenz curve before migration took place, and income inequality increases. Note that a decrease in the migration costs or an increase in the wages abroad would make migration more likely for both poorer and richer families.[3]

Although we cannot say a priori if migration is inequality increasing or decreasing, we can say that migration will tend to be more inequality increasing (or less inequality decreasing) in geographic areas where wages are low than in areas where wages are high. In poor areas, the cost of migration represents more of a burden for the poor, so that a larger proportion of the poor will not migrate. Additionally, in poor areas, since wages are lower, the proportion of the richer population that will not migrate will be smaller. In richer areas, those who are comparatively poorer will be more likely to migrate because the cost of migration will not be such a barrier, and a higher proportion of the rich will not migrate because they will be less likely to gain from migration. For example, one would expect migration to be more inequality increasing (or less inequality decreasing) in rural than in urban areas.

In a typical household survey, and in the empirical work presented in the following section, we do not observe the income of those who have migrated (i.e., the migrant is considered as a separate household in the survey.) But for all households, we have information on various income sources, including

[3]This could well happen according to Jones (1998) who suggests that as migration becomes more prominent in a community, networks begin to develop, and this may cause the costs of migration to fall. Indeed, in Jone's innovative stage, there is little information about the opportunities abroad apart from the fact that the costs are high. By contrast, in the early adopter stage, networks have formed, thereby reducing the costs of migration. Information about opportunities abroad is also better, leading more people to migrate. In the later adopter stage, the costs and the information don't change, but the difference in incomes between the families who have engaged in migration for some time and those (poorer) families who have not has increased.

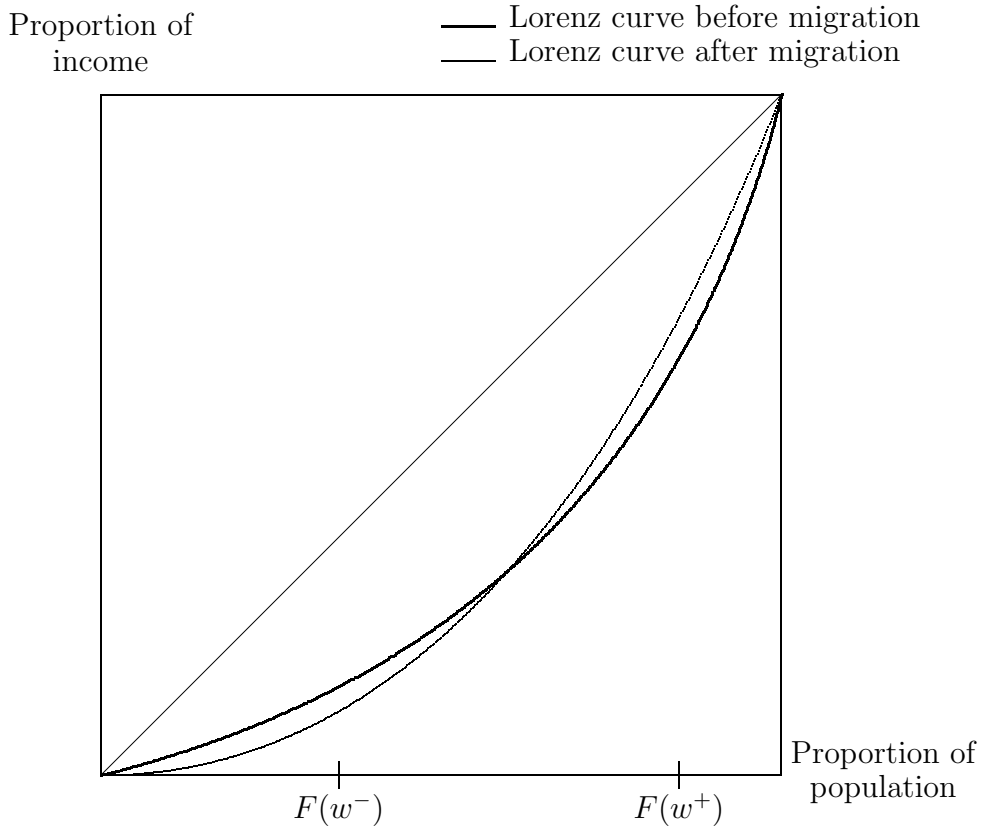

Figure 2: Lorenz curves before and after migration takes place.

