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# Abstract

How are parental inter-vivos transfers to their children and children's informal care of parents influenced by personal characteristics, family conditions and state specific long term care policies? AHEAD data from 1993 and 1995 and a two-party choice model are used to guide the estimation of OLS and binary logit models of the amount and likelihood of inter-vivos transfers to children and informal care of parents. Results suggest that both parents' characteristics and their offspring's characteristics affect parental gifts to children and children's time assistance to their parents, highlighting the interdependent nature of these decisions. Furthermore, though state policies did not consistently affect parental gift giving, the availability of state respite care support -short-term "breaks" for informal family caregivers- (1% significance level) and adult day care centers (5% significance level) were positively related to the amount and likelihood of children's time assistance to their parents. These findings highlight the importance of some state programs such as respite care support in encouraging intra-family support for the elderly. Support for programs that reduce the caregiving burden may encourage more children to care for their elderly parents.

# Keywords

Inter vivos transfers, Informal caregiving, Long term care policies, Time assistance, Financial assistance

## Disciplines

Economics

### Comments

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### **Intergenerational Transfers in Long Term Care**

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### Abstract

How are parental inter-vivos transfers to their children and children's informal care of parents influenced by personal characteristics, family conditions and state specific long term care policies? AHEAD data from 1993 and 1995 and a two-party choice model are used to guide the estimation of OLS and binary logit models of the amount and likelihood of inter-vivos transfers to children and informal care of parents. Results suggest that *both* parents' characteristics and their offspring's characteristics affect parental gifts to children and children's time assistance to their parents, highlighting the interdependent nature of these decisions. Furthermore, though state policies did not consistently affect parental gift giving, the availability of state respite care support -short-term "breaks" for informal family caregivers- (1% significance level) and adult day care centers (5% significance level) were positively related to the amount and likelihood of children's time assistance to their parents. These findings highlight the importance of some state programs such as respite care support in encouraging intra-family support for the elderly. Support for programs that reduce the caregiving burden may encourage more children to care for their elderly parents.

#### 1. Introduction, Contribution to the Literature and Limitations

Most families consist of multiple generations and it is common for family members to care for one another. Many family members raise children and also care for their aging parents by providing time, financial and emotional assistance. These intergenerational transfers are important to each household and to society. Caring for aging parents, in particular, can be a psychologically and financially demanding activity and, since most developed societies are aging and having fewer children per household, this cost is shifting from households to national health care budgets. Formal long-term care is expensive and, in the last two decades, the U.S. federal government has encouraged families and states to reduce the use of nursing homes by creating economic incentives to encourage community home care and time assistance by adult children.

In the United States, the most popular family resource transfers are financial gifts to children (Gale and Scholz, 1994) and time assistance to parents (Morgan, 1984; Pezzin and Schone, 1999). In 2007, nearly 45 million caregivers provided 37 billion hours of unpaid, informal care to over 13 million seniors and adults with disabilities (National Alliance for Caregiving and AARP, 2008). If our society had paid for these billions of hours through formal services, it would have cost nearly \$400 billion. Assuming that most adult children are generally capable of providing safe and effective care with little or no training, failure to adequately support the informal care network is costly to society and detrimental to seniors.

Sociologists, social workers and economists have studied the factors that affect family care decisions (Engers and Stern, 1996). Economists have approached the subject in two ways. In the 1990s, many authors, including Wolf and Soldo (1994), Ettner (1995 and 1996) and Kemper and Pezzin (1996), used Becker's model of the family (1975) to guide their research questions (Pezzin, Pollack and Schone, 2007). Becker analyzed family "non-material" behavior, such as marriage and intra-family time and resource allocation, using models of rational behavior that were traditionally used to understand "material behavior". The second approach used game-theoretic bargaining models to understand family care arrangements (Pezzin, Pollack and Schone, 2007). Game theory is useful for

National Alliance for Caregiving and AARP (2008). Caregiving in the U.S. Bethesda, MD and Washington, DC; AARP Public Policy Institute (2008), Valuing the Invaluable: The Economic Value of Family Caregiving, 2008 Update; Family Caregiver Alliance (2004, June). Family Caregiving and Long-Term Care: A Crucial Issue for America's Families (Policy Brief). San Francisco, CA (accessed 11/29/09).

analyzing intergenerational living and transfer arrangements because it recognizes the often-conflicting interests of family members who must strategically decide who will care for their elderly in the midst of competing interests. Examples can be found in Sloan, Picone and Hoerger (1997), Hiedemann and Stern (1999), Engers and Stern (2002) and Pezzin and Schone (1999, 2002).

The most common transfer motives cited in the economics literature are altruism and exchange (mutual gain). Becker (1991) defines motives as differential reactions to changing structural conditions and motives are important to evaluate how resource changes and related policies affect transfer behavior (Kohli and Kunemund, 2003). Transfers made to children due to an altruistic motive will affect economic incentives differently than family transfers motivated by exchange. For an extensive review of the literature, see López Anuarbe (2010).

