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The Case of Nepal

by

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Abstract

Using household data from Nepal for 1995-96, the estimation results of Heckman's generalized Tobit model shows that private transfers of Nepalese households were altruistically but weakly motivated. Showing neither crowding-out nor crowding-in effects, public transfers are not statistically correlated with private transfers and appear to deteriorate income distribution. Although private transfers decrease with household size, having more children or more elderly increases the probability as well as amount of transfers for a given household size. In contrast, the age of household head does not appear to be a significant factor. Furthermore it is shown that public transfers did not contribute in decreasing income inequalities among households. This suggests that the government of Nepal should design its public transfer scheme in order to improve effectiveness and efficiency of its social safety net programs.

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1. Introduction

Private transfers between family, friends and even neighbors are widespread throughout the world, especially in developing countries (see Cox and Jimenez 1990 for a survey). For example, parents frequently provide financial support to their children when they first leave home or children sometimes support their parents in old age. Understanding private transfers network is important for designing policy interventions since, among other things, private transfers provide social and economic benefits informally which are similar to those of public programs such as unemployment insurance, pension, educational credit and health insurance. Recent studies on private transfers network separately investigate the motives of private transfers and crowding out effects of public transfers on private transfers even though these two issues are inter-related.

Recent empirical findings on motives support exchange except recent studies on Korea. For example, Cox (1987), Cox and Rank (1990), Altonji et al. (1992, 1997), and Cox et al. (1998) support exchange. However, the studies on Korea before and during the financial crisis by Jimenez et al. (2002) and Kang and Sawada (2002) strongly support altruism. The existing evidences on the extent and magnitude of the crowding-out effect of public transfers are mixed. Some studies find that public transfers have little effect on private ones (e.g., Cox and Jakubson 1995; Rosenzweig and Wolpin 1994) while others (e.g., Cox and Jimenez 1992, 1995; Cox et al. 1998; Jensen 2002; Jimenez et al. 2002; Kang and Sawada 2002) found crowding-out effect.

Most of empirical findings referred above depend on probit and Tobit estimation to identify motives and crowding-out effect of public transfers. However, the standard Tobit model imposes a structure which is often too restrictive: exactly the same variables affecting the probability of a non-zero observation determine the level of a positive observation and moreover, with the same sign which is often referred to as a sample selection problem.

In order to consider this issue, this paper uses a Heckman's (1979) generalized Tobit estimation. Using household data from Nepal for 1995-96, this paper investigates

those two issues for the case of Nepal. The probit and tobit estimation results indicate that Nepalese households are altruistically motivated for both transfers received and net transfers received. However, the estimation results of a generalized Tobit estimation results support neither altruistic nor exchange motives. Independently of estimation methods, there has been no crowding-out effects of public transfers on private transfers. In addition, private transfers decrease with household size, but for a given household size, having more children or more elderly increases the probability as well as amount of transfers.

The paper is organized as follows. Section 2 provides some theoretical background from existing works on public and private transfers. Section 3 gives descriptive evidences and Section 4 discusses the estimation model and results. The final section concludes.

2. Literature

Previous studies on private transfers identify two motives of private transfers (Cox 1987, 1990): altruism (Becker 1974) and self-interested exchange (Bernheim et al. 1985). Households transfer resources out of feelings of altruism that implicitly determines the receiving household's consumption. Alternatively, donors give private transfers in order to receive something in exchange for their transfers in times of need.

The distinction between the altruistic and the exchange models has an important policy implication (Cox 1987; Cox and Jimenez 1990). Becker (1974), in his altruistic model, argues that public transfer programs will have little effect on the distribution of economic welfare. Under altruism, public transfers reduce the pre-transfer marginal utility of the recipient's consumption. Hence, if government were to tax the donor and give the proceeds to the recipient, the donor's intention to transfer will fade and she/he may decide to give less private transfers. This cutting back of private transfers in response to public redistribution is called the "crowding out" effect of public transfers. Thus, the Becker's altruism model predicts that public transfers tend to displace private transfers.

On the other hand, exchange-motivated transfers interact with public transfers in a different way. If transfers are motivated by exchange where the recipient compensates the donor by providing him some kind of services, public transfers will have little effect on private transfers (Cox 1987). In contrast to the assumption of the Becker's (1974) altruism model, the exchange model argues that crowding out between private and public transfers does not necessarily occur. Moreover, under exchange motive, public transfers may even increase the probability of receipts by providing donors additional source of income. In this case, an expansion of social insurance by government will increase the size of the risk-sharing pool and may act as an effective social safety net device for households.

The exchange motive should not cause crowding-out effects. However, existing evidences on the extent and magnitude of the crowding-out effect of public transfers are mixed. Some studies find that public transfers have little effect on private ones (e.g., Cox and Jakubson 1995; Rosenzweig and Wolpin 1994) while others (e.g., Cox and Jimenez 1992, 1995; Cox et al. 1998; Jensen 2002; Jimenez et al. 2002; Kang and Sawada 2002) have indicated that the possibility for crowding out to occur can be quite large. Cox and Jimenez (1995) estimate that if unemployment insurance system were introduced in the Philippines, private transfers would fall so much that the intended beneficiaries of the program would scarcely be any better off. In contrast, they find that the degree of crowding out associated with pensions is much less significant.

