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Redistribution in the Philippines

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Abstract

Private, interhousehold income transfers in the Philippines are large and widespread. They are responsive to the economic status of households. Transfers are targeted to households headed by the non-employed and those without access to retirement pensions. Among the very poorest households, decreases in their pre-transfer income appear to prompt large increases in private transfers, suggesting that transfers are in part motivated by altruism. The responsiveness of transfers to household income implies that attempts to improve the economic status of poor households could be thwarted by private responses. If a poor household can tap increased government aid, its private benefactors would cut back on their own transfers. For example, we estimate that if unemployment insurance were instituted in the Philippines, the policy would prompt such large reductions in private transfers that the jobless households would only be slightly better off. We also find that social security prompts similar, though smaller, reductions in private transfers, and that government efforts to alleviate poverty would fall short of the mark because of private-transfer responses. In spite of the private-transfer response, however, public transfers still confer benefits to targeted households. But these benefits are smaller than those implied by analyses that ignore private-transfer behavior.

1. Introduction

Do private interhousehold income transfers act like publicly provided social insurance in mitigating income shortfalls from unemployment or raising incomes of vulnerable groups such as the poor or retired elderly? The answer to this question could prove critical for evaluating proposals to create or expand social insurance programs such as social security or unemployment insurance. If private and public transfers are close substitutes, an expansion of public income redistribution could prompt a reduction in private transfers, diluting program effectiveness. For example, an expansion in social security coverage might cause children to cut back private transfers to their retired parents, so that the well-being of retired elderly parents winds up being little affected by public transfers targeted to them.

While the connection between private and public transfers could prove critical for gauging the effectiveness of public income redistribution, assessing the strength of this connection can be troublesome. In countries with well-developed public income transfer systems, public transfers may have already supplanted private ones to a large extent, rendering private-transfer incidence amounts negligible. The remaining small samples of private-transfer recipients might not be very informative about the determinants of private transfers. The researcher is left wondering whether the small samples are the result of a *fait accompli* (the "crowding out" has already occurred) or some other behavior.

This paper examines private transfers in the Philippines, a country with very little publicly provided social insurance.¹ The Philippines is an ideal case study for gauging the strength of private safety nets because government alternatives to these safety nets are scarce. We find that private transfers are large and responsive to household characteristics that can be affected by government policy. For example, our estimates indicate that income

¹Though private transfers can come in many forms, including private charity in addition to interhousehold transfers, we focus solely on interhousehold, private transfers between family members and friends. Further, our private-transfer measures are limited to *inter-vivos*, i.e., non-bequest transfers.

shortfalls among the very poorest households prompt large increases in private transfers. And transfers are larger when the household head is not employed. These findings are important because they suggest that household behavior can greatly offset or even neutralize the impact of public transfers. Indeed, out policy simulations indicate that expansion of public income redistribution in the Philippines could prompt sharp cutbacks in private safety nets. As a result, simple analyses that do not account for private-transfer responses to public income redistribution could exaggerate the effectiveness of public programs for alleviating poverty or raising incomes of the elderly or unemployed.

2. Altruistic and Non-altruistic Transfer Behavior

Under what conditions do private transfers neutralize or offset public income distribution? What patterns in the data are to be expected with alternative motivations for private transfers? Answering these questions is necessary for predicting the private-transfer response to change in public transfers. This section reviews theories of private transfers to help place our empirical findings, discussed in later sections, in perspective. Our main goal is to show the relationship between recipient pre-transfer income and transfer amounts under alternative hypotheses concerning transfer behavior.

Consider the following simple model of transfers, which is a variant of the model of transfer behavior presented in Cox (1987). We use the term "donor" to mean someone who gives financial transfers and "recipient" for someone who receives financial transfers. Suppose the utility of the donor, U_d , is given by

$$U_d = U(C_d, s, V(C_r, s)), \quad (1)$$

where V = recipient's well-being, C_i $i=d,r$ denote donor and recipient consumption and s denotes "services" that the recipient might provide to the donor.

Expression (1) contains both altruism and exchange. The donor cares about the recipient so that $\partial U_d / \partial V > 0$. But the recipient must be compensated with financial transfers for any services he provides because we assume that $\partial V / \partial s < 0$. The partial

effects of the other arguments in (1) are positive. For example, the donor enjoys services provided by the recipient. The budget constraints for donor and recipient, respectively, are $C_d = I_d - T$ and $C_r = I_r - T$, where T denotes financial transfers given by the donor to the recipient and the I_i are ($i=d,r$) are pre-transfer incomes.

The name "services" is a catch-all term that stands for anything that the recipient provides to the donor in exchange for financial transfers. For example, services might include help with home production or behaving in a way the donor prefers. Alternatively, "services" might capture financial transfers that the recipient makes to the donor at a later date. In this instance, if T is a loan from donor to recipient, then s denotes the discounted value of loan repayments.

We assume that there are no market substitutes for transfers or services so that donor and recipient are engaged in a bilateral monopoly problem when they make exchanges. One way (but not the only way) to resolve the problem is to assume that the donor dominates the bargaining arrangement. This assumption implies that exchange-motivated transfers provide exact compensation for services. The "donor-dominates" assumption has the virtue of nesting the traditional altruism formulation of Becker (1974) and Barro (1974) in a model that contains both altruistic and exchange motives for transfers.

When is a transfer altruistic and when is it exchange-related? The recipients' utility from severing relations with the donor is $V_0 = V(I_r, 0)$ --the recipient receives no transfers and provides no services. The dominant donor faces the constraint the $V \geq V_0$. If the constraint is binding, the transfer is exchange-related--transfers provide exact compensation for services. Otherwise, transfers are altruistic because they increase the well-being of the recipient. Suppose transfers are altruistically motivated. In this case, $\partial T / \partial I_r < 0$. Recipients with higher pre-transfer income require smaller transfers to attain the level of consumption that is optimal from the donor's point of view. The effect of I_r on T can be

large. For example, with Cobb-Douglas preferences and equal weighting of donor and recipient utility ($\partial U/\partial V=1$), the value of $\partial T/\partial I_r$ is minus one-half.