remittances received from household members who have migrated. Since we do not observe the wage of the migrants, the families with one or more migrants may drop a bit in the distribution of income (as compared to what we would observe if we were able to include the wage of the migrants) when compared with families without migrants, because for the later we do observe the wages of all family members. There will also be some overlap in the observed incomes for families with and without migrants. Still, a standard cross-sectional survey can be used for testing the main prediction of our model. Indeed, it will still remain true despite limitations in the data that families with migrants will not in most cases belong to the very poor or the very rich, and that remittances will be more inequality increasing (or less inequality decreasing) in rural or poorer than in urban or richer areas.

3 Empirical Results

This section provides an empirical test of the prediction of our model, namely that remittances are more inequality decreasing in urban areas than in rural areas. We use data from Honduras' March 1999 Encuesta Permanente de Hogares de Propósitos Múltiples (EPHPM), a nationally representative survey comprising of about 7,200 households, stratified into four geographic regions: the capital of Tegucigalpa, the city of San Pedro Sula, other urban areas, and rural areas. About half the population lives in rural areas. The income sources which are recorded in the survey are: wage earnings from a primary or secondary occupation; earnings from self-employment income; pensions; subsidies (this may include subsidies for electricity and urban transportation, which are fairly large and do not reach the poor well); rents (probably from houses or apartments); transfers ("bonos" in Spanish; again it is not fully clear from the questionnaire what is covered, but programs providing cash stipends for children attending schools enters in this category); remittances from abroad; income support from family members, income support from other individuals; and other income sources.

A first way to assess whether remittances are inequality increasing or decreasing is to compute the Gini index with and without remittances from abroad. If the Gini is higher (lower) with remittances, it can be argued that remittances are inequality increasing (decreasing). While we provide such results, an alternative and more interesting way to assess whether remittances are inequality increasing or decreasing is to compute the marginal impact on inequality of a slightly higher level of remittances, for example following an increase in the level of wages abroad in our model. For this, we use the decomposition of the Gini proposed by Lerman and Yitzhaki (1985). Denote total per capita income by y, the cumulative distribution function of per capita income by $F(y)$, and the mean per capita income across all households by $\bar{y}$. The Gini index can be decomposed as follows:

$$G_y = \frac{2\text{cov}[y, F(y)]}{\bar{y}} = \sum_i S_i R_i G_i \tag{9}$$

where G_y is the Gini index for total income, G_i is the Gini index for income y_i from source i, $S_i = \mu_i/\bar{y}$ is the share of total income obtained from source i, and R_i is the Gini correlation between income from source i and total income. The Gini correlation is defined as $R_i = \text{cov}[y_i, F(y)]/cov[(y_i, F(y_i)]$, where $F(y_i)$ is the cumulative distribution function of per capita income from

source i. The Gini correlation R_i can take values between -1 and 1. Income from sources such as income from capital which tend to be strongly and positively correlated with total income typically have large positive Gini correlations. Income from other sources may have smaller, and possibly negative Gini correlations. The value $S_i R_i G_i$ is the so-called absolute contribution of the income source to inequality, but we are interested more in the source's marginal contribution. As proven by Stark et al. (1986), the impact of increasing for all households the income from a given income source i in such a way that y_i is multiplied by $(1 + e_i)$ where e_i tends to zero is:

$$\frac{\partial G_y}{\partial e_i} = S_i(R_i G_i - G_y) \tag{10}$$

The percentage change in inequality due to a marginal percentage change in the income from source i is equal to that source's contribution to the Gini minus its contribution to total income. In other words, at the marginal level, what matters for evaluating the impact of income sources is not their Gini, but rather the product $R_i G_i$ which is called the pseudo Gini. Denoting by $\eta_i = R_i G_i / G_y$ the so-called Gini elasticity of income for source i, the marginal impact of a percentage change in income from source i identical for all households on the Gini for total per capita income can be expressed in percentage terms as:

$$\frac{\partial G_y / \partial e_i}{G_y} = \frac{S_i R_i G_i}{G_y} - S_i = S_i(\eta_i - 1) \tag{11}$$

An increase in income from a source with a Gini elasticity η_i smaller (larger) than one will decrease (increase) the inequality in per capita income at the margin. The lower the Gini elasticity, the larger the redistributive impact.