However, many households in East Asia as in Korea are likely to be altruistically linked through a widespread and operative informal transfer network. From the assumption that as public transfers increase, altruistically-linked private transfer donors may cutback their private transfer provisions, a government subsidy intended only for those people in need may indirectly benefit donors who are often from the upper-income brackets and protected from exogenous shocks. Hence, a quantitative assessment of the altruistic model is very important. If the assumption of the altruism model is verified, that is crowding-out effect is proved to exist, government is then suggested to have careful targeting schemes to ensure the effectiveness of its social safety net programs.

3. Data and Descriptive Evidence

The main data source is the Nepal Living Standards Survey (NLSS) for 1995-96 that is a multi-topic survey collecting a comprehensive set of data on different aspects of household welfare. Based on a two-stage stratified random sampling procedure, the primary sampling unit (PSU) is the ward. In the first stage of the sampling, wards were selected with probability proportional to size from each of the four ecological strata, using the number of households in the ward as the measure of size. In the second stage of the sampling, a fixed number of households were chosen with equal probabilities from each selected primary sampling unit. Note that the figures and estimation of the paper are obtained for 3310 households. 51 households were identified as outliers, as their nominal per capita income was outside a band defined as the median plus or minus five times the difference between the nominal per capita incomes of the 90th and the 5th percentiles (Central Bureau of Statistics 1996). 15 households with negative total income were excluded from the analysis as well.

Table 1 provides transfer status that is determined by whether households were net recipients or net donors of private transfers which include remittances and transfer income. 28.6 percent of households were involved with transfers as donors or recipients. For all households, net transfer receipt is 568.8 rupees which is 7% of pre-transfer income while gross transfer receipt is 766.6 rupees (10 percent of pre-transfer income). Compared to other countries, transfers are not widespread in Nepal (Cox and Jimenez 1990). Many more households (702) were net recipients than donors (246). Also, the average per capita pre-transfer income of net transfer recipients was the lowest while that of donors was the highest. The average pre-transfer income of others (households whose net receipts are zero) was in between that of recipients and donors. So it can be inferred that transfers flowed from high- to low-income households.

In addition to private transfers, public transfers are reported which includes employee provident fund and pension. As discussed above, the role of public transfers should be carefully investigated. The reason is that private transfers are likely to

originate from high-income groups. Suppose a public income transfer is targeted to a low-income household that depends in part on support coming from a high-income household. Suppose further that, in response to the public transfer program, the high-income household cut back some of its private support, showing a crowding-out effect. Then the high-income household indirectly benefits from a program ostensibly targeted to the poor.

As Table 1 indicates, public transfers in Nepal are not widespread since only 6.7 percent of households received public transfers.¹ By private transfer status, net transfer donors received the highest amount of public transfers (452.45 rupees) while households with zero net transfers received the lowest amount. In particular, the average amount of public transfers of households with positive amount of public transfers is the highest among net private transfer recipients (4020.74 rupees).

These simple comparisons of income by transfer status suggest that transfers might equalize the distribution of income. One way to gauge the impact of transfers on inequality is to look at the impact on the distribution of income according to per capita income and compare pre- and post-transfer income distribution. Table 2 indicates the distribution of private and public transfers by pre-transfer income decile and Table 3 compares the change in income before and after private or public transfers.

From Table 2 it is clear that the lowest income group did not necessarily receive the largest amount of private and public transfers. For example, the lowest 10 percent group received 639.86 rupees of net private transfers and 218.08 rupees of public transfers. However, the 60 percent decile group received the largest private transfers, 938.63 rupees and the richest 10 percent group received the largest amount of public transfers. Especially, the richest 20 percent group received the largest amount of pension.

The effect on income of private and public transfers is shown in Table 3. The income of the lowest 10 and 20 percent group after private transfers increased by 51.9

¹ Public transfers are defined as sum of employment provident fund and pension. The former is the amount received at the time of retirement. The latter is the amount received in post retirement period by civil servants, army and employees of few large public and private enterprises.

and 24.8 percent after receiving private transfers and decreased by 17.7 and 9.0 percent after receiving public transfers respectively. In general, the income of low-income groups tended to increase more after they received private and public transfers. Thus in terms of change in income, private and public transfers were targeted to low-income groups. As another way to see the impacts of private transfers, Gini coefficients can be compared before and after private or public transfers are received. The Gini coefficient for per capita income was 0.3270 and that of pre-transfer income was 0.3268 so that income distribution after private and public transfers were received was deteriorated. This effect is due to public transfers, not private transfers. The Gini coefficients for post-private and –public transfer incomes were 0.3266 and 0.3287, respectively. Thus the inclusion of public transfers increases overall income differences across households.