If transfers are exchange motivated, the relationship between T and I_r is different. Think of transfers as the product of an implicit price of services, p , and quantity of services s . It is easy to show that $\partial s/\partial I_r < 0$ and $\partial p/\partial I_r > 0$ (Cox, 1987). So transfers can rise or fall with I_r depending on whether the price effect dominates the quantity effect. All else equal, the price effect is stronger the lower is I_r . Intuitively, an increase in I_r shifts the supply curve of services upward and to the left. If donor demand is inelastic, transfers rise with I_r ; otherwise, they fall. The lower is recipient income to begin with, the more likely the supply curve intersects the donor demand curve at an inelastic point. So in the exchange regime, transfers first rise then fall with recipient income.

One final item must be explored before characterizing the relationship between recipient income and transfer amounts--the connection between recipient income and the motive for transfers. The motive for transfers is more likely to be altruistic if recipient income is very low. Donors who have an indigent relative make transfers strictly to raise recipient well-being. Once recipient well-being reaches a certain threshold, however, exchange becomes the operative motive at the margin.

With all these results in mind, we can describe the relationship between recipient income and transfers (holding everything else constant), which is depicted in figure 1. Start with a very low value for recipient income--somewhere between 0 and I_r' . In this instance the recipient is so poor that the transfer is altruistically motivated. From 0 to I_r' transfers fall with recipient income. But once the threshold I_r' is reached, the recipient is no longer poor enough to receive altruistically-motivated transfers. Transfers that occur after this point are exchange-motivated. But the recipient might still be poor enough so that his supply curve of services is such that it intersects donor demand where donor demand is inelastic. If so, further rises in I_r prompt *increases* in transfers. (Recall that transfers are expenditures on services. Increases in I_r shift the supply curve to the left. If demand is

inelastic, the leftward shift in supply prompts increases in expenditures). Once I_r becomes large enough however, the supply curve moves to the elastic portion of the demand curve, so that further leftward movements in the supply curve from increases in I_r cause reductions in transfers. Finally, once recipient income becomes large enough (I_r'') he becomes independent of the donor, and transfers cease altogether.

The simple model is informative for empirical work in two ways. First, it implies that empirical specifications of transfers functions should be *non-linear* in recipient income. Second, the model can address the "crowding-out" of private transfers by public ones. Suppose a public income transfer scheme raises every low-income household's income to I_r' . Then altruistically motivated transfers will disappear, leaving only exchange-related ones. Further increases in public transfers can actually "crowd in" private transfers if they occur along the segment $I_r' - I_r''$. Finally, if public transfers expand enough to give everyone a minimum income of I_r'' , private transfers disappear altogether.

3. Transfer Motives--Evidence from the Literature

The question of transfer motives is critical for knowing whether public transfers supplant private ones. For example, widespread, altruistic transfers completely neutralize the distributional effects of public transfers. Taxing the donor and giving the proceeds to the recipient does not alter the aggregate budget constraint of the pair. So optimal recipient consumption from the donor's point of view does not change. The only thing that changes is private transfers, which fall exactly enough to counteract the effects of public income redistribution. But if transfers are exchange motivated such neutralization will not occur.

Despite the fact that altruism is probably the predominant way that transfer behavior is modeled, there is little empirical evidence supporting the altruistic motive for transfers in developed countries. For example, no study of private transfer behavior in the United States, with exception of Tomes (1981) finds evidence to support the altruistic hypothesis.

Tomes found that bequests tended to perform a compensatory role--poorer heirs received larger inheritances, which squares with predictions of the altruist model. But his findings were subsequently disputed by Menchik (1988), who discovered measurement error in Tomes' data. Most of the remaining studies of transfer behavior in the United States point to either exchange behavior (e.g., Bernheim, Shleifer and Summers (1985), Cox (1987)) indicate an exchange motive for transfers, or transfers dictated by non-altruistic norms such as equal sharing of bequests (e.g., Menchik (1980)).

Perhaps one reason for the lack of evidence for altruistic transfers in the United States is that public income transfer programs have already crowded out any such transfers, leaving only exchange-related ones.

The evidence for developing countries is less clear cut. Some studies find an *inverse* relationship between recipient income and transfer amounts (e.g., Kaufmann and Lindauer (1986; El Salvador), Kaufmann (1982; the Philippines) and Ravallion and Dearden (1988; rural households in Java). This result is consistent with altruism; the poorer get more transfers. But other studies find a *positive* relationship between recipient income and transfer amounts (e.g., Lucas and Stark (1985; Botswana) Ravallion and Dearden (1988; urban households in Java) and Cox and Jimenez (1991; urban households in Peru). A problem with each of these studies, however, is that none contains a specification for recipient income that is flexible enough to capture the complete transfer pattern depicted in figure 1.

The empirical evidence for the Philippines presented below indicates that flexibility in the functional form for recipient income estimates of transfer equations can prove critical for inferring transfer motives and performing policy simulations. Before proceeding with the empirical estimates, we describe our data set and present an overview of transfer patterns.

4. The 1988 Family Income and Expenditures Survey

The Family Income and Expenditures Survey (FIES) of the Philippines is undertaken every three years to gather income and consumption information for a representative cross-section of Filipino households. The main objective of the survey is to obtain information about expenditure patterns, income sources and inequality and to obtain information for updating weights in the consumer price index.

The survey gathers information about sources of income (both cash and in-kind), demographic variables such as family size, marital status and number of children by age group, and job-related information such as earnings and employment status. In addition, the survey asks respondents to report on a variety of transfers, both in-kind and cash, from domestic sources and from overseas. The survey's definition of private transfers includes only interhousehold transfers, so that any redistribution that occurs within the household is not measured by the survey. The FIES covers 18,922 households (8,863 urban households and 10,059 rural ones). The survey also contains regional indicators used for region-specific poverty lines. This information is useful for the policy simulations presented in a later section.

5. Descriptive Overview and the Effects of Transfers on Inequality

Tables 1 and 2 provide a listing of household characteristics according to transfer status. Transfer status is determined by whether households were net transfer recipients or donors. Table 1 refers to urban households and table 2 refers to urban ones. Since the difference between urban and rural standards of living is so vast, for the most part we consider the two separately.

Transfers are widespread and large. Eighty-eight percent of the urban households were involved with transfers, either as donors, recipients or both. For the urban sample overall, gross transfer receipts accounted for 12 percent of total household income. For the sample of urban recipients, such receipts were nearly a fifth of total household income.

