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Upstream Intergenerational Transfers

Frank A. Sloan,* Harold H. Zhang,† and Jingshu Wang‡

This study analyzes upstream intergenerational transfers from middle-aged children to their elderly parents. We formulate a model in which the middle-aged child transfers both money and time to an elderly parent based on an altruistic motive. We examine substitution between financial transfers and time transfers using data from the Health and Retirement Study (HRS). Empirical results support the assumption that upstream transfers are motivated by altruism, particularly financial transfers. Parents financially worse off than their middle-aged children receive more money. They are more likely to live nearby if not coresident. Overall, the results for time transfers provide weaker support for our model than financial transfers. A child with a high wage tends to transfer money rather than time, suggesting that the two types of transfers are partial substitutes.

1. Introduction

Intergenerational transfers, both of money and of time, have long interested economists and other social scientists. From a policy perspective, transfers from adult children to parents are important. Historically, families in all countries have provided the most important safety net for elderly persons. Although this safety net has become somewhat more limited in recent years, especially in developed countries (Norton 2000), partly in response to the growth of public assistance, understanding the motives for support of elderly persons remains an important topic.[1] Several motives for such transfers have been proposed. These include altruism, exchange, provision of self-insurance within families, and, in the sociological literature, reciprocity.[2] In an altruistic model, a donor derives utility from increased welfare of others. The exchange model assumes that the motive for helping others is to receive something in return. In the insurance model, the motive for transferring "upstream" is to provide elderly parents with insurance against uncertain dates of death. Reciprocity means that people feel obligated to return favors of others. The vast majority of studies have gauged motives based on income of the transfer recipient. In particular, the altruism model predicts that (i) the probability of transfer and (ii) the amount transferred conditional on a transfer is negatively related to the recipient's income (Becker 1981; Cox 1987). Moreover, this model predicts that a decrease of one dollar in the recipient's income, together with an increase of one dollar in the donor's income, results in a one-dollar reduction in transfers between them (Al-

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[1] In developing countries, such as India (Cox and Jimenez 1998) and Peru (Cox, Eser, and Jimenez 1998), private transfers also serve to offset fluctuations in households. Private support from younger relatives tends to be more important in these countries than in the United States.

[2] See, e.g., Becker (1981); Kotlikoff and Spivak (1981); Bernheim, Shleifer, and Summers (1985); Cox (1987); Cox and Rank (1992); and Henretta et al. (1997).

tonji, Hayashi, and Kotlikoff 1997), assuming that donors do not update their expectations of that person's future income based on the recipient's current income (McGarry 2000).[3]

In the most cited empirical study of exchange, Bernheim, Shleifer, and Summers (1985) infer support for the exchange motive from a positive relationship between the number of contacts with parents and parents' bequeathable wealth. This finding, however, is not supported by empirical evidence from other recent studies (e.g., McGarry and Schoeni 1995; Sloan, Hoerger, and Picone 1996; Sloan, Picone, and Hoerger 1997; Perozek 1998). More fundamentally, a negative relationship between recipient income and transfers is consistent with an exchange model as well as altruism. In a study of intergenerational transfers in Malaysia, Lillard and Willis (1997) find evidence in support of exchange.[4] Their evidence for the exchange motive is that people are more likely to transfer money and transfer more to other people when they received time help from others. Although the results are interesting, this behavior can also be explained by double-sided altruism (Stark and Falk 1998).

In this study, we formulate a model to provide a framework for empirical analysis in which a middle-aged child transfers both money and time to an elderly parent based on altruism. The goal of our study is not to test alternative motives. We use an altruistic model to examine substitution between financial transfers and time transfers using data from the Health and Retirement Study. Rather than focusing on a single type of transfer, as many other studies have done, we investigate determinants of several types of transfers from adult children to elderly parents: coresidence with parents, living distance from noncoresident parents, money transfers, time spent doing chores, time spent performing tasks for parents limited in activities of daily living, and frequency of contact with parents. Assessing several kinds of transfers permits an assessment of the breath and depth of the private safety net for the elderly, at least from the perspective of one adult child. By investigating several transfers, we can not only determine whether the results of one type generalize to others but also study trade-offs between various types of transfers.

We find that, holding child wealth and other factors constant, parents who were financially worse off relative to their children receive more financial help. However, this help tends to be very limited in magnitude, hardly providing a safety net for very needy elders. Child time prices matter to the extent that higher-wage children donate more money to their parents. The effect of the child's time price on provision of time to parents tends to be negative. Parents residing in nursing homes receive less time and attention from children. Taken in combination with empirical evidence from other studies, this result suggests some crowding out of private effort by the major public program that finances nursing home care, Medicaid. Section 2 presents our model and comparative statics results. Section 3 describes the data, empirical specification, and estimation methodology. Section 4 discusses our empirical results. In section 5, we compare our results with those from previous studies and discuss implications of our findings.

2. Conceptual Framework

The Model

Consider two individuals, an altruistic middle-aged adult (M) and her elderly parent (P). Child utility is a function of her parent's well-being. M can improve her parent's utility by providing

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[3] As a practical matter, the data set used in our study does not have sufficient information to gauge the marginal effect of a change in recipient income on private transfers to that individual.