Table 4 provides a list of household characteristics according to private transfer status. The average age of household head was 45 years old across transfer status. Household size was 5.0 and 5.7 for net transfer recipients and donors, respectively, which implies that the household size of net donors was larger relatively. In terms of ethnicity, 41.1 percent of Chhetry and Brahmin while 22.5 of Matwali households received net transfers.² Other household head characteristics such as the proportions of female-headed and rural households, households whose head is in agriculture and fisheries and speaks Nepali are higher among net recipients than among net donors. Further, transfer recipients have less education than net donors.

4. Estimation

4.1 Model Specification

Following Cox (1990) and Cox and Jappelli (1990), consider a simple two-period model comprised of two individuals, a parent (p) and a child (k). The parent cares about the child's well-being. The parent's objective function is then

² Matwali households include Magar, Tharu, Newar, Tamang, Rai, Gurung, and Limbu. Others

$$(1) \quad U = U_1(C_{p1}, V_1(C_{k1})) + \frac{U_2(C_{p2}, V_2(C_{k2}))}{1 + \rho},$$

where U_i and V_i represent parent's and child's utility in period $i=1$ and 2 , respectively; C_{ji} implies the consumption of person j in period i for $j=p$ and k and $i=1$ and 2 ; and ρ is the subjective rate of time discount. The function U is increasing and concave in each argument, and for simplicity, the subjective rate of time preference is assumed equal for parent and child.

The parent has access to capital markets, but the child does not, so that

$$(2) \quad \begin{aligned} C_{p1} + \frac{C_{p2}}{1+r} + T_1 + \frac{T_2}{1+r} &= E_{p1} + \frac{E_{p2}}{1+r_1}, \\ C_{k1} &= E_{k1} + T_1, \end{aligned}$$

where E_{ji} and T_i represent the earnings of person j in period i and transfers from parent to child in period i . r is the market interest rate.

The final constraint is that the child does not incur a reduction in well-being from being linked to the parent:

$$(3) \quad V_1(E_{k1} + T_1) + \frac{V_2(E_{k2} + T_2)}{1 + \rho} \geq V^0,$$

where $V^0 = V_1^0(E_{k1}) + \frac{V_2^0(E_{k2})}{1 + \rho}$ denotes the child's threat-point utility.

Finally, we allow for the possibility that first-period transfers can be intergenerational loans, which the child repays with negative second-period transfers. We assume that the interest rate on such loans is at most equal to the market interest rate. This implies the non-negativity constraint:

$$(4) \quad T_1 + \frac{T_2}{1+r} \geq 0.$$

When equation (4) binds, transfers function as a private loan. Otherwise, they are a

includes Kami, Yadav/Ahir, Muslim, and Sarki.

consumption subsidy for the child.

Interior solutions for transfers allow the child to pursue a nonliquidity-constrained consumption path. Consider first the altruism case, in which condition (3) is non-binding, so that parental transfers boost child utility. Parental access to capital markets implies proportionality between his marginal utility of consumption in periods 1 and 2 (i.e., Euler equation). And operative, altruistic transfers generate proportionality between parent and child marginal utility of consumption in each period. If the parent's weighting of child utility is time-invariant, the Euler condition holds for the child as well:

$$(5) \quad \frac{\partial V_1(E_{k1} + T_1)}{\partial C_{k1}} = \frac{1+r}{1+\rho} \frac{\partial V_1(E_{k2} + T_2)}{\partial C_{k2}}.$$

Now suppose that equation (3) is binding, implying exchange regime. Though the parent cares about the child, initial condition is such that he does not want to increase the child's well-being. The parent would still be willing to make a consumption loan with above-market interest. The loan, which is repaid in the second period, lets the child follow a consumption path given by (9). So in either regime the Euler equation is obtained for the child.

Under altruism regime, since transfers allow the child to smooth his consumption, an increase in E_{k1} raises his desired first-period consumption less than dollar-to-dollar, which prompts a reduction in first-period transfers. An increase in E_{k2} also raises desired first-period consumption. With E_{k1} held constant, this implies an increase in first-period transfers. The general pattern is that transfer amounts are inversely related to contemporaneous earnings and positively related to other-period earnings.