Many more households were net transfer recipients than net donors. Part of the reason is that international remittances account for a large fraction of total transfer receipts. For example, for urban households (table 1) gross transfers received from abroad accounted for two-thirds of total gross transfer receipts. Another reason for the discrepancy is that households were asked more questions concerning transfer receipts than transfers given. Only one module in the survey was concerned with gifts, and respondents were asked summary questions. Three modules dealt with receipts, including receipts in-kind and those from abroad. Unlike most surveys with information for transfer behavior, therefore, gifts are likely to be under-reported compared to receipts, rather than the other way around.

Nonetheless, splitting the sample according to transfer status is informative. For example, urban recipients have the lowest average pre-transfer income (table 1, column 1), while donors have the highest (table 1, column 3). The average pre-transfer income of "others" (i.e., households whose net receipts are zero) is in-between that of recipients and donors. So transfers flow from high- to low-income households.

The income pattern by transfer status is found for rural households (table 2). And, as for urban households, transfers among rural households are frequent and large. Ninety-three percent of rural households were involved with transfers as either recipients or donors, and transfers accounted for 12 percent of total income for the overall sample.

These simple comparisons of incomes by transfer status suggest that transfers might equalize the distribution of income, and they do. The following is a comparison of pre- and post-transfer income inequality for urban and rural households and the entire sample.

	<u>Pre-transfer</u>	<u>Post-transfer</u>
Urban Households		
Gini Coefficient	0.545	0.515
Variance of Log-income	0.967	0.839
Rural Households		
Gini Coefficient	0.407	0.391
Variance of Log-income	0.774	0.684
All Households		
Gini Coefficient	0.529	0.508
Variance of Log-income	0.924	0.830

Pre-transfer income is defined as household income before transfers (either receipts or gifts) occur. Post-transfer income subtracts gifts and adds receipts to pre-transfer income. In each sample transfers alter the income distribution dramatically. For example, in the urban sample the Gini coefficient falls 3 points, which indicates a very large impact of transfers on inequality.

Another way to gauge the impact of transfers on inequality is to look at their impact on the distribution of income by quintile. We divided up households by quintile according to their pre-transfer incomes and compared pre- and post-transfer income distributions.

	<u>Income Shares by Pre-transfer Income Quintile</u>		
	<u>Pre-transfer</u>	<u>Post-transfer</u>	<u>Percentage Change</u>
<u>Urban</u>			
Lowest	3.702	6.530	+76.4%
Second	7.654	8.351	+9.1
Third	11.538	12.025	+4.2
Fourth	17.908	18.053	+0.8
Highest	59.198	55.041	-7.0
<u>Rural</u>			
Lowest	5.774	8.286	+44.3
Second	10.542	11.227	+6.5
Third	14.984	15.144	+1.1
Fourth	21.752	21.999	-3.5
Highest	46.979	44.344	-5.6

<u>Income Shares, cont.</u>			
<u>Whole Sample</u>			
Lowest	3.990	6.461	+61.9
Second	7.846	8.506	+8.2
Third	11.860	12.074	+1.8
Fourth	18.490	18.506	+0.1
Highest	57.814	54.453	-5.8

The figures above clearly indicate that transfers have a large equalizing impact on the income distribution. The income share of the lowest quintile is affected the most in percentage terms. The effect of transfers is most dramatic for the poorest urban households, whose income share increases 76 percent once transfers are taken into account.

One way to put these distributional effects in perspective is to compare them with the effects of public income transfers in the United States. Though the Filipino figures are smaller they are nonetheless impressive considering the size of public transfers in the United States. Cash and in-kind public transfers reduce the United States Gini coefficient between 6 and 20 percent, depending on the definition of the household and time period (Haveman, Danziger and Plotnick, 1982). For example, in 1950 cash and in-kind public transfers reduced the United States Gini coefficient for families and unrelated individuals by 6.4 percent (Reynolds and Smolensky, 1977--cited in Haveman, Danziger and Plotnick, 1981). By comparison, private transfers reduced the Gini coefficient for urban Filipinos by 5.5 percent. United States cash and in-kind transfers increased the lowest quintile's income share from around 1.5 percent to a little under 10 percent in the mid-1970's. The comparable figures for the impact of transfers on the whole Philippines sample are 4 and 6.5 percent respectively.

Another way to gauge the importance of transfers is to compare Filipino poverty rates with and without transfers. (Note that none of these comparisons involve any behavioral responses. For example, if private transfers from one source really disappeared, perhaps another donor would step in to fill the gap. We discuss private behavioral responses to changes in income in a later section.) We compare the (as yet unofficial) poverty rates with those that would occur if transfers were removed (and nothing else happened). These figures are given below:

Poverty Rates With and Without Transfers

	Urban	Rural
Pre-transfer Poverty Rate (based on total income minus net transfers)	41.71%	66.19%
Post-transfer Poverty Rate	32.34%	59.49%

These figures indicate, for example, that if transfers ceased altogether urban poverty rates would be nearly a third higher.

6. Estimates of Transfer Functions

A look at sample characteristics in addition to income in tables 1 and 2 tend to confirm what the income comparisons discussed above suggest. Transfers flow from better- to worse-off households. For example, in both the urban and rural samples, transfer recipients have less education than donors, and the proportions of female-headed households and households whose head is not employed are higher among recipients than donors. In this section we gauge the partial effects of household characteristics on transfers.

Our goal is two-fold. First we want to compare the estimated effects of pre-transfer income on transfers with those predicted by the transfer theory discussed above. Second,

we will use the estimates to simulate the transfer effects of various public income redistribution policies.

a) Specification

We express net transfer receipts, T , as a function of household pre-transfer income and other characteristics. Net transfer receipts are defined as gross transfers received minus gross transfers given. In light of the possible non-linear effects that pre-transfer income can have on transfers, we express income as a spline function. The nodes of the spline are sample income quartiles: "25th" refers to the 25th percentile for income, "50th" refers to the 50th percentile for income, and so on. The term "income" refers to household pre-transfer income. The spline for household income is given as follows:

$$\text{Income}(1) = \text{Income if } \text{Income} \leq 25\text{th},$$

$$\text{Income}(1) = 25\text{th otherwise.}$$

$$\text{Income}(2) = \text{Min}(\text{Income}-25\text{th}, 50\text{th}-25\text{th}) \text{ if } \text{Income} > 25\text{th},$$

$$\text{Income}(2) = 0 \text{ otherwise.}$$

$$\text{Income}(3) = \text{Min}(\text{Income}-50\text{th}, 75\text{th}-50\text{th}) \text{ if } \text{Income} > 50\text{th},$$

$$\text{Income}(3) = 0 \text{ otherwise.}$$

$$\text{Income}(4) = \text{Income}-75\text{th} \text{ if } \text{Income} > 75\text{th},$$

$$\text{Income}(4) = 0 \text{ otherwise.}^2$$

In addition to pre-transfer income, we include other household characteristics in the transfer function. Education of the household head captures permanent income effects as well as the effects of past transfers received, at least to the extent that there may be large fixed effects in private transfers. Age is included because recent evidence attests to the role of liquidity constraints in determining transfer behavior (e.g., Cox, 1990; Cox and

²The income cutoffs for quartiles are as follows: urban--25th = 20,218 pesos, 50th = 34,010, 75th = 59,670; rural--25th = 12,052, 50th = 18,741, 75th = 29,940.