Table 1 provides the empirical results obtained for the standard Gini in Honduras at the national, urban, and rural levels. The bottom part of the table provides the comparison of the Gini index with and without remittances from abroad. Nationally and in urban areas, including remittances in total per capita income reduces inequality, while there is virtually no impact in rural areas. This is what our model predicted (i.e., more inequality reduction in urban or richer as opposed to rural or poorer areas).

The table also provides estimates of the absolute and marginal contributions to inequality of the various income sources. The first column in the table

provides the share of total per capita income accounted by each source. For example, wage earnings from a primary occupation represent 46.1 percent of total income nationally, as compared with 2.2 percent for wage earnings from a secondary occupation, and 40.2 percent for earnings from self-employment. Remittances from abroad, support from family members, and income from rents account for, respectively, 4.6, 3.7, and 1.7 percent of total income at the national level. All other income sources represent less than one percent of total per capita income. The situation is broadly similar in urban and rural areas taken separately, although (not surprisingly) income from self-employment plays a much larger role in rural areas.

The second and third columns in the table provide the Gini indices and the Gini correlations of the various income sources. The absolute contribution of a source to inequality (in column four) is the product of the source's share in total income, its Gini, and its Gini correlation. Because the income shares of wages from a primary occupation and self-employment income are largest, these are also the income sources with the largest absolute contribution to income inequality.

At the margin by contrast, whether the contribution of a source to inequality is positive or negative depends only on the source's Gini income elasticity, which is the product of the source's Gini index and Gini correlation divided by the overall Gini. As explained earlier, a percentage increase in the income from a source with a Gini income elasticity smaller (larger) than one will decrease (increase) the inequality in per capita income. The lower the Gini elasticity, the larger the redistributive impact of an income source. The findings for the Gini elasticities suggest for example that subsidies increase inequality, in part because the goods which are subsidized (such as electricity) tend to be consumed more by the non-poor than by the poor (for an evaluation of electricity subsidies in Honduras, see Wodon et al., 2002).

For our purpose, the main interest lies in the findings for the impact of remittances from abroad on inequality. In rural areas, the Gini elasticity for remittances is larger than one (1.385), so that remittances from abroad are inequality increasing. In urban areas, the elasticity is smaller than one (0.956), so that remittances are mildly inequality decreasing. Nationally, remittances are inequality increasing at the margin (elasticity of 1.136). The findings are thus as predicted by our simple theoretical model: remittances tend to be more inequality reducing (or less inequality increasing) in urban (or richer) as opposed to rural (or poorer) areas.

These result could however be sensitive to the distribution weights implicit in the use of the standard Gini index for the measurement of inequality. In order to test for this sensitivity, we apply the decomposition by income source to the extended Gini index, defined as:

$$G_y(\nu) = \frac{-\nu \text{cov}(y, [1-F]^{\nu-1})}{\bar{y}} \tag{12}$$

The standard Gini corresponds to $\nu = 2$. A higher (lower) value for ν implies a higher emphasis on the lower (upper) part of the distribution of income. The absolute and marginal contributions of remittances from abroad to inequality can be computed in a very similar way to that shown above for the standard Gini. The results are provided in table 2. The extended Gini indices with remittances remain smaller than those without remittances at the national and urban level, while in rural areas, for all practical purposes, including remittances in the income aggregate still does not affect inequality much. When a higher weight is placed on the poor ($\nu = 6$), remittances from abroad become inequality increasing at the margin everywhere, which is not surprising in light of the financial constraints to international migration for the very poor. Still, the fact that at the margin, remittances tend to be comparatively more inequality reducing (or less inequality increasing) in urban than in rural areas remains robust with the extended Gini.