The exchange regime can produce a different pattern. Given an interior solution, it can be shown that the first-period transfer need not be inversely related to E_{k1} . An increase in E_{k1} raises the child's threat-point utility, making borrowing terms more favorable. This can produce a positive relationship between current earnings and transfer amounts.³

³ This result is obtained in the Nash bargaining context as well. The connection between transfer

The second issue is decision of transfers. The child's marginal utility with no transfers is $\partial V_i(E_{ki})/\partial E_{ki}$. The latent variable is defined as

$$(6) \quad t = \frac{\partial V_1(E_{k1})}{\partial E_{k1}} - \frac{1+r}{1+\rho} \frac{\partial V_2(E_{k2})}{\partial E_{k2}}.$$

Transfer will occur if the latent variable is positive. From the concavity of the utility function, $t/E_{k1} < 0$, $t/E_{k2} > 0$, suggests that the latent variable t , which determines whether a transfer is inversely related to contemporaneous earnings and positively related to future earnings.⁴ In the altruistic regime, the latent variable t is positively related to parental earnings E_{pi} . On the other hand, in the lending regime, a positive relationship would exist given a connection between parental earnings and the market interest rate.⁵

An alternative way of expressing the predictions of the model is to contrast the transfer effects of current earnings versus permanent income (i.e., annualized lifetime wealth). Recasting the model in terms of permanent income and E_{k1} , as opposed to E_{k2} and E_{k1} , produces comparative statistics results that are qualitatively the same as those reported above. Transfers are targeted to those with low current income and high permanent income.

4.2 Estimation Equation

In order to identify the motives of private transfers quantitatively, we employ an empirical model of Cox (1987) and Cox et al. (1998). For the decision whether a transfer occurs, the following stochastic model of the latent variable that determines

amounts and earnings is explored in a different context in Cox (1987).

⁴ If transfers are motivated solely by parental altruism (i.e., no lending), and utility is time-separable, the transfer decision is determined solely by contemporaneous parent and child endowment-point marginal utilities of consumption and the child's future income would not affect the latent variable for current transfers.

⁵ An alternative way of expressing the predictions of the model is to contrast the transfer effects of current earnings versus permanent income (i.e., annualized lifetime wealth). Recasting the model in terms of permanent income and E_{k1} , as opposed to E_{k2} and E_{k1} , produces comparative statistics results that are qualitatively the same as those reported above. Transfers are targeted to those with

private transfer receipts of household i at time t is used:

$$(7) \quad PRT_{it} = \alpha_1 y_{it} + \alpha_2 PUT_{it} + X_{it} \beta + \varepsilon_{it},$$

where PRT is a latent variable of private transfers which is observed only when positive. Pre-transfer income and public transfers are represented by y and PUT_{it} , respectively. The matrix, X , includes various household characteristics.⁶ The last term, ε , represents the well-behaved stochastic error term.

The dependent variable of Equation (7) is a latent variable which can be observed only when positive. Therefore, we estimate the binary transfer functions by defining the following binary variables:

$$(8) \quad \mathcal{J}^{PRT}_{it} = 1 \quad \text{if } PRT_{it} > 0, \\ = 0 \quad \text{otherwise}$$

We estimate a maximum-likelihood probit model of private transfers by assuming that the error term, ε , in Equation (7) is independent and uncorrelated with PUT and X .

Note that, pre-transfer income is included as independent variable. The key to identify transfer motives is the sign for the pre-transfer income coefficient in the decision versus the amount equation. The comparative statistics results for the transfer decision are the same whether transfers are motivated by altruistic or exchange considerations (Cox 1987). This finding is important because it implies that information on transfer decisions alone is insufficient for making inferences about transfer motives. Thus the estimated coefficient for pre-transfer income in Equation (7) is not enough to identify transfer motives.

Yet, through estimation of the transfer amount equation, we can identify the

low current income and high permanent income.

⁶ The other control variables can be interpreted as the determinants of future permanent income.

transfer motives since the exchange motive predicts a negative coefficient for recipient pre-transfer income, while the altruistic motive predicts a negative sign for pre-transfer income equation (Cox 1987; Cox and Rank 1992). Hence, we also estimate the transfer amount equation by using the following

$$(9) \quad PRT_{it} = \beta_1 y_{it} + \beta_2 PUT_{it} + X_{it}\gamma + \varepsilon_{it} \text{ if } PRT_{it} > 0.$$

In estimating Equation (9), we use a Tobit model, treating the household specific term, u_i , a stochastic variable. The likelihood function to estimate random effect Tobit model involves integration over the household random effects, u_i . We utilized an approximation of the likelihood with Gauss-Hermite quadrature. Following Cox (1987), the sign hypothesis for β_1 is positive under exchange and negative under altruism. If the estimated coefficient on public transfers, β_2 , is negative, it indicates the magnitude of the crowding-out effect of public transfers.

Tobit estimates, however, are restrictive. Most importantly, the effects of the regressors on the transfer decision (i.e., probit) and amount are constrained to be proportional. This constraint can be proved to be a very poor specification of transfer behavior (Cox 1987). As a remedy, we present Heckman's (1979) generalized Tobit estimates, which are free of the proportionality restriction. The next equation to examine is the one for transfer amounts, conditioned on the event of a transfer. This equation is estimated using Heckman's (1979) two-step efficient estimators, i.e., generalized Tobit technique.

In Equations (7) and (9), the matrix of other control variables, X , includes household head's characteristics such as age, education level and occupation and household's demographic characteristics. We have two specific comments on the selection of independent variables.