Jimenez, 1991). Liquidity constraints, in turn, imply that the timing of transfers is important. For example, transfers might be targeted to younger households who have yet to establish reputations with formal sources of credit. We include gender of household head because nearly all studies of private transfers indicate that they are disproportionately targeted toward women (e.g., Lucas and Stark, 1985 (Botswana); Kaufmann and Lindauer, 1986 (El Salvador); Cox and Jimenez, 1991 (Peru); Guiso and Jappelli, 1991 (Italy); Cox, 1987 (United States)). Further, in light of recent evidence concerning private transfers and income risk (e.g., Rosenzweig, 1988) we include a dummy for whether the household head is employed and whether husband and wife are both employed. The latter reflects possible mitigation of variance in income if both husband and wife are employed. Finally, we include marital status, number of children and household size as regressors in the transfer function.

b) Results

Transfer function estimates for urban households are given in table 3. We turn our attention first to the effects of income on transfer amounts. To see how crucial the spline formulation is, compare the simple linear results in the first column of table 3 with the income-spline results in the second. In the linear-income specification, the income coefficient is negative but negligible and imprecisely estimated. In contrast, the splined estimates in column 2 indicate that income exerts a large effect on transfer amounts for households in the lowest income quartile. A one-peso increase in income for these households leads to a half-peso reduction in transfer receipts. Beyond the lowest quintile, however, income increases matter little for transfer amounts; the coefficients are small and imprecisely estimated.

These income-spline estimates are consistent with the theory presented above. The estimates suggest that altruistic transfers are important for low-income households, but that altruistic motives are not operative for those in the higher income quartiles. The splined estimates from table 3, column 1 are displayed in figure 2. Like the pattern in figure 1,

derived from the dual-motives theory for transfers, transfer amounts fall sharply with income increases for the poorest households.

Other patterns in table 3 are consistent with altruistic transfer motives as well. Large transfers appear to be targeted to households whose head is not employed. Non-employment raises transfer amounts by over 12,000 pesos. And having retirement income reduces transfer amounts by nearly 3,000 pesos.

Households whose heads are better educated receive bigger transfers. This pattern is consistent with transfers being responsive to liquidity constraints. Education raises permanent income, which in turn raises desired consumption. With current income constant and no access to capital markets, the household relies on loans and subsidies from other households to fill the gap between desired consumption and current income.³ The negative age effects are also consistent with the liquidity-constraint hypothesis, except that they are rather small.

Transfer amounts increase with household size, but for a given household size, having more children reduces transfer amounts. Part of the reason may have to do with equivalence scales. Young children are cheaper to support than adults. Another reason for the negative child effects may have to do with the provision of inter-household services. Having young children might hinder a household member's ability to provide these services. Alternatively, perhaps households with young children receive as much transfers as other households, except that such transfers are provided in-kind (in the form of babysitting, for example) rather than in cash. (The FIES does not contain information about the value of time-intensive, in-kind services that households might receive).

For a given household income, having both husband and wife employed lowers per capita income, so we might expect that with altruistic transfers the impact of dual earner

³Education effects could also be the artifacts of fixed effects for transfers, something that a cross-sectional data set like the FIES cannot shed much light on. For example, if parents who gave a lot early on are more likely to give a lot now, we would see a positive relationship between education, which was financed by early parental transfers and current transfer receipts.

status (i.e., husband and wife both work) would be positive. But dual-earner status also might reduce income variability and this reduction would make the household better off, causing a reduction in private transfers.

Female-headed and married households receive much more transfers than others. The gender effect is consistent with the long list of other studies of private transfers that find that transfers are disproportionately targeted toward women. Evidence for marriage effects for transfers is more ambiguous; some studies find positive effects and others negative ones. Before spending too much effort interpreting these coefficients, however, we explore a very simple explanation for the demographic effects.

Consider a household whose primary earner is the husband. Suppose that he travels overseas to spend a few years earning much more than he would at home. He remits to his wife and dependent children part of his earning from work abroad. (Recall that transfers from abroad are much larger on average than those from domestic sources). Then we would observe large transfers targeted toward households that are headed by women who report that they are married.

Married female household heads are indeed over-represented in the sample of households who report receiving transfers from abroad. For example, married female heads account for a bit less than 5 percent of the urban sample, but 17 percent of the sample who receive transfers from abroad.

To investigate the sensitivity of our results to the inclusion of married female heads, we deleted them from the sample and re-estimated the transfer function (table 4). The estimated gender and marital effects change a lot. The gender effect on transfers is less than one-tenth of what it was in table 3, and the marital-status effect shrinks even more.

The effects of low-quartile income, non-employment and retirement status, though still substantial, are each about a third less in absolute value compared to the estimates in table 3. Because transfers from abroad are larger than those from domestic sources,

deleting married female heads reduces average transfer receipts from 7,586 pesos (table 3) to 5,693 pesos (table 4).

Whether table 3 or 4 is more useful for making inferences about transfer behavior is largely a matter of definition. For those interested in measuring intergenerational transfers the apparent inter-spousal transfers that some married female household heads receive clearly should not be counted and estimates from table 4 are more relevant. On the other hand, the design of policies targeted toward female-headed households should take into account the possibility that an absent husband's transfer behavior might adjust to changes in policy. So there is probably just as much reason to be concerned about what motivates husband-wife transfers as there is to be concerned about what motivates, say, transfers from parents to children.⁴

We replicated the urban estimates in tables 3 and 4 for rural households (tables 5 and 6). Rural patterns for transfers are remarkably similar to urban ones. For example, the impact of lowest-quartile income on transfers is negative and large in absolute value (table 5, column 2). A one-peso increase in lowest-quartile income is associated with over a third of a peso reduction in transfers. And this effect is much larger than the one implied by the simple linear-income specification of the transfer function (table 5, column 1). Further, the transfer effect of joblessness of the household head is positive and large, just as in the urban sample.