[4] They also provide an excellent summary of alternative theories of intergenerational transfers.

financial support, paying her parent's medical or nursing home bills, and/or providing services to her parent, such as help in dressing and eating or by visiting. The parent lives on wealth accumulated when young. She also receives financial transfers from M and enjoys help provided by M. In addition, the parent may be subsidized by the government, either in kind or with money. M is the decision maker. The parent affects M's decisions through the value she places on her own consumption and services provided by M. Utility functions for M and P are given by

$$V = V(c_m, U), \qquad U = U(c_p, s, g), \tag{1}$$

where V is M's utility, c_m is her consumption, U is her parent's utility, c_p is the parent's consumption, s is the time transferred from M to P, and g is the government in-kind transfer to P.[5] One reason s differs from g is that P may value services received from a child more than those from the government in that companionship and demonstration of affection from the child to the parent is jointly supplied with help.[6] The utility functions have the following properties:

$$V_1 > 0, \quad V_2 > 0, \quad U_1 > 0, \quad U_2 > 0, \quad U_3 > 0,$$
$$V_{11} > 0, \quad V_{12} > 0, \quad V_{22} < 0, \quad U_{11} > 0, \quad U_{22} < 0, \quad U_{33} < 0.$$

Subscripts refer to arguments in the functions. The marginal utility of M's consumption increases as P's utility increases ($V_{12} > 0$). Consumption of M and her parent's well-being are complements. Intuitively, if P is doing well, M is happier. The child allocates her time between work and care. Budget constraints are

$$\begin{aligned} C_m &\leq y_m + w(L - s) - T \quad \text{for } M, \text{ and} \\ C_p &\leq y_p + T \quad \text{for } P, \end{aligned} \tag{2}$$

where y_m and y_p are M and P's wealth, respectively; w is M's wage rate; L is the total number of hours that M can supply to labor market; and T is the financial transfer to P from M. We assume, for simplicity, that services that M provides P do not have a perfect market substitute. These are services, either in the form of informal care or just companionship that parents prefer to be provided by their children rather than by someone they hire (see Cox 1987). Exogenous government transfers of money to P are included in y_p.[7]

Assuming nonsatiation, the budget constraint for P becomes an equality. Thus, P's consumption is completely determined by transfers from M and P's wealth. Government transfers are taken as given. M sets financial transfers, time transfers, and her own consumption to maximize Equation 1 subject to Equation 2. First-order conditions for time and financial transfers are

$$V_2 U_2 - w V_1 = 0 \quad \text{for time transfers,} \tag{3}$$
$$V_2 U_1 - V_1 = 0 \quad \text{for money transfers.} \tag{4}$$

Optimal levels of time and financial transfers are set at the point where the increase of M's utility from P's increased utility equals the decrease in M's utility from a decrease in her consumption due to the time transfer. Combining the two equations,

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[5] Our model does not allow the parent to obtain utility from her bequest.

[6] This assumption is likely to hold for all limitations in instrumental activities of daily living (managing finances, doing laundry, and so on) and for some limitations in activities of daily living, such as help getting in and out of bed and help getting around the home, but not necessarily with more personal tasks, such as bathing and toileting.

[7] Realistically, government transfers may be endogenous, given the presence of the program. However, program implementation is plausibly exogenous to the family.

Table 1. Results of Comparative Statics Analysis

Effect	Expression	Sign
dT/dy_m	$(V_{12}U_1 - V_{11})/(A + (wU_{12} - U_{22})/(U_{12} - wU_{11})B)$	+
ds/dy_m	$(V_{12}U_1 - V_{11})/(B + (U_{12} - wU_{11})/(wU_{12} - U_{22})A)$	+
dT/dw	$((V_{12}U_1 - V_{11})(L - s) + U_1/(wU_{12} - U_{22})B)/(A + (wU_{12} - U_{22})/(U_{12} - wU_{11})B)$	+
ds/dw	$((V_{12}U_1 - V_{11})(L - s) - U_1/(U_{12} - wU_{11})A)/(B + (U_{12} - wU_{11})/(wU_{12} - U_{22})A)$	?
dT/dy_p	$((V_{22}U_1 - V_{12})U_1 + V_2U_{11} - (U_{12} - wU_{11})/(wU_{12} - U_{22})B)/(A + (wU_{12} - U_{22})/(U_{12} - wU_{11})B)$	−
ds/dy_p	$(V_{12}U_1 - V_{11})/(B + (U_{12} - wU_{11})/(wU_{12} - U_{22})A)$	+
dT/dg	$((V_{22}U_1 - V_{12})U_3 + V_2U_{13} + (wU_{13} - U_{23})/(wU_{12} - U_{22})B)/(A + (wU_{12} - U_{22})/(U_{12} - wU_{11})B)$	?
ds/dg	$((V_{22}U_1 - V_{12})U_3 + V_2U_{13} - (wU_{13} - U_{23})/(U_{12} - wU_{11})A)/(B + (U_{12} - wU_{11})/(wU_{12} - U_{22})A)$	−
A	$(V_{12}U_1 - V_{11}) - (V_{22}U_1 - V_{12})U_1 - V_2U_{11}$	+
B	$w(V_{12}U_1 - V_{11}) - (V_{22}U_1 - V_{12})U_2 - V_2U_{12}$	+

$$\frac{1}{w}U_2 = U_1.$$

The parent's marginal utility from receiving one dollar from the child (U_1) equals the parent's marginal utility of receiving the time transfer worth of a dollar measured in terms of M's wage. If the equality does not hold, welfare of both can be improved by reallocating financial and time transfers.

Comparative Statics Analysis

Using comparative statics analysis, we assess effects of exogenous changes in M's wealth and wage rate, P's wealth, and the government in-kind subsidy to P on M's optimal choice of financial and time transfers. To determine effects of these exogenous changes, we differentiate Equation 2 and Equation 3 with respect to y_m, w, y_p, and g (Table 1).

Signs of the effects of M's and P's wealth and M's wage on T and s depend on the sign and magnitude of U_{12}. The analysis is simplified if (i) P's consumption and time provided by M are complements ($U_{12} > 0$); (ii) the magnitude of V_2U_{12} is small, which holds if M is not very altruistic (V_2 is small); and/or (iii) consumption and time transferred to P is not too strongly complementary.

First, when M becomes wealthier, she transfers both more money and more time to her parent. Second, increasing M's wage rate increases the money transfer from M to P. The effect of increasing M's wage rate on time transfers, however, is ambiguous. There are two offsetting effects. When M's wage rate increases, she is wealthier than before. For this reason, she transfers more money to P. But when M's wage rate increases, her opportunity cost of time also increases. This reduces the amount of time provided to her parent. Third, when the parent becomes wealthier, M transfers less money to P. However, M transfers more time to P to complement P's consumption increase.