First, we include age variables of household head because, as Cox (1990) emphasized, the timing of transfers over the life cycle is important especially for households facing liquidity constraints. If households are subject to binding

borrowing constraints, the transfer receipts will be concentrated at early age when current resources are low. Although even developing countries have public pensions, most of these apply only to urban workers in the formal sector (World Bank, 1989), Thus, old family members are likely to be dependent on informal supports from young family members.

Second, in order to capture the effect of transfer network of an extended family, we enter variables representing residential area, gender of household head, family size, and the number of children and elderly as a household's characteristics. Particularly, the number of children will be an important determinant of public transfers in light of the old-age insurance motives of having many children. In addition, larger households are likely to obtain a larger amount of public transfers since they have more members to support.

4.3 Estimation results

Tables 5 and 6 report the Probit, Tobit and Generalized Tobit estimation results. In order to examine the impact of different transfer status, two different dependent variables are used. Table 5 uses net transfers received while Table 6 uses transfers received. Main implications of estimation results for those different dependent variables are not significantly different. So we focus on the results of Table 5.

In probit analysis, the dependent variable is transfer receipt: transfer receipt=1 if transfer received, 0 otherwise. In (generalized) Tobit analysis, the dependent variable is transfer amount received. Inverse Mill's ratio generated from probit specified in column (1), except that regional dummies are entered. The Heckman two-step procedure is used to control for possible selection bias, though selection bias does not appear to be an important problem here.

We turn our attention first to the effects of income on transfer decision and amount, respectively. From column (1) of Table 5, transfer decision appears to be negatively related with pre-transfer income. In columns (2) and (3), the coefficients for pre-transfer income are different. Tobit estimation result appears to be negative and

significant while Generalized Tobit estimation result is positive but insignificant. For example, in column (2), a one-rupee increase in pre-transfer income leads to 0.06 rupee reduction in transfer receipts. In addition, the dummy of public transfer appears not to be significant which implies that there is no significant crowding-out or –in effect of public transfers on private transfers. This might be because public transfers are not widespread. Only 6.7 percent of households received public transfers (Table 1). No crowding-out or –in effects findings are in contrast to the findings for other countries (e.g., Cox and Jimenez 1990, 1995; Cox et al. 1998; Jensen 2002; Kang and Sawada 2002).

Households whose heads are less educated tend to receive less private transfers where the reference is college or above graduate. This pattern is consistent with the responsiveness of transfers to liquidity constraints. Education raises permanent income, which in turn raised desired consumption. With current income constant and no access to capital markets, these households rely on loans and subsidies from other households to fill the gap between desired consumption and current income. Age appears not to show strong effect, contrasting the liquidity constraint hypothesis on age (Cox 1990).

Transfers decrease with household size, but for a given household size, having more children or more elderly increases the probability as well as amount of transfers. Rural households tended to have higher probability and received larger amount while the Matwali tended to receive less in probability and amount.

As for the effects of occupational characteristics, households whose heads are clerical (clerical workers and operators and sales workers) and production workers tended to receive less transfers relative to other households, workers in agriculture as a reference. The significant and positive coefficient for female-headed household indicates that female-headed households are more likely to receive larger amounts of transfers than male-headed households—a consistent pattern across countries (Lucas and Stark 1985; Kaufman and Lindauer 1986; Cox 1987; Cox and Jimenez 1989; Kang and Sawada 2002). We should note that this result is not due to the poverty of female-headed households, since even after holding current income constant—comparing transfer amounts across households with similar income levels—the same pattern

persists. One possible reason for this finding is simply that females tend to live longer than males and may get more of old-age transfers through an altruistically-linked informal network and formal channel. Another reason may be that private transfers compensate females for wage discrimination in the formal labor market.

Other household characteristics such as age, religion (Hinduism), language (Nepali) are found to be not significant in explaining decision and amount of private transfers.

5. Conclusion

Through the estimation of econometric models with household-level cross-section panel data for 1995-96 in Nepal, this paper shows that the transfer behavior of Nepal households is altruistically motivated using Probit and Tobit analyses while Generalized Tobit analysis supports exchange motive especially for net transfers received. In addition, neither crowding-out nor crowding-in effects are found. Transfers decrease for a given household size while having more children or more elderly increases the probability as well as amount of transfers. Rural households tend to receive higher probability and larger amount while the Matwali tend to receive less in probability and amount.

In general, we may conclude that motives of private transfers need to be carefully tested and the government of Nepal needs to design public transfer schemes to at least improve income distribution. Thus the evidence suggests that the government should have designed its targeting schemes carefully in order to improve effectiveness and efficiency of its social safety net programs.