Education, household size, gender of household head, dual earner status and number of children all produce qualitatively similar transfer effects in the rural and urban samples.

There are two differences in the urban versus the rural estimates. The first is that the effects of retirement income on transfers is much smaller in the rural sample. But very few rural households receive retirement income--2.2 percent of the rural sample versus 6.5

⁴For examples of studies that look at allocation within the nuclear family, see Thomas (1990) and Schultz (1990).

percent of the urban one. Second, the effect of age on transfers is negative in the full-sample urban estimates but positive for the rural estimates. Part of the reason for the sign difference may have to do with urban/rural differences in incidence of retirement pensions. Rural households may rely more on private transfers for old-age support than urban ones. Still, the effect of age on transfers is small in each sample.

7. Policy-Related Simulations

What are the distributional effects of policies such as the expansion of social security benefits or the creation of unemployment insurance? Usually this question is addressed by simply adding public benefits, subtracting taxes and recalculating the distribution of income as if families would not act differently once the new policy was put in place.

But there are many reasons to think that public income redistribution can affect private behavior. Forced savings from social security might cause workers to save less, and public safety nets for the unemployed might create work disincentives. We focus on a third response, that of private transfers to public income redistribution. For example, if children are currently supporting their parents and the parents can now tap increased social security benefits, the children might reduce their own transfers since public ones are helping their parents to achieve the level of consumption desirable from the children's point of view.

These private transfer responses can be expected to mitigate the distributional effects of public income redistribution, and impart bias to the simpler calculations of policy effectiveness that do not account for private responses.

We use the estimations above to investigate the private transfer response and overall policy effectiveness of three policies: unemployment insurance, social security and income grants targeted to the poor. In each case we find that private transfers cause public

income redistribution to be less effective than simple first-order calculations of policy effectiveness would indicate.

a) Unemployment Insurance

Suppose an unemployment insurance program is created, which replaces half of an unemployed worker's earnings during a spell of joblessness. How would the program affect the well-being of households whose heads are out of work? To answer this question we must calculate the private-transfer responses to the creation of unemployment insurance.

We focus on the sample of prime-aged, male household heads from urban areas who reported that they were not working. Since unemployment insurance is designed to replace lost earnings, we first must answer a preliminary question: how much would these men have earned if they did have jobs? We then simulate the private-transfer effects of replacing one-half of their earnings.

To impute earnings for the non-employed we must overcome one difficulty. Only household earnings are reported in the FIES so individual earnings can only be calculated if there is only one earner in the household. Only a fraction of the urban households (3,101 out of 8,863) had just one male earner. We want to use this sample to estimate an earnings function that we will use to impute earnings for the sample of prime-aged males that were not employed. But in estimating this earnings function we confront selection bias. Our earnings function estimates are conditional on both being employed and being the sole earner in the household. So first we estimate an earnings function controlling for these two sources of selection bias. We express both the probability of being employed and the probability of being a sole earner as a function of age, marital status, household size, number of children in three different age categories, financial income, retirement income and a dummy for low education (primary or less). We use the estimated probabilities to form the selection bias terms for the earnings function, which also contains schooling dummies, a cubic function in age, marital status and regional dummies. We then use the observable variables for the non-employed to impute their earnings.

We simulate the private-transfer effects of unemployment insurance by giving the 175 non-employed workers half of their imputed earnings. We also assumed that unemployment insurance coverage causes donors of private transfers to treat these households as if their head is now employed. So our simulation does these two things: it boosts the incomes of the 175 non-employed workers by half their imputed earnings and it shuts off the dummy variable indicating "non-employed" status.

The results of the simulation, in pesos, are summarized below:

<i>Predicted Transfers Before Unemployment Insurance</i>	16,164
<i>Boost in Household Income from Unemployment Insurance</i>	13,146
<i>Predicted Transfers After Unemployment Insurance</i>	4,224
<i>Reduction in Private Transfers from Unemployment Insurance</i>	11,940

Unemployment insurance that replaces half of estimated foregone earnings gives the 175 households headed by non-employed, prime-aged males an average of 16,236 pesos of extra income. This extra income can reduce private transfers in two ways in our simulation--through the household income effects and through the non-employment dummy. (We use the results in table 3, column 2 to perform the simulation). The simulation indicates that private transfers would fall from 16,164 pesos to 4,224 pesos. The reduction in private transfers is nearly as large as the boost in income that unemployment insurance gives to households. Ninety-one percent of the increase in household income from unemployment insurance is offset by reductions in private transfers.

Our simulation indicates that creating an unemployment insurance system for Filipino households would do no good for the targeted households. Nearly all the benefits would accrue instead to the private donors, who are likely to come from high income brackets (see table 1, column 2).

Next we investigate the connection between retirement income and transfers, again using the same estimated transfer function. We ask the following question: How much higher would private transfers be if retirement income were eliminated? Again we focus on the urban sample. Five-hundred and seventy-nine households received some retirement income and such income averaged 15,784 pesos. The predicted transfers for this sample averaged 9,573 pesos. If retirement income were eliminated, our estimates indicate that private transfers would rise to 13,127 pesos. Put another way, if retirement income did not exist, private transfers would be 37 percent $[(13,127-9,573)/9,573]$ higher. So our results suggest that expansion of social security in the Philippines would prompt substantial reductions in private transfers.

Finally, consider a program that attempts to eliminate poverty completely by giving each household below the poverty line the difference between its poverty-line income and its actual income. How do private transfers respond?

For urban households, once private transfers adjust to this public transfer program, 47.6 percent of those below the poverty line before the program would still be below the line after the program. Those still under the poverty line would have, on average, a gap of 2,622 pesos between the poverty line and their actual household income (including private transfers). For rural households, 94 percent would still be under the poverty line after such a program, and for them the average gap between poverty-line income and actual household income would be 775 pesos. Though the extent of crowding out is less in this experiment than, say, for unemployment insurance, the welfare implications could still be severe if the gap between poverty-line income and actual income prevents households from obtaining adequate nutrition or other essentials.