Signs of the effects of public in-kind transfers to P on T and s also depend on the signs and magnitude of U_{13}, U_{23}, and U_{12}. If P's consumption and in-kind public transfers received are complements ($U_{13} > 0$), time from M and the in-kind transfer are substitutes ($U_{23} < 0$) (as is plausible since both types potentially improve P's functioning), and V_2U_{13} is small, then (ds/dg) is

negative. Thus, an increase in government in-kind transfers to P crowds out private time transfers. The effect on private financial transfers, however, is ambiguous. The complementarity between government in-kind transfers and P's consumption results in increased private financial transfers. The complementarity between private time transfers and P's consumption, however, requires that private financial transfers be reduced. Thus, the net effect of increasing the government in-kind transfers on private financial transfers (dT/dg) depends on which of the previously mentioned effects dominates.

3. Empirical Analysis

Data

The Health and Retirement Study (HRS) is a national panel survey of U.S. households. The HRS sampled individuals born between 1931 and 1941 and their spouses or partners. The first wave was conducted in 1992. Follow-up interviews were conducted by telephone every two years. In wave 1, 12,652 respondents in 7703 families were interviewed. In subsequent waves, observations were lost because of death and loss to follow-up.

The interviews obtained detailed information on respondent's current and previous work status, compensation, future plans, health and functional status, and family relationships. Of particular interest to this study is the information obtained on living arrangements, financial transfers, and time transfers to each of the respondent's parents. As might be expected from a survey that focuses on middle-aged individuals, information about parents is much more limited than is information on their middle-aged children. But surveys of elderly persons uniformly contain much less information on such children than what the HRS provides.[8] The survey also has detailed information about respondents' children and money transfer to and from their children.

The HRS asks the female respondent (if there was a female; otherwise, the male) questions about financial and time assistance in each wave. The questions differ somewhat among the waves. In our study, we use information for the transfer variables from wave 4. The money transfer question is, "Not counting any shared housing or shared food, did you (or your spouse/partner) give financial help to your (parents/mother/father) amounting to $500 or more (since last interview/in the last two years)?" "Financial assistance" is defined in the survey as "giving money, helping pay bills, or covering specific types of costs such as those for nursing home care, in-home care, medical care or insurance, schooling, down payment for a home, rent, etc."

The time transfer question on providing personal care to a parent is, "How about another kind of help: Have you (or your husband/partner) spent 100 or more hours (since last interview/in the last two years) helping your (parent/mother/father) with basic personal needs like dressing, eating, and bathing?"

Another set of questions on time transfers asks if the respondent spent 100 or more hours on helping parents with other things, such as household chores, errands, transportation, and so on during the last two years before the interview. All the transfer questions are asked in the same format: first to ascertain if the amount of transfer is over a certain threshold level, second to ascertain who

[8] For example, the AHEAD survey has rich detail on elderly parents. However, we chose the HRS over AHEAD because the HRS has much more information about characteristics of the donor than does AHEAD. AHEAD has more information on recipients of help.

was helped if the respondent answered yes, and finally to obtain the actual amount of money or hours of time transferred.

Some interviewers ignored the threshold and provided the amount of money or hours of time below it. When this occurred, we set the number at the HRS threshold level. Since the thresholds are not high and apply to a two-year recall period, errors introduced by these assumptions are at most minor.

A separate question asks about the frequency of contact either by telephone or in person: "In the past 12 months, how often have you or your (husband/partner) had contact—either in person or by phone or mail—with (him/her/them)?" Possible answers are, "more than once a week, about once a week, once or twice a month, less than once a month, or almost never." For each living parent or parent-in-law, the HRS asks about living arrangements—living with the respondent, alone, with another child, with other relatives, or in a nursing home—and other questions, such as the parent's age; home ownership; whether he/she needs help with basic activities like dressing, eating, or bathing; whether he/she can be left alone for an hour or more; and the financial situation—whether it was same as, better, or worse than the respondent's. These variables come from wave 3. The information on very elderly parents from the HRS, which focuses on middle-aged persons, is limited relative to surveys of very elderly persons.

For purposes of analysis, we construct a data set with the parent household as the observational unit. We consider parents as two separate observations if they are both alive. There are 9465 respondents, who are also included in all four waves from 1992 to 1998. Among these, 3082 respondents still had at least one living parent in 1998, resulting in a parents' sample size of 3577.

Empirical Specification

Dependent Variables

For living arrangements, we assess the probability at wave 3 that the parent and the middle-aged respondent live together at the interview date and, alternatively, for those not living together, the probability that the parent and respondent live within 10 miles of each other.[9] By focusing on these two kinds of individuals, we can utilize information on both parent and respondent without having to include detailed information on other potential caregivers, which is sparse in the HRS. When parent and child live together, the child can provide a variety of services to the parent at low time (per unit of service) cost. Children are likely to help parents in ways not measured by HRS. For those children not coresiding with parents, living nearby also facilitates helping.

In all analysis except for living arrangements, cases in which parent and respondent live together are dropped. For money transfers, the dependent variables are the probability that the respondent gave the parent $500 or more during the past two years and the log of the actual amount transferred given that a transfer of at least $500 was made. For time transfers, we specify two alternative dependent variables, one for time the respondent spent caring for the parent and the other for time the respondent spent doing chores for the parent. For these types of help, the HRS uses a 100-hour threshold for hours of time provided to parents in the past two years. Again, using logit analysis, we estimate probability equations for having provided at least this much help

[9] Intergenerational living arrangements are often a form of intergenerational transfers. Intergenerational living is more common when the child is a young adult than when the child is middle aged. Rosenzweig and Wolpin (1994) analyze intergenerational living arrangements as a transfer. Hoerger, Sloan, and Picone (1996) assess determinants of living arrangements of disabled elderly adults.

and, conditional on satisfying the threshold, the log of the amount of help the respondent provided the parent.[10]

For frequency of contact between the respondent and the parent, using ordered logit, we assess the probability of being in one of five possible frequency of contact groups: "contact more than once a week" (4), "about once a week" (3), "one or two times in a month" (2), "less than once a month" (1), and "almost never" (0).