Table 1. Private and Public Transfers

	All Households	Net Transfer Recipients	Net Transfer Donors	Others
Pre-transfer income (rupees)	7687.3	6713.7	11753.4	7553.1
Private Transfers				
Net transfers received (rupees)	568.80	3451.95	0.00	0.00
Number of households	3309	702	0.00	0.00
Net Transfers given (rupees)		0.00	2239.93	0.00
Number of households		0.00	246	0.00
Gross transfers received (rupees)	766.58	3526.36	218.02	3.17
Number of households	746	701	42	3
Gross transfers given (rupees)	200.78	74.41	2457.95	3.17
Number of households	331	82	246	3
Public Transfers				
Number of households with positive public transfers	222 (6.7%)	51 (7.3%)	31(12.6%)	140(5.9%)
Number of households with no public transfers	3088(98.3%)	652(92.8%)	215(87.4%)	2221(94.1%)
Public transfer received (rupees)	235.28	286.38	452.45	197.47
Public transfer received for positive public transfers receiver (rupees)	3522.88	4020.74	3590.42	3330.12
Number of Households	3309(100.0%)	702(21.2%)	246(7.4%)	2361(71.3%)

Table 2. Average Per capita Private and Public Transfers by Decile

Percentile	Private Transfers			Public Transfers		
	Received	Sent	Net	Employment Prividant Fund	Pension	Total
Per capita pre-transfer income						
10	652.16	12.30	639.86	14.67	203.41	218.08
20	606.53	15.46	591.07	18.79	196.35	215.14
30	434.12	69.16	364.96	2.52	127.11	129.63
40	639.96	79.40	560.56	4.17	237.43	241.60
50	405.80	63.00	342.81	9.91	123.24	133.15
60	1019.82	81.20	938.63	7.39	193.07	200.46
70	452.86	48.76	404.10	15.96	172.45	188.41
80	863.99	103.13	760.87	33.86	86.85	120.71
90	1115.81	382.41	733.40	64.16	300.05	364.21
100	1476.87	1155.83	321.04	36.76	505.63	542.38
Average	766.58	200.78	565.80	20.81	214.47	235.28

Table 3. Average Per capita Income by Decile

Percentile	Pre-transfer income	Post private transfer income	Percentage change	Post-public transfer income	Percentage change
Per capita pre-transfer income					
10	1232.74	1872.60	51.9%	1450.82	17.7%
20	2384.93	2976.00	24.8%	2600.08	9.0%
30	3204.70	3569.66	11.4%	3334.32	4.0%
40	3960.09	4520.65	14.2%	4201.70	6.1%
50	4834.45	5177.25	7.1%	4967.60	2.8%
60	5892.33	6830.96	15.9%	6092.79	3.4%
70	7213.34	7617.44	5.6%	7401.75	2.6%
80	9096.68	9857.54	8.4%	9217.38	1.3%
90	12666.00	13399.4	5.8%	13030.2	2.9%
100	26444.49	26765.54	1.2%	26986.88	2.1%
Average	7687.31	8253.11	7.4%	7922.59	3.1%
Gini	0.3268	0.3266		0.3287	

Table 4. Means for Selected Variables by Private Transfers Status

	All Households	Net Transfer Recipients	Net Transfer Donors	Others
Age	44.7	45.5	45.6	44.3
Household size	5.57	5.04	5.74	5.72
Number of children	1.41	1.40	1.33	1.43
Number of elderly	0.35	0.45	0.38	0.32
Female	13.6%	31.7%	4.9%	9.1%
Male	88.4%	68.3%	95.1%	90.9%
Urban	20.5%	16.8%	27.6%	20.9%
Rural	79.5%	83.2%	72.4%	79.1%
Marital Status				
Married	84.9%	79.6%	92.3%	85.6%
Divorced	0.5%	1.0%	0.8%	0.4%
Separated	0.8%	0.4%	4.9%	0.9%
Widow/widower	11.6%	15.7%	2.0%	11.1%
Never married	2.2%	3.3%	0.0%	2.0%
Religion				
Hindu	87.2%	87.7%	89.7%	86.9%
Non-Hindu	12.8%	12.3%	10.3%	13.1%
Language				
Nepali	75.0%	77.3%	71.7%	74.6%
Maithili	8.8%	9.8%	9.0%	8.5%
Others	16.2%	12.9%	19.4%	16.9%
Ethnicity				
Chhetry and Brahmin	37.3%	41.1%	39.5%	36.0%
Matwali	29.2%	22.5%	21.9%	31.9%
Others	33.5%	36.4%	38.7%	32.1%
Education				
Never attended	63.9%	70.8%	46.9%	63.7%
Primary	13.7%	9.6%	14.2%	14.9%
Secondary	19.1%	15.1%	32.5%	18.8%
Above college	3.2%	4.0%	6.1%	2.6%
Other	0.1%	0.4%	0.0%	0.0%
Occupation				
Agriculture/fisheries	64.7%	72.6%	56.4%	63.3%
Professional and technical,	5.9%	6.1%	9.5%	5.4%
Clerical	11.8%	6.1%	20.5%	12.5%
Production	10.2%	6.0%	7.7%	11.6%
Not working	7.5%	9.3%	6.0%	7.2%
Number of Households	3309	702	246	2361