A striking feature of these simulations is that they all contain two background conditions that likely bias downward the magnitude of crowding out. First, if increased taxes to finance public income redistribution fall disproportionately on high-income groups, and donations of private transfers are income elastic, then such taxes would prompt further

reductions in private transfers. Second, since we had no information about donor's income, this variable was left out of the transfer functions. We would expect that (1) donor income would enter positively in the transfer functions and (2) recipient and donor incomes would be positively correlated. As a result, the coefficients of recipient pre-transfer income in the transfer functions are likely to be biased upward. For example, the coefficient of lowest-quartile income in table 3, column 2 is minus one-half. If we had information about donor income and used it in the estimations, we might find that this coefficient is actually even lower, resulting in stronger crowding-out effects.

8. Conclusion

Private transfers respond strongly to recipient pre-transfer incomes in the Philippines. Transfer patterns are consistent with those predicted by a mixed-motives model of private transfers which contains altruism as one motive. We find evidence that, at least for the poorest households, transfers they receive are motivated by altruism. Altruism, in turn, can imply that public policies to redistribute income can be weakened or even neutralized by offsets in private transfers. Our simulations imply that public transfers would indeed be less effective than they look because of private transfer responses. The "crowding out" of private transfers by public ones is not complete, however. Public transfers still benefit targeted households even after private transfers adjust.

Our results also imply that attempts to alter the income distribution are most difficult in countries that have little or no social spending because it is precisely in these settings that altruistically motivated transfers are most likely to be prevalent. In contrast, marginal changes in redistribution policies in countries that already have large public redistribution programs are more likely to be effective because, in these countries, private altruistic safety nets are likely to be less pervasive.

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Table 1

Selected Characteristics of Filipino Urban Households by Private-Transfer Status

<u>Variable</u>	(1) <u>Net Transfer</u> <u>Recipients</u>	(3) <u>Net Transfer</u> <u>Donors</u>	(3) <u>Others^a</u>	(4) <u>All</u> <u>Households</u>
Income				
Total income before transfers	46,730.30	123,720.50	81,937.29	59,522.50
Proportion with retirement income	0.063	0.078	0.066	0.065
Retirement income	862.429	2,225.170	1,014.570	1,031.140
Total income after transfers	56,796.54	122,460.44	81,937.29	67,246.81
Education				
Some primary or none	0.175	0.137	0.138	0.166
Primary graduate	0.200	0.144	0.180	0.191
Some secondary	0.125	0.114	0.117	0.123
Secondary graduate	0.221	0.203	0.227	0.219
Some university	0.141	0.133	0.163	0.143
University graduate	0.139	0.268	0.174	0.158
Other Characteristics				
Age of household head	45.376	47.072	44.715	45.482
Married	0.824	0.833	0.861	0.830
Female-headed households	0.185	0.131	0.114	0.170
Husband and wife both work	0.291	0.385	0.312	0.304
Head not employed	0.183	0.115	0.132	0.169
No. of children aged 1 or less	0.115	0.090	0.103	0.111
No. of children aged 1 to 7	0.789	0.650	0.763	0.771
No. of children aged 8 to 15	1.071	1.018	1.003	1.057
Household size	5.270	5.425	5.390	5.302
Transfers				
Proportion giving net transfers	0.000	1.000	0.000	0.110
Net transfers given (amount)	0.000	1,260.060	0.000	138.758
Proportion receiving net transfers	1.000	0.000	0.000	0.767
Net transfers received (amount)	10,066.24	0.000	0.000	7,724.31
Proportion giving gross transfers	0.429	1.000	0.008	0.441
Gross transfers given (amount)	194.22	1,511.57	2.891	315.844
Proportion receiving gross transfers	1.000	0.451	0.008	0.818
Gross transfers received (amount)	10,260.46	251.514	2.891	7,901.39
Proportion receiving from abroad	0.264	0.005	0.000	0.203
Transfers received from abroad (amount)	6,518.75	25.000	0.000	5,004.90
Number of cases	6,801	976	1,086	8,863

a. Neither a net-transfer recipient nor a net-transfer donor.

Table 2

Selected Characteristics of Filipino Rural Households by Private-Transfer Status

<u>Variable</u>	(1) <u>Net Transfer</u> <u>Recipients</u>	(2) <u>Net Transfer</u> <u>Donors</u>	(3) <u>Others^a</u>	(4) <u>All</u> <u>Households</u>
Income				
Total income before transfers	22,899.29	41,539.12	26,792.76	25,098.24
Proportion with retirement income	0.023	0.021	0.013	0.022
Retirement income	220.539	249.757	141.505	218.205
Total income after transfers	26,711.54	40,749.30	26,792.76	28,255.98
Education				
Some primary or none	0.438	0.424	0.426	0.436
Primary graduate	0.276	0.230	0.253	0.269
Some secondary	0.094	0.109	0.107	0.096
Secondary graduate	0.106	0.107	0.130	0.108
Some university	0.051	0.058	0.032	0.050
University graduate	0.036	0.071	0.051	0.041
Other Characteristics				
Age of household head	46.402	45.119	45.218	46.188
Married	0.849	0.907	0.862	0.856
Female-headed households	0.123	0.066	0.102	0.116
Husband and wife both work	0.271	0.270	0.259	0.271
Head not employed	0.094	0.040	0.063	0.086
No. of children aged 1 or less	0.129	0.102	0.108	0.125
No. of children aged 1 to 7	0.896	0.850	0.862	0.889
No. of children aged 8 to 15	1.249	1.237	1.192	1.244
Household size	5.290	5.390	5.211	5.295
Transfers				
Proportion giving net transfers	0.000	1.000	0.000	0.104
Net transfers given (amount)	0.000	789.823	0.000	81.974
Proportion receiving net transfers	1.000	0	0.000	0.828
Net transfers received (amount)	3,812.25	0	0.000	3,157.74
Proportion giving gross transfers	0.473	1.000	0.013	0.497
Gross transfers given (amount)	115.663	1,023.99	2.792	202.272
Proportion receiving gross transfers	1.000	0.611	0.013	0.893
Gross transfers received (amount)	3,927.92	234.165	2.792	3,278.04
Proportion receiving from abroad	0.126	0.009	0.000	0.105
Transfers received from abroad (amount)	1,835.43	8.075	0.000	1,521.15
Number of cases	8,332	1,044	683	10,059

a. Neither a net-transfer recipient nor a net-transfer donor.