Transfer variables come from wave 4 of the HRS. Since the transfer variables are based on up to a two-year recall period, we use information for explanatory variables from wave 3. Thus, we assume that individuals made transfer decisions during the wave 3 to wave 4 interval based on conditions at the wave 3 interview. If an explanatory variable is missing from wave 3, we replace the missing value with a value from the most recent wave from which we could obtain a value. Cash and time transfers are analyzed separately.[11]

Explanatory Variables

Key variables from the theory pertain to wealth of the parent and the middle-aged respondent and the respondent's wage. Furthermore, the parental health and demographic variables are useful for evaluating motives for upstream transfers. The issue of crowding out by public programs is a complex one in its own right. Elsewhere, one of us has assessed the role of public subsidies in considerable detail (Hoerger, Sloan, and Picone 1996; Sloan, Hoerger, and Picone 1996). This research revealed that public subsidies, especially Medicaid, were highly influential in determining living arrangements, most particularly residence in a nursing home. The HRS provides far too little information on respondents' parents (lacking, e.g., information on the parent's state of residence, which is critical for matching state policies and incentives for institutionalization to the family) to allow us to study public subsidy crowding out in detail. Rather, we assess the relationship between residence in a nursing home and transfers and use the previous literature to complete the link with crowding out. We also control for other living arrangements: live with another child, with other relatives (e.g., sister), and live alone (includes living with spouse)—the omitted reference group.

The HRS does not obtain precise information on parent wealth as it does for the respondent. Rather, respondents are asked to compare the parent's financial situation as better, worse than, or the same as one's own.[12] We define a binary variable for parent financially better off than respondent and one for whether the parent owned his or her own home. In the past, an important distinction, which we can not make with the HRS, has been made between a parent's bequeathable and non-bequeathable wealth (see Bernheim, Shleifer, and Summers 1985). A home is bequeathable. Parents who are more affluent than their middle-aged children presumably have some bequeathable

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[10] McGarry and Schoeni (1995) compare transfers from wave 1 of the HRS, which uses minimum threshold with the Panel Study of Income Dynamics (the PSID), which does not. Not surprisingly, without specifying a threshold, the PSID yields lower mean transfer amounts than the HRS. They also show results of a logit analysis of whether time help was given to parents using the PSID, alternatively censoring at 0 at 100 hours. Overall, the results are similar, although there are differences in a few parameter estimates in terms of magnitude and statistical significance. The PSID is inferior to the HRS for studying upstream transfers for at least two reasons. First, the PSID surveys persons of all ages and does not focus on middle-aged adults and their elderly parents. Second, the HRS is much superior in terms of health information.

[11] Correlations between time and money transfers are quite low. The correlation between money transfers and time spent helping the parent with basic needs is 0.03 and between money transfers and time spent helping with chores 0.06. The correlation between the two time transfers is 0.31.

[12] The financial variables of the children may be capturing effects of other characteristics as well, such as child education and welfare status.

wealth. At least they are more likely to have such wealth than others who are not richer than the children.

Other key variables for the parent are age; whether the parent needs help with basic personal activities such as dressing, eating, or bathing; and whether he/she can be left alone for an hour or more.[13] Parents with these deficits in ability to care for oneself and/or those who cannot be left alone for longer than an hour are highly dependent on others.[14]

For the respondent, we include variables for the respondent's nonhousing wealth, a binary variable for respondents reporting negative wealth (liabilities > assets), and a measure of the respondent's hourly wage. Nonhousing wealth and the wage rate are expressed in natural log form. A predicted wage rate is used in our analysis.[15] Since time with one's children may compete with time with parent, we include a variable for the number of children the respondent had who were less than age 18 at wave 3.

Our model deals with the interaction of one parent and one child. In practice, there are often more potential participants in the decision-making process. Thus, without considering their roles in detail, we include variables for the number of siblings of the respondent, the number of siblings who were better off financially than the respondent, and the number of siblings living within 10 miles of the parent.

Other covariates for the respondent control for heterogeneity not reflected in our analytic framework: the importance of religion in one's life and satisfaction with life, which is set equal to one if the respondent was "very" or "somewhat satisfied" with life. This variable comes from wave 1 of the HRS because it is unavailable in the following waves. The responses to the satisfaction-with-life question were requested on a five-point scale. Our binary variable takes the value of one for the two highest (most satisfied) response categories.

For living arrangements, we include parents who live with respondents or live alone and then use a multinomial logit model with these mutually exclusive choices: living together or living alone but within 10 miles versus living alone and not within 10 miles. For frequency of contact, we use an ordered logit model.

For financial transfers and time spent helping parents, we use a two-part model: logit for the probability of satisfying a threshold and ordinary least squares (OLS) for the log of the actual amount. Since the dependent variables have a large amount of zero values, the transfer decision is separately modeled in the first part. Rather than assuming that explanatory variables determine the expectation of the latent dependent variable that is censored at certain values, an explanatory varia-

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[13] Since "need" reflects the perspective of the middle-aged child, need may be endogenous to the decisions we analyze. We do not attempt to deal with potential endogeneity here for lack of good instrumental variables.

[14] In the context of an exchange framework, this would seem to put them in a weak bargaining position vis-à-vis younger family members but would not necessarily completely eliminate their bargaining power, especially if they were still sufficiently cognitively aware to alter their wills.