Table 5. Estimation Results for Net Transfers Received

	Probit		Tobit		Generalized Tobit	
	Coef.	Robust z-ratio	Coef.	z-ratio	Coef.	z-ratio
Pre-transfer income/10 ⁴	-0.042	(3.48)**	-1083.7	(3.43)**	746.8	(1.91)
=1 if public transfer recipients	0.206	(1.80)	7376.7	(2.15)*	4494.8	(1.09)
Age	-0.022	(1.91)	-631.9	(1.79)	171.2	(0.47)
Age squared/10 ²	0.026	(2.09)*	724.9	(1.91)	-96.6	(0.24)
=1 for Hindus	0.055	(0.62)	-1464.6	(0.53)	-3984.6	(1.23)
=1 for Nepali	0.049	(0.68)	2689.1	(1.15)	4897.8	(1.78)
=1 for Chhetry or Brahmin	-0.132	(1.81)	-3001.1	(1.26)	-315.4	(0.11)
=1 for Matwali	-0.221	(3.14)**	-5286.2	(2.29)*	-873.4	(0.28)
=1 for urban households	-0.051	(0.59)	1704.8	(0.62)	9582.3	(2.81)*
=1 for female household head	1.031	(12.48)**	29647.1	(11.63)**	14849.4	(2.30)*
Household size	-0.045	(2.63)**	-446.73	(0.87)	1500.7	(2.08)*
=1 if married	-0.072	(2.42)**	-1146.93	(1.35)	492.9	(0.50)
=1 if never attended school	-0.663	(3.42)**	-30260.1	(5.20)**	-22069.0	(3.01)**
=1 if primary graduate	-0.677	(3.33)**	-30611.2	(5.05)**	-21660.3	(2.78)**
=1 if secondary graduate	-0.518	(2.80)**	-23537.4	(4.19)**	-15477.2	(2.25)*
Number of children aged 9 or less	0.088	(3.27)**	2245.9	(2.49)*	130.1	(0.11)
Number of elderly above 60	0.211	(3.63)**	6914.7	(3.79)**	3538.2	(1.55)
=1 if professional workers	-0.006	(0.04)	-4164.9	(0.97)	-9520.2	(1.95)
=1 if clerical workers	-0.401	(3.58)**	-15867.2	(4.26)**	-14454.0	(2.66)**
=1 if production workers	-0.300	(2.85)**	-8606.3	(2.53)**	-3840.6	(0.81)
=1 if students or unemployed	-0.146	(1.24)	-1338.5	(0.38)	5691.9	(1.44)
Constant	0.368	(1.13)	10228.1	(1.01)		
Inverse Mill's Ratio					8068.3	(0.97)
Observations	3120		3120		3120	

Note: 1) In probit analysis dependent variable is net transfer receipt: net transfer receipt=1 if transfer received, 0 otherwise. In (generalized) Tobit analysis dependent variable is net transfer amount received. 2) Inverse Mill's ratio generated from probit specified in column (1) except that regional dummies are entered. 3) Absolute value of z statistics in parentheses 4) * significant at 5%; ** significant at 1%.

Table 6. Estimation Results for Transfers Received

	Probit		Tobit		Generalized Tobit	
	Coef.	Robust z-ratio	Coef.	z-ratio	Coef.	z-ratio
Pre-transfer income/10 ⁴	-0.025	(2.38)*	-635.2	(2.27)*	311.0	(0.81)
=1 if public transfer recipients	0.178	(1.58)	6337.7	(1.93)	3828.9	(0.97)
Age	-0.023	(2.04)*	-625.0	(1.85)	346.1	(1.07)
Age squared/10 ²	0.026	(2.13)*	699.4	(1.93)	-259.1	(0.72)
=1 for Hindus	0.070	(0.80)	-1416.1	(0.53)	-4153.5	(1.35)
=1 for Nepali	0.002	(0.04)	1707.0	(0.77)	5636.9	(2.22)*
=1 for Chhetry or Brahmin	-0.135	(1.89)	-2742.1	(1.20)	-740.8	(0.28)
=1 for Matwali	-0.252	(3.65)**	-5855.9	(2.65)**	1430.9	(0.47)
=1 for urban households	-0.042	(0.50)	1502.5	(0.58)	8743.8	(2.77)**
=1 for female household head	1.039	(12.63)**	29424.5	(11.98)**	12293.9	(1.98)*
Household size	-0.046	(2.81)**	-479.4	(0.98)	1676.2	(2.66)**
=1 if married	-0.081	(2.75)**	-1387.3	(1.69)	462.1	(0.47)
=1 if never attended school	-0.655	(3.51)**	-29840.1	(5.45)**	-20862.7	(2.82)**
=1 if primary graduate	-0.639	(3.29)**	-29317.5	(5.15)**	-19950.2	(2.62)*
=1 if secondary graduate	-0.498	(2.78)**	-22804.8	(4.34)**	-14657.8	(2.23)*
Number of children aged 9 or less	0.084	(3.13)**	2033.4	(2.37)*	-254.3	(0.23)
Number of elderly above 60	0.237	(4.20)**	7194.4	(4.14)**	2596.1	(1.15)
=1 if professional workers	-0.026	(0.19)	-3287.3	(0.81)	-5174.6	(1.13)
=1 if clerical workers	-0.321	(3.04)**	-13197.6	(3.86)**	-12942.6	(2.77)**
=1 if production workers	-0.333	(3.20)**	-9114.3	(2.78)**	-2426.6	(0.51)
=1 if students or unemployed	-0.168	(1.44)	-1788.1	(0.52)	6317.5	(1.63)
Constant	0.500	(1.54)	12174.5	(1.26)		
Inverse Mill's Ratio					4418.0	(0.55)
Observations	3120		3120		3120	