Table 3

Ordinary Least Squares Estimates of Transfer Functions for Urban Households
Dependent Variable---Net Transfers Received^a

	(1)		(2)	
	Linear Income		Splined Income	
<u>Variable</u>	<u>Coefficient</u>	<u>t-value</u>	<u>Coefficient</u>	<u>t-value</u>
Income				
Constant	-9,678.52	-7.17	-2,188.61	-1.34
Total income	-0.001	-0.55	-.-	
Income--lowest quartile	-.-	-.-	-0.505	-7.83
Income--second quartile	-.-	-.-	0.001	0.01
Income--third quartile	-.-	-.-	0.011	0.37
Income--highest quartile	-.-	-.-	0.0002	0.16
Has retirement income	-2,889.96	-2.94	-2,996.82	-3.07
Retirement income	-0.031	-1.17	-0.035	-1.33
Education				
Primary graduate	712.499	1.02	1,354.45	1.94
Some secondary	464.935	0.59	1,071.30	1.35
Secondary graduate	3,710.70	5.32	4,639.66	6.52
Some university	6,755.37	8.72	7,633.95	9.58
University graduate	7,285.40	9.49	8,427.77	10.27
Other Characteristics				
Age of household head	-61.035	-3.14	-62.263	-3.20
Female-headed households	19,269.5	25.78	18,667.2	25.00
Married	14,153.0	18.76	14,049.5	18.70
No. of children aged 1 or less	-939.538	-1.43	-1,257.06	-1.92
No. of children aged 1 to 7	-1,117.63	-4.31	-1,346.83	-5.14
No. of children aged 8 to 15	-58.584	-0.27	-275.231	-1.23
Household size	398.802	3.06	714.493	5.09
Husband and wife both work	-3,170.09	-6.64	-2,884.60	-6.01
Head not employed	12,096.9	19.20	10,791.9	16.78
Observations	8,863		8,863	
Dependent variable mean	7,585.55		7,585.55	
R-squared	0.159		0.167	
F-statistic	98.010		88.593	

a. Dependent variable is gross transfers received minus gross transfers given.

Table 4

Ordinary Least Squares Estimates of Transfer Functions for Urban Households
 Dependent Variable---Net Transfers Received^a
 Households Headed by Married Females Excluded

<u>Variable</u>	<u>Coefficient</u>	<u>t-value</u>	<u>Variable Mean</u>
Income			
Constant	5,693.07	4.02	1.0000
Income--lowest quartile	-0.345	-6.11	18,372 ^b
Income--second quartile	-0.008	-0.16	814.8.8
Income--third quartile	0.016	0.69	9,358.1
Income--highest quartile	0.001	1.13	24,419
Has retirement income	-1,947.79	-2.42	0.067
Retirement income	-0.033	-1.47	1,029.5
Education			
Primary graduate	1,836.57	3.20	0.195
Some secondary	1,317.59	2.02	0.124
Secondary graduate	3,823.94	6.49	0.219
Some university	6,157.03	9.28	0.140
University graduate	6,113.37	8.93	0.152
Other Characteristics			
Age of household head	3.108	0.19	45.718
Female-headed households	1,590.84	1.79	0.127
Married	231.575	0.29	0.821
No. of children aged 1 or less	-842.671	-1.55	0.113
No. of children aged 1 to 7	-866.850	-3.99	0.771
No. of children aged 8 to 15	-298.812	-1.60	1.050
Household size	557.148	4.77	5.322
Husband and wife both work	-1,375.84	-3.50	0.320
Head not employed	8,139.59	14.65	0.155
Observations	8,429		
Dependent variable mean	5,692.71		
R-squared	0.067		
F-statistic	30.255		

a. Dependent variable is gross transfers received minus gross transfers given.

b. Mean income for this sample is 60,764.

Table 5

Ordinary Least Squares Estimates of Transfer Functions for Rural Households
Dependent Variable---Net Transfers Received^a

	(1)		(2)	
	Linear Income		Splined Income	
<u>Variable</u>	<u>Coefficient</u>	<u>t-value</u>	<u>Coefficient</u>	<u>t-value</u>
Income				
Constant	-4,858.25	-8.22	-1,466.38	-1.90
Total income	-0.016	-4.65	-.-	-.-
Income--lowest quartile	-.-	-.-	-0.363	-6.87
Income--second quartile	-.-	-.-	0.011	0.24
Income--third quartile	-.-	-.-	-0.074	-2.66
Income--highest quartile	-.-	-.-	-0.006	-1.70
Has retirement income	695.022	0.82	562.019	0.66
Retirement income	-0.111	-1.82	-0.105	-1.72
Education				
Primary graduate	1,272.53	5.75	1,365.55	6.17
Some secondary	1,204.49	3.77	1,391.08	4.35
Secondary graduate	2,477.25	7.93	2,719.75	8.65
Some university	4,603.22	10.81	4,893.24	11.41
University graduate	5,046.84	10.45	5,411.23	11.07
Other Characteristics				
Age of household head	19.592	2.36	12.696	1.53
Female-headed households	6,731.57	17.30	6,563.56	16.90
Married	4,717.47	12.79	4,795.61	13.04
No. of children aged 1 or less	-642.172	-2.38	-792.146	-2.93
No. of children aged 1 to 7	-495.547	-4.35	-644.242	-5.58
No. of children aged 8 to 15	-140.741	-1.39	-245.950	-2.41
Household size	347.003	5.04	526.836	7.27
Husband and wife both work	-1,076.11	-5.19	-963.984	-4.65
Head not employed	6,971.78	19.86	6,459.98	18.18
Observations	10,059		10,059	
Dependent variable mean	3,075.76		3,075.76	
R-squared	0.114		0.120	
F-statistic	75.645		68.548	

a. Dependent variable is gross transfers received minus gross transfers given.