[15] We use a Heckman selection correction to obtain unconditional parameter estimates of the wage equation. We use MLE to jointly estimate the wage equation and labor force participation. The explanatory variables in the labor force equation are gender, age, education and its square, black, American Indian, Asian, Hispanic, number of children less than 18, an interaction between female and the number of children less than 18, five binary variables for health ("excellent," "very good," "good," "fair," and "poor," with "excellent" health the omitted reference group), and whether the respondent spent more than 10 minutes a day on personal health problems (taking medicines, applying treatments, and so on). The explanatory variables in the wage equation, in addition to the Mills ratio and those in labor force participation equation, are years experience (measured by the number of years M had worked on her current job) and its square, eight Census divisions with Pacific the omitted reference group, and an interaction of black and living in a state in Confederacy. The rationale for this interaction term is that historically segregation in the South leads to worse schooling for blacks. (On this issue, see Margo 1991.) The health variable (spending more than 10 minutes a day on health needs) is not included.

ble could have different effects on the transfer decision and the amount conditional on a transfer being made as in a two-part model. Thus, the marginal effect of certain factor on the final transfers comes from both parts of the model—the probability that a transfer is made from the first part of model and the value of the amount transferred from the second part. The overall marginal effect is the product of the effects from both parts.[16]

Also, since the amounts of transfers, of both money and time, have positively skewed distributions, we use log-transformed dependent variables in the second part of the model ($\log(y) = x\beta + \varepsilon$). To recover an unbiased estimate of the expected value of the transfer, we calculate $E(y) = e^{x\beta}E(e^{\varepsilon})$. The exponential of the expected value from a log-linear regression ($e^{x\beta}$) is multiplied by the smearing part, which is the estimate of the expected value of the exponentiated error ($E(e^{\varepsilon})$). This yields the expected value of the transfer ($E(y)$).[17] Since the residual errors from the second part indicate heteroscedasticity, that is, $E(e^{\varepsilon})$ is a function of x, we use an exponential regression for the smearing retransformation.[18] Alternative specifications yield similar results.[19]

4. Empirical Results

Four percent of respondents lived with a parent (Table 2). Nearly a third (30%) of those who did not coreside with a parent lived within 10 miles of the parent. Eleven percent of respondents made a financial transfer of at least $500 to a parent during the prior two years. For those making such transfers, the mean transfer was nearly $2,600, but there was a long right tail on transfer amounts. On a scale from zero to four, mean frequency of contact was three, which corresponds to the category "about once a week." Nearly 10% of respondents provided more than 100 hours of personal care to a parent over the past two years. For those who helped in this way, respondents gave about seven hours of care weekly. About three times as many helped with chores, but conditional on helping at least 100 hours, the amount given was about four hours a week on average.

On average, respondents' parents were over age 80. At this stage in the life cycle, having two living parents who coreside is no longer common. Only one-fifth of respondents' parents were in this category, although a surviving parent was married in 34% of cases. In one-fourth of cases, the parent was wealthier than the respondent. Fourteen percent of parents needed help with basic activities, and 26% of parents could not be left alone for more than an hour. Fifty-eight percent of parents lived alone, which includes living with a spouse. The most common alternative living arrangement was coresidence with another child.

Among middle-aged children, mean wealth was $230,000, with a long right tail. Ten percent had negative net worth. Nearly three-fifths of such respondents had a sibling whose financial situation was better than the respondent. About as many had a sibling who lived "close by."

Among the determinants of parent living with the respondent, married parents were less likely to live with the respondent as were younger parents, those who could be left alone, and those parents who did not need help (Table 3). Parents who were better off financially than respondents

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[16] As noted previously, the HRS sets thresholds in transfer questions. Our approach for calculating marginal expected value (EV) disregards these threshold amounts. This should result in an underestimate of EV. An alternative is to assume that the threshold is always satisfied and calculate the marginal EV from the continuous part. This, however, should lead to an overestimate of the marginal EV. The two approaches yield lower and upper bounds on the marginal EV.

[17] For details, see Duan (1983), Manning (1998), Mullahy (1998), and Manning and Mullahy (2001).

[18] Mullahy (1998) sets $\rho(x) = e^{\varepsilon}$ with this specification; our smearing transformation would be $\rho(x) = e^{xy}$.

[19] We also used a linear regression for the smearing part and another retransformation, $E(\varepsilon^2) = \delta_0 + \delta_1 x + \delta_2 x^2$, as did Manning and Mullahy (2001).

Table 2. Descriptive Statistics

Variables	All Samples		Parent(s) and Respondent (R) Did Not Live Together	
	Mean	Standard Deviation	Mean	Standard Deviation
Dependent				
Parent lives with R	0.04	0.02		
R lives within 10 miles	0.29	0.46	0.30	0.46
Money transfer to the parent	0.11	0.32	0.11	0.31
Amount of money transfer (>$500)	2600.98	6097.92	2487.89	6334.86
Frequency of contact (range, 0–4)	3.03	1.16	3.03	1.16
Provides care to parent	0.10	0.30	0.09	0.28
Number of hours of care (>100)	721.38	745.83	639.57	598.51
Helps parent with chores	0.31	0.46	0.29	0.45
Number of hours of help with chores (>100)	441.26	515.08	415.42	493.24
Parent(s)				
Mother and Father coreside	0.21	0.41	0.22	0.41
Parent is better off financially	0.25	0.43	0.25	0.43
Parent owns home	0.55	0.50	0.56	0.50
Age	80.54	6.73	80.44	6.77
Needs help	0.14	0.34	0.13	0.34
Can be left alone	0.74	0.44	0.74	0.44
Female	0.74	0.44	0.74	0.44
Married	0.34	0.48	0.36	0.48
Lives alone	0.58	0.49	0.61	0.49
Lives in nursing home	0.06	0.24	0.06	0.24
Lives with another child	0.11	0.31	0.11	0.32
Lives with other relative	0.03	0.17	0.03	0.17
Respondent				
Wealth (millions $)	0.23	0.62	0.24	0.62
Wealth (<0)	0.10	0.30	0.10	0.29
Hourly wage	15.15	9.52	15.16	9.54
Married	0.66	0.47	0.66	0.47
Number of children <18	1.43	3.96	1.45	3.98
Health very good	0.16	0.37	0.16	0.37
Health good	0.28	0.45	0.28	0.45
Health poor or fair	0.31	0.46	0.31	0.46
Male	0.45	0.50	0.46	0.50
Has 1 sibling	0.16	0.37	0.16	0.36
Has 2 siblings	0.16	0.37	0.16	0.37
Has 3+ siblings	0.37	0.48	0.37	0.48
Number of siblings better off financially than R	0.58	0.94	0.57	0.93
Number of siblings living nearby	0.60	0.93	0.59	0.93
Religion is important to R	0.56	0.50	0.56	0.50
R satisfied with life	0.57	0.49	0.57	0.49