Note: 1) In probit analysis dependent variable is net transfer receipt: net transfer receipt=1 if transfer received, 0 otherwise. In (generalized) Tobit analysis dependent variable is net transfer amount received. 2) Inverse Mill's ratio generated from probit specified in column except that regional dummies are entered. 3) Absolute value of z statistics in parentheses 4) significant at 5%; ** significant at 1%.

References

- Altonji, J., F. Hayashi and L. J. Kotlikoff, 1992, "Is the Extended Family altruistically Linked? Direct Tests using Micro Data," *American Economic Review* 82(5), 1177-1198.
- Altonji, J., F. Hayashi and L. J. Kotlikoff, 1997, "Parental Altruism and Invervivos Transfers: Theory and Evidence," *Journal of Political Economy* 105 (6), 1121-1166.
- Becker, G., 1974, "A Theory of Social Interactions," *Journal of Political Economy* 82, 1063-93.
- Bernheim, B. Douglas, A. Shleifer, and L. H. Summers, 1985, "The Strategic Bequest Motive," *Journal of Political Economy* 93, 1045-1076.
- Central Burean of Statistics, 1996, *Nepal Living Standards Survey 1995-96: Statistical Reoprt*, National Planning Commission Secretariat His Majesty's Government, Nepal.
- Cox, D., 1987, "Motives for Private Income Transfers," *Journal of Political Economy* 95, 508-546.
- Cox, D., 1990, "Intergenerational Transfers and Liquidity Constraints," *Quarterly Journal of Economics* 105, 187-215.
- Cox, D., Z. Eser, and E. Jimenez, 1998, "Motives for Private Transfers over the Life Cycle: An Analytical Framework and Evidence for Peru," *Journal of Development Economics* 55, 57-80.
- Cox, D., and G. Jakubson, 1995, "The Connection between Public Transfers and Private Interfamily Transfers," *Journal of Public Economics* 57, 129-167.
- Cox, D., and G. Jappeli, 1995,
- Cox, D. and E. Jimenez, 1990, "Achieving Social Objectives through Private Transfers: A Review," *World Bank Economic Review* 5(2), 205-218.
- Cox, D. and E. Jimenez, 1992, "Social Security and Private Transfers in Developing Countries: The Case of Peru," *World Bank Economic Review* 6 (1), 155-169.
- Cox, D. and E. Jimenez, 1995, "Private Transfers and the Effectiveness of Public Income Redistribution in the Philippines," in D. van de Walle and K. Nead, (eds.), *Public Spending and the Poor: Theory and Evidence*, Baltimore: John Hopkins University Press.

- Cox, D. and M. R. Rank, 1990, "Inter-vivos Transfers and Intergenerational Exchange," *The Review of Economics and Statistics* 74, 305-314.
- Heckman, J., 1979, "Sample Selection Bias as a Specification Error," *Econometrica* 47, 153-161.
- Jensen, R. T., 2002, "Do Private Transfers 'Displace' the Benefits of Public Transfers? Evidence from South Africa," *Journal of Public Economics*, forthcoming.
- Jimenez E., S. Kang and Y. Sawada, 2002, "Do Public Transfers Crowd out Private Transfers in Korea during the Financial Crisis?" mimeo, University of Tsukuba.
- Kang, S. and Y. Sawada, 2002, "Are Private Transfers Altruistically Motivated? The Case of Korea before and after the Financial Crisis," mimeo, University of Tsukuba.
- Kang, S. and M. Lee, 2002, "Analysis of Private Transfers with Panel Fixed Effect Censored Model Estimator," mimeo, University of Tsukuba.
- Kaufman, D. and D. Lindauer, 1986, "A Model of Income Transfers for the Urban Poor," *Journal of Development Economics* 22, 337-350.
- Lucas, R.E.B. and O. Stark, 1985, "Motivation to Remit: Evidence from Botswana," *Journal of Political Economy*, 93, 901-918.
- Rosenzweig, M.R. and K.I. Wolpin, 1994, "Parental and Public Transfers to Young Women and Their Children," *American Economic Review* 84, 1195-1212.
- World Bank, 1999, *Nepal: Poverty at the Turn of the Twenty-First Century*, Main Report and Background Studies, internal discussion paper 174, World Bank.