Table 6

Ordinary Least Squares Estimates of Transfer Functions for Rural Households
 Dependent Variable---Net Transfers Received^a
 Households Headed by Married Females Excluded

<u>Variable</u>	<u>Coefficient</u>	<u>t-value</u>	<u>Variable Mean</u>
Income			
Constant	112.349	0.16	1.000
Income--lowest quartile	-0.232	-4.82	11,036
Income--second quartile	0.002	0.05	4,193.3
Income--third quartile	-0.048	-1.94	4,052.1
Income--highest quartile	-0.006	-1.72	5,928.2
Has retirement income	1,224.28	1.62	0.022
Retirement income	-0.072	-1.32	216.78
Education			
Primary graduate	1,239.37	6.30	0.26904
Some secondary	1,477.25	5.20	0.097
Secondary graduate	2,249.62	8.00	0.10634
Some university	3,244.11	8.36	0.048
University graduate	4,518.08	10.20	0.039
Other Characteristics			
Age of household head	42.586	5.73	46.318
Female-headed households	899.850	2.10	0.097
Married	404.577	1.07	0.853
No. of children aged 1 or less	-526.727	-2.20	0.126
No. of children aged 1 to 7	-448.653	-4.37	0.890
No. of children aged 8 to 15	-330.149	-3.63	1.24
Household size	483.026	7.46	5.31
Husband and wife both work	-567.108	-3.09	0.276
Head not employed	4,177.07	12.72	0.079
Observations	9,846		
Dependent variable mean	2,660.40		
R-squared	0.063		
F-statistic	32.832		

- a. Dependent variable is gross transfers received minus gross transfers given.
 b. Mean income for this sample is 25,210.

Figure 1.

The Relationship Between Private Transfers and Income

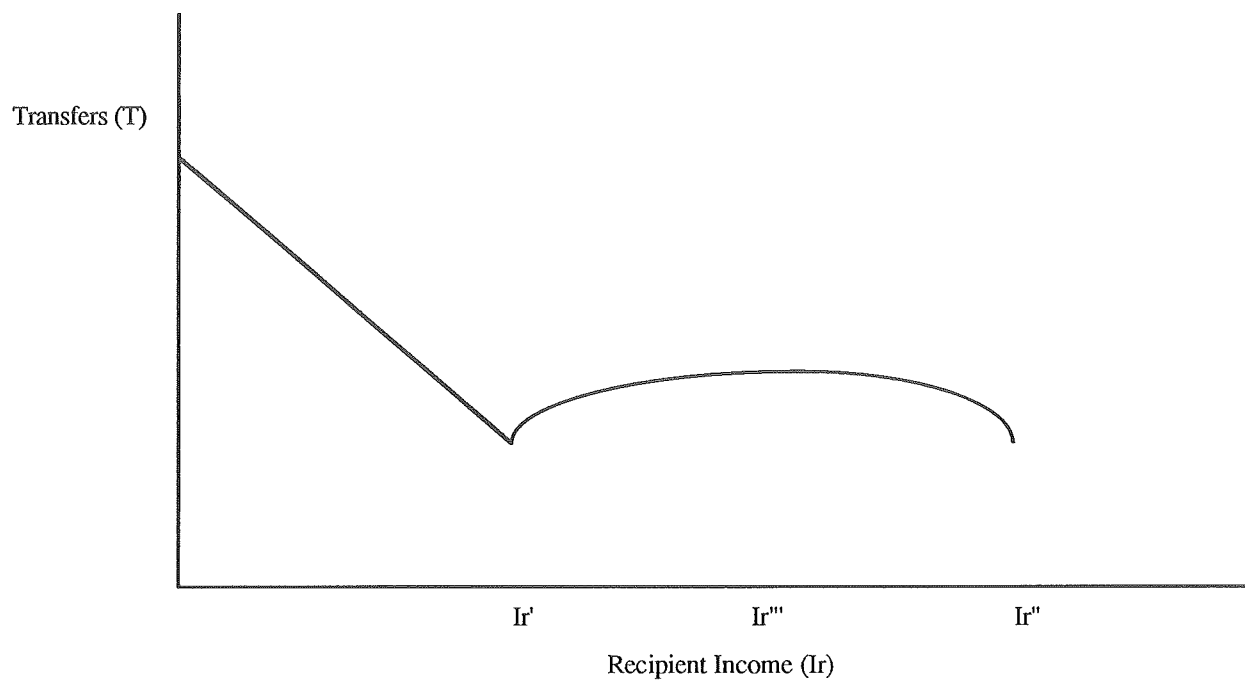


Figure 2.

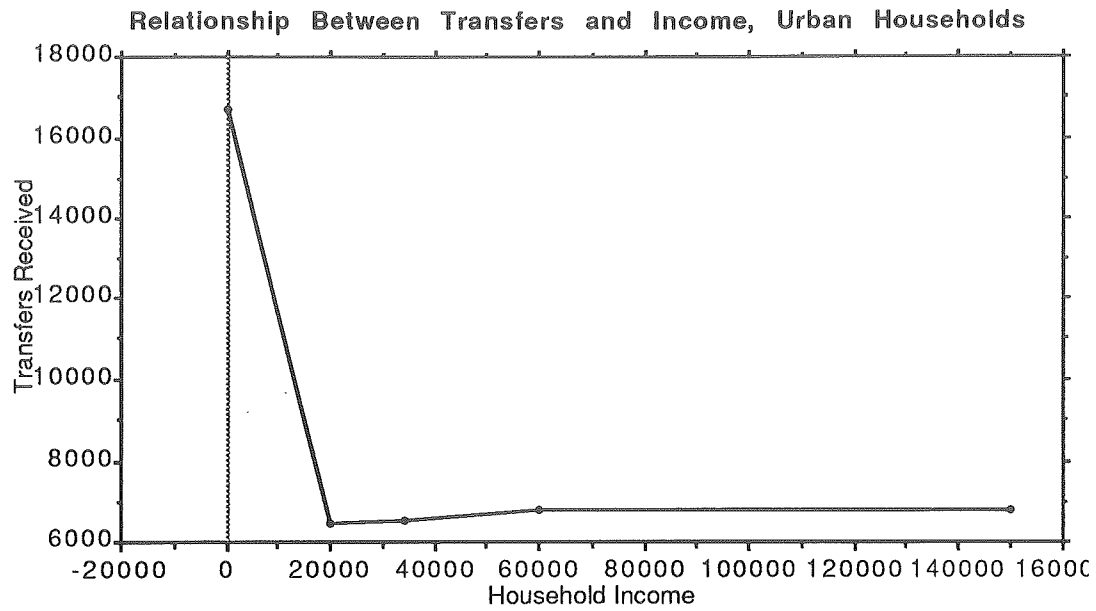


Figure 3.