tended not to live with the respondent. The associated marginal effect indicates that the probability of living with the respondent declined by 0.02 on average if the parent was more affluent than the respondent. Although not large in absolute terms, the probability is about 50% of the mean sample fraction of parents living with the respondent.

Table 3. Living Arrangement and Living Distance: Multinomial Logit Analysis

	Living Together			Live within 10 Miles		
	Coefficient	Standard Error	Marginal Effect	Coefficient	Standard Error	Marginal Effect
Parent(s)						
Mother and Father coreside	0.54	0.62		0.13	0.14	
Parent is better off financially	−0.48	0.24**	−0.020	−0.22	0.11**	−0.036
Parent owns home	−1.07	0.20**		−0.31	0.12***	
Age	0.06	0.02**		0.01	0.01	
Needs help	0.81	0.28***	0.044	0.26	0.18	0.033
Can be left alone	−0.63	0.37*	−0.039	−0.05	0.23	0.007
Female	0.29	0.28		0.12	0.12	
Married	−2.34	0.51***		−0.22	0.14	
Respondent						
Log of wealth	−0.16	0.05***		−0.04	0.03	
Wealth (<0)	1.22	0.35***		0.32	0.20*	
Log of hourly wage	−0.15	0.21		−0.33	0.10***	
Married	−0.14	0.23		−0.13	0.12	
Number of children <18	0.00	0.03		−0.01	0.01	
Health very good	−1.08	0.35***		−0.40	0.15***	
Health good	−0.18	0.25		−0.14	0.13	
Health poor or fair	−0.14	0.29		−0.10	0.15	
Male	−0.08	0.19		−0.03	0.10	
Has 1 sibling	−1.16	0.30***		−0.37	0.19**	
Has 2 siblings	−1.45	0.33***		−0.53	0.19***	
Has 3+ siblings	−2.37	0.37***		−0.92	0.20***	
Number of siblings better off financially than R	0.23	0.11**		0.09	0.06	
Number of siblings living nearby	0.28	0.12**		0.28	0.06***	
Religion is important to R	0.36	0.22		0.22	0.10	
R satisfied with life	−0.20	0.19		0.12	0.10	
N	2247					
Pseudo R^2	0.10					

*** Significant at 1% level, ** at 5% level, * at 10% level (two-tailed test).

Wealthier children were less likely to live with their parents, but the marginal effect is very small. The probability of coresidence with one's parent decreases by 0.001 for a $100,000 increase in child wealth.[20] Any altruistic motive on the child's part may be outweighed by a demand for privacy and space as wealth increases. As is plausible, having more brothers and sisters reduced the probability that the respondent lived with the parent, but having siblings whose financial situation was better than R made the respondent more likely to live with the parent. Overall, these results imply that coresidence is more likely when either the parent or the child is poorer, suggesting that even at middle age, some children benefit from living with their parents (as well as the reverse).

[20] Calculated from a linear measure of nonhousing wealth (not shown).

Results for living within 10 miles of the parent are similar to those for coresidence. Children were less likely to live near richer parents whom altruistic children would be less likely to help. Children with higher market wages were less likely to live near a parent.[21] On average, having more siblings made it less likely that the respondent lived near a parent. And when there were siblings who were better off financially than the respondent, the respondent was more likely to live near the parent. However, when more siblings lived near the parent, it became more likely that the respondent lived near the parent.

The probability of money transfers to parents was lower when the parent was better off financially than the respondent (Table 4). To conserve space in the tables, several marginal effects are discussed but not presented in the table. The marginal effect indicates that the probability of transferring money in excess of $500 over two years fell by 0.11 when the parent was financially better off than the respondent, a very sizable effect (equal to the observational mean for the probability of transferring money). However, conditional on transferring money, the respondent gave more money on average when the parent was financially better off. Taking both the probability and the amount transferred conditional on passing the $500 threshold, respondents with parents who were less affluent than they were gave $233 less on average during the two-year time interval. In contrast to living arrangements and distance from parent, the health of the parent did not affect financial transfers to the parent. However, parents who lived close by were less likely to receive such transfers on average. Perhaps the upstream transfers were made to pay for parents' help but not specifically under circumstances of poor parent health. Upstream financial transfers were unaffected by parent residence in a nursing home. Taken together with the result on parent health, this result supports our assumption that upstream money transfers are not made to enable parents to purchase formal care.

Wealthier respondents were more likely to give to parents and, conditional on passing the $500 threshold, were more likely to give more. For persons who gave, the elasticity of giving for respondent's wealth was 0.13. A higher respondent wage also led to higher upstream transfers with an associated elasticity of 0.27. A parent living in the nursing home did not elicit greater money transfers from the child.