4 Conclusion

We have provided a simple model to suggest that although the impact of migration and remittances on inequality is uncertain a priori, we expect the impact to be comparatively more inequality decreasing (or less inequality increasing) in richer than in poorer areas. Using recent data from Honduras, the prediction of the model was confirmed by comparing the impact of international remittances on income inequality in urban (i.e., richer) and rural (i.e., poorer) areas. Our findings could be especially important in a social welfare framework based on relative deprivation theory. According to this theory, which can be formalized by using the extended Gini index of inequality (e.g., Yitzhaki, 1983), households or families assess their level of welfare not only in absolute terms, but also in comparison with their peers or comparison group. In developing countries, it is likely that a household's comparison group will be at least in part based on geographic location. That

is, rural/urban households may compare themselves to other rural/urban households. In poorer and rural areas where levels of social welfare tend to be lower, part of the expected positive impact of international migration on total family income may be offset by a higher level of income inequality at home. This would not be observed, or at least not observed to the same extent, in urban areas. More generally, independently of an interpretation of our findings in a relative deprivation framework, the paper does provide a simple theoretical model, and an empirical validation, as to why the impact of remittances on income inequality may vary depending on location within a country, or the country itself.

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Table 1: Decomposition by source of standard Gini for per capita income, March 1999, Honduras.

	National					**Urban**					**Rural**				
	Share S_k	Gini G_k	Cor. R_k	Abs. $S_kG_kR_k$	Elas. $\frac{R_kG_k}{G}$	Share S_k	Gini G_k	Cor. R_k	Abs. $S_kG_kR_k$	Elas. $\frac{R_kG_k}{G}$	Share S_k	Gini G_k	Cor. R_k	Abs. $S_kG_kR_k$	Elas. $\frac{R_kG_k}{G}$
Primary wage	0.461	0.713	0.767	0.252	0.978	0.513	0.627	0.720	0.231	0.913	0.352	0.727	0.667	0.171	0.901
Secondary wage	0.022	0.977	0.654	0.014	1.142	0.020	0.981	0.748	0.014	1.487	0.027	0.968	0.610	0.016	1.097
Self employment	0.402	0.771	0.723	0.224	0.997	0.349	0.790	0.683	0.188	1.093	0.513	0.726	0.768	0.286	1.036
Public transfers	0.008	0.993	0.739	0.006	1.313	0.008	0.990	0.639	0.005	1.282	0.007	0.996	0.815	0.005	1.507
Subsidies	0.001	0.997	0.777	0.001	1.385	0.001	0.992	0.589	0.000	1.183	0.001	1.000	0.925	0.001	1.718
Rents	0.017	0.989	0.816	0.014	1.442	0.023	0.980	0.752	0.017	1.494	0.004	0.995	0.620	0.003	1.145
Transfers	0.003	0.995	0.687	0.002	1.222	0.003	0.995	0.722	0.002	1.455	0.004	0.995	0.709	0.003	1.312
Remittances	0.046	0.964	0.659	0.029	1.136	0.045	0.947	0.498	0.021	0.956	0.047	0.977	0.763	0.035	1.385
Private transfers															
Family	0.037	0.939	0.443	0.015	0.743	0.035	0.935	0.346	0.011	0.656	0.040	0.935	0.431	0.016	0.749
Individuals	0.001	0.998	0.315	0.000	0.562	0.001	0.998	0.395	0.000	0.799	0.001	0.997	0.116	0.000	0.215
Other income	0.003	0.998	0.677	0.002	1.207	0.003	0.998	0.697	0.002	1.410	0.004	0.997	0.611	0.002	1.132
Gini		0.559					0.494					0.538			
Gini without remittances		0.566					0.506					0.538			

Source: Autors' estimation using March 1999 EHPHM.

Table 2: Sensitivity of results to distribution weights in the Gini index

	Comparison of extended Gini with and without remittances						**Marginal impacts** Gini income elasticities		
	National		Urban		Rural				
	With	Without	With	Without	With	Without	National	Urban	Rural
ν=1.5	0.398	0.404	0.348	0.357	0.382	0.382	1.097	0.899	1.454
ν=2	0.559	0.566	0.494	0.506	0.538	0.538	1.136	0.956	1.385
ν=4	0.773	0.779	0.696	0.713	0.754	0.755	1.143	1.060	1.225
ν=6	0.843	0.848	0.768	0.785	0.829	0.831	1.118	1.084	1.158

Source: Autors' estimation using March 1999 EHPHM.