Caregiving to elderly parents appears largely to reflect parental health (Table 5). Children help needy parents. Parents needing help were more likely to receive help. And parents who could not be left alone received more help. Among the parents who received care, those who could not be left alone for more than an hour received nearly two more hours of care each week. Older parents were more likely to get care from the respondents and more care conditional on getting care. When parents coresided with a sibling, the child was less likely to provide care. Respondents with parents whose financial situation was better did not provide any more or less care than did others. The difference in expected values between respondents with and those without more affluent parents was three hours of care per year on average. Wealthier respondents tended to provide more care given that they passed the 100-hour care threshold. However, the difference in caregiving was small (elasticity = 0.06). Higher-wage respondents provided less care on average, with an associated elasticity of −0.11. Parents who lived in a nursing home received 26 hours less care from the respondent over the two-year time interval. We do not know if the parent was in the nursing home over the two-year interval, only the residence on the interview date.

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[21] Higher-wage children could have gone to college away from home or have sought a high-wage job away from the parent's home. This is an alternative explanatory for the wage effect. We thank a referee for this point.

Table 4. Money Transfer to the Parent

	Prob(Tr > 0)		Log(Tr) Given Tr > 0		
	Coefficient	Standard Error	Coefficient	Standard Error	Marginal Expected Value
Parent(s)					
Mother and Father coreside	−0.19	0.22	−0.46	0.18**	
Parent is better off financially	−2.35	0.29***	0.45	0.27*	−233.02
Parent owns home	−0.17	0.14	−0.27	0.12**	
Age	0.01	0.01	0.01	0.01	
Needs help	−0.11	0.20	0.05	0.16	−25.11
Can be left alone	−0.22	0.24	0.18	0.20	2.41
Female	0.43	0.16***	0.32	0.14**	
Married	0.10	0.20	0.31	0.16*	
R lives within 10 miles	−0.45	0.14***	−0.08	0.12	
Lives in nursing home	−0.10	0.27	0.00	0.22	−21.56
Lives with another child	0.03	0.19	0.07	0.15	
Lives with other relative	0.18	0.30	−0.38	0.24	
Respondent					
Log of wealth	0.04	0.03	0.13	0.03***	
Wealth (<0)	−0.74	0.28***	−0.71	0.24***	
Log of hourly wage	0.27	0.12**	0.27	0.10**	
Married	0.01	0.15	0.11	0.13	
Number of children <18	0.01	0.02	0.04	0.01***	
Health very good	0.12	0.19	−0.07	0.15	
Health good	0.11	0.16	0.08	0.13	
Health poor or fair	−0.18	0.19	−0.13	0.16	
Male	−0.04	0.12	0.19	0.10*	
Has 1 sibling	−0.10	0.28	−0.30	0.23	
Has 2 siblings	−0.06	0.28	0.02	0.22	
Has 3+ siblings	0.10	0.27	−0.25	0.22	
Number of siblings better off financially than R	−0.07	0.08	0.04	0.06	
Number of siblings living nearby	0.03	0.07	−0.06	0.05	
Religion is important to R	0.27	0.13**	−0.10	0.11	
R satisfied with life	−0.26	0.12**	−0.09	0.10	
N	3422		356		
Adjusted R^2	—		0.20		
Pseudo R^2	0.10		—		

*** Significant at 1% level, ** at 5% level, * at 10% level (two-tailed test).

Results for hours helping with chores are generally similar to those for caregiving. Here, there was a decrease in help with chores when the parents were financially better off, almost five hours per year (although the underlying parameter estimates were not statistically significant at conventional levels). The respondent wealth effect and hourly wage effect were both small. Not surprisingly, the parameter estimate on helping with chores is not statistically significant on the parent in nursing home variable.

Frequency of contact with parents fell when the parent was financially better off than the respondent, but the associated parameter estimate is not statistically significant at conventional levels

Table 5. Time Transfer to the Parent

	Provides Care					Helps with Chores				
	Prob(Tr > 0)		Log(Tr) | Tr > 0			Prob(Tr > 0)		Log(Tr) | Tr> 0		
	Coefficient	Standard Error	Coefficient	Standard Error	Marginal Expected Value	Coefficient	Standard Error	Coefficient	Standard Error	Marginal Expected Value
Parent(s)										
Mother and Father coreside	−0.73	0.27***	0.03	0.27		−0.27	0.15*	−0.26	0.11**	
Parent is better off financially	0.21	0.17	−0.23	0.15	6.09	−0.06	0.10	0.00	0.07	−10.64
Parent owns home	0.26	0.17	0.25	0.15*		0.13	0.11	0.04	0.07	
Age	0.05	0.01***	0.02	0.01*		0.03	0.01***	0.02	0.00***	
Needs help	1.32	0.18***	0.06	0.15	86.91	0.04	0.15	−0.02	0.09	−2.75
Can be left alone	0.03	0.24	−0.36	0.22	−16.21	0.13	0.18	0.07	0.13	18.59
Female	0.40	0.18*	0.03	0.17		0.53	0.11***	0.15	0.08*	
Married	−0.15	0.21	−0.04	0.20		−0.10	0.13	−0.11	0.09	
R lives within 10 miles	0.70	0.14***	0.38	0.13***		1.09	0.09***	0.17	0.06***	
Lives in nursing home	−0.58	0.27**	0.02	0.24	−25.83	−0.32	0.20	−0.02	0.13	−21.22
Lives with another child	−0.65	0.25***	−0.42	0.23*		−0.79	0.16***	−0.03	0.12	
Lives with other relative	0.15	0.32	−0.19	0.29		−0.28	0.24	0.08	0.18	
Respondent										
Log of wealth	0.01	0.04	0.06	0.03*		0.06	0.02**	−0.02	0.02	
Wealth (<0)	0.07	0.26	−0.40	0.24*		−0.45	0.17***	−0.09	0.12	
Log of hourly wage	0.18	0.14	−0.11	0.13		−0.10	0.09	0.05	0.06	
Married	0.35	0.17**	0.04	0.17		0.06	0.10	0.10	0.07	
Number of children <18	−0.06	0.02**	0.02	0.02		−0.02	0.01*	0.00	0.01	
Health very good	0.00	0.20	0.18	0.18		−0.12	0.13	0.00	0.09	
Health good	0.12	0.17	−0.06	0.16		−0.15	0.11	0.09	0.08	
Health poor or fair	−0.26	0.21	0.18	0.19		−0.33	0.13***	−0.10	0.09	
Male	−0.10	0.13	0.03	0.12		−0.07	0.08	0.06	0.06	
Has 1 sibling	−0.24	0.28	0.19	0.24		0.05	0.18	−0.21	0.12*	
Has 2 siblings	0.05	0.28	0.27	0.24		−0.20	0.18	−0.24	0.12*	
Has 3+ siblings	−0.40	0.29	0.06	0.26		−0.53	0.19***	−0.31	0.13**	
Number of siblings better off financially than R	0.00	0.08	0.02	0.07		0.11	0.05**	0.00	0.04	
Number of siblings living nearby	0.00	0.09	−0.11	0.08		−0.03	0.06	−0.02	0.04	

Table 5. Continued

	Provides Care					Helps with Chores				
	Prob(Tr > 0)		Log(Tr) | Tr > 0			Prob(Tr > 0)		Log(Tr) | Tr> 0		
	Coefficient	Standard Error	Coefficient	Standard Error	Marginal Expected Value	Coefficient	Standard Error	Coefficient	Standard Error	Marginal Expected Value
Religion is important to R	0.36	0.14**	0.15	0.13		0.28	0.09***	0.12	0.06*	
R satisfied with life	−0.20	0.13	−0.27	0.12**		0.03	0.08	0.06	0.06	
N	3422		293			3422		970		
Adjusted R^2	—		0.09			—		0.09		
Pseudo R^2	0.11		—			0.09		—		

*** Significant at 1% level, ** at 5% level, * at 10% level (two-tailed test).

Table 6. Frequency of Contact[a]

	Coefficient	Standard Error
Parent(s)		
Mother and Father coreside	0.56	0.12***
Parent is better off financially	−0.01	0.09
Parent owns home	0.00	0.09
Age	0.00	0.01
Needs help	−0.04	0.13
Can be left alone	0.35	0.15*
Female	0.65	0.09***
Married	−0.09	0.11
R lives within 10 miles	2.02	0.09***
Lives in nursing home	−0.34	0.18*
Lives with another child	−0.41	0.12***
Lives with other relative	0.10	0.21
Respondent		
Log of wealth	0.10	0.02***
Wealth (<0)	−0.74	0.14***
Log of hourly wave	−0.15	0.07**
Married	−0.01	0.09
Number of children <18	−0.03	0.01***
Health very good	−0.01	0.11
Health good	−0.05	0.10
Health poor or fair	−0.06	0.11
Male	−0.12	0.07*
Has 1 sibling	0.08	0.18
Has 2 siblings	−0.33	0.18*
Has 3+ siblings	−0.89	0.17***
Number of siblings better off financially than R	0.15	0.05***
Number of siblings living nearby	0.12	0.05**
Religion is important to R	0.43	0.08***
R satisfied with life	−0.09	0.07
N	3258	
Pseudo R^2	0.11	

[a] The number 0 is assigned to stand for "almost never contact the parent," 1 for "less than once a moth," 2 for "about once a month," 3 for "about once a week," and 4 for "more than once a weak."
*** Significant at 1% level, ** at 5% level, * at 10% level (two-tailed test).

(Table 6). Wealthier respondents and those with lower wage rates tended to have more contact with their parents. Much of the explanation for variations in parental contact reflected distance from the parent (low wage middle-aged children were more likely to live near their parents), availability of siblings to care for the parent, and competition for respondent's time, as measured by the number of children of the respondent under age 18. Parents resident in nursing homes had less contact with respondents. More religious respondents saw their parents more frequently.

Finally, in the previously mentioned analysis, we used information from one wave for the dependent variables and information from the preceding wave for the explanatory variables. The dependent variables referred to transfers within the past two years. Ideally, one would estimate the decisions of parents and all the children jointly and study transitions in transfers and living arrangements as they occur. Some of the variables treated as exogenous in this study, such as parental health, could be endogenous, adding both complexity and realism to the analysis. In fact, change, in analysis not shown,

particularly in living arrangements, is not that rapid, presumably reflecting the transactions cost of such changes. Death of parent was as likely as changes in parent living arrangement. Further, families clearly faced a multitude of choices. For example, for those parents living alone (including with spouse) at a point in time, the probability of living with a relative other than a sibling (e.g., a sister of the parent) was three times greater than the probability of living with the respondent. Clearly, there are often many potential sources of help. Even the best extant database captures only a few of these.

4. Conclusions and Implications

The results are important at two levels. From the vantage point of public policy, it appears that help to the elderly from an individual relative, such as a child, is limited.[22] This is true on average as well as for parents with poor health and functional status.

Many of the results of the financial transfer analysis are consistent with the predictions of our model. In particular, child wealth has positive effects on such transfers. Also, as predicted, less affluent parents received more money from children. Parents who were better off financially were less likely to live with adult children or within 10 miles of them. Middle-aged children had less frequent contact with parents financially better off, holding such factors as distance constant. Overall, the analysis of time transfer provides less empirical support for the model than does the analysis of upstream financial transfers. Not only are child wealth effects on time transfers really small, but also there is no consistent pattern for parent's relative wealth. Although the comparative statics analysis offered no prediction about the impact of an in-kind public transfer on financial transfers, our finding that parents in nursing homes received less financial support from their children suggests some "crowding out" of private effort.

Analysis of intergenerational public transfers has revealed a net transfer from younger to older generations, due primarily to federal rather than state public programs (Kotlikoff 1992). Large public transfers may at least partly explain the low levels of private upstream transfers. Unfortunately, because the state in which the parent resided was not obtained, we could not explicitly test in this study for crowding out from other public programs operated by the states. Such tests merit a high priority.

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[22] This finding has been replicated by others. See, e.g., Kotlikoff and Morris (1989), McGarry and Schoeni (1995), Henretta et al. (1997), and Wong et al. (1999).

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