Researchers who have studied these motives have not come to a consensus, in part because they use different methods and databases and ask slightly different questions. Comprehensive datasets such as the Health and Retirement Study (HRS) or the Asset and Health Dynamics Among the Oldest Old (AHEAD) allow researchers to test for the altruism hypothesis using cross-sectional data and for the exchange hypothesis using the longitudinal waves (Soldo and Hill, 1995). Authors who consider donors to be guided by the exchange motive include Bernheim et al. (1985), Cox (1987), Cox and Rank (1992), Altonji et al. (1997), Henretta et al. (1997), McGarry (1999), and Azuma (2005). Both the altruism and exchange theories predict a negative relationship between the potential recipient's income and the probability of receiving a transfer or the *decision* to transfer. The exchange models also predict a positive relationship between the transfer probability and parental income (McGarry and Schoeni, 1997, 1995; Altonji et. al, 1997). However, altruism and exchange theories differ when they predict how the child's income affects transfer *amounts*. The altruistic model implies a negative relationship between the transfer amount and the income level of the child, whereas the exchange model allows for either a positive or a negative relationship between the two. For instance, an altruistic parent will transfer less income to her children, the higher the offspring's wealth level. In contrast, a parent guided by the exchange motive may still transfer money to his child even if the child is wealthy, since the motive for exchange is not to support the child but to elicit the child's help. In fact, wealthier offspring with a higher market value on their time may require a larger "inducement" to assist their aging parent. Cox (1987) found such a positive relationship between the recipient's income and the amount of transfers received. This result contradicts the pure altruistic motive but is consistent with the exchange motive,

given that the latter allows for a positive or negative relationship between the two variables (McGarry and Schoeni, 1997).

The core research objectives of this paper are: (1) to provide an economic framework for examining parents' gifts to their offspring and the time assistance that children provide to aging parents; (2) to consider not just the *individual* characteristics that influence each type of behavior, but also the extent to which each party's behavior depends on the characteristics of *both* parties; (3) to include the effects of several public policies on these intra-generational health care decisions.

My research expands on McGarry and Schoeni's 1997 cross-sectional work, which studied the relationship between parents' monetary gifts to their children and adult children's time assistance to their elderly parents, and Norton and Van Houtven's 2006 longitudinal work in which the authors argue for inter-vivos transfers as a more effective exchange mechanism (between parental monetary gifts to their children and children's time assistance to their parents) than bequests, as the former method allows for unequal distribution of monetary resources in favor of caregiving children, while bequests are usually given in equal amounts regardless of whether children have provided time assistance to their parents or not. Using 1993 AHEAD data, McGarry and Schoeni (1997) concluded that the simple correlation between the current amount of money that parents give to their children and the current amount of help provided by their children, or whether they helped or not, is actually negative (-0.007) and only significant (at the 1% level) in the binary case (-0.025). If parents need help from their children, they may be very sick and incurring large medical expenses, which would hinder contemporaneous financial gifts to their offspring. When the authors looked at the sub-sample of parents who already had made one or more transfers to their children, they found a positive and significant (at the 1% level) correlation (0.043) between the transfer decision and the assistance decision, but again a negative and statistically weak correlation between the transfer amounts and hours of assistance. Although McGarry and Schoeni's study was cross-sectional, the authors found a positive (0.05) and statistically significant correlation between the size of the gift and the parents' expectation of receiving time assistance in the future. This positive relationship could be seen as a current investment that parents are making, should they need future time assistance from their children.

Unlike most of the earlier studies of intergenerational transfers, this paper provides a theoretical framework that formally links the behavior of the two parties, parents and children, strengthening the rationale for including the characteristics of both parties in any empirical analysis of each party's observed behavior. Also, by using two periods only, I show how gift giving *positively* depends on *past* time assistance, as opposed to contemporaneous time assistance. By just adding one more period and lagged variables, the negative correlation reported by McGarry and Schoeni became positive and statistically significant. Current parental gift giving was also consistent with the reported likelihood of future gift giving in the previous wave and with previous gift giving. Past time assistance was also an important determinant of current time assistance, though parental gift giving did not affect offspring time assistance to their parents. This gift timing and time assistance is one topic I address. In particular, I study the relationship between parental financial gifts to children and children's time assistance to their parents in 1993 and 1995, and control for state policies such as state gift taxes, respite care and adult daycare services, which may influence the amount and likelihood of parental gift giving and time assistance, respectively. While altruism is not discarded, my theoretical framework and results suggest that parents and children may also engage in a one-sided exchange, a result also supported by Norton and Van Houtven (2006). Parents provide more inter-vivos gifts to children who provided time assistance to them in the past, but children do not necessarily provide more time assistance to their parents if they receive monetary gifts from them.

This study also has important limitations. First, some of the qualitative factors that govern family relations and decisions cannot be fully captured with conventional, quantitative variables. Families express their love, gratitude or resentment differently, in ways that reflect their cultural values and upbringing. Furthermore, some potentially relevant variables are unavailable in this specific dataset. For example, the HRS interviewers asked older households whether they had given money to their children during a specific period, the amount, and the recipient, but the reason for the gift was not recorded. Such reasons might include: children need the money, appreciation for their time assistance, a pure desire to financially assist their children, or to spend-down their estate and qualify for Medicaid long-term care. Finally there may be some relevant factors affecting intergenerational transfers that are not identified or included in this work.

### 2. Theoretical Framework

This study focuses on parents' *inter-vivos* transfers to their adult children, the offspring's decision to give time assistance to their elderly parents, and whether parental giving is correlated with assistance received. These actions are contingent on each group's consumption possibilities, their personal and family characteristics, particular state policies, and economic conditions. The theoretical model primarily emphasizes the links between parental giving and the offspring's assistance and serves as a framework to guide the empirical specifications, but the subsequent regression analysis also includes personal characteristics and state policies that may influence these decisions.

Separate utility maximization models are used to determine a parent's optimal level of monetary gifts (G\*) and an offspring's optimal time assistance to parents (A:). The parent's and offspring's best- response functions,  $G^*(A_n)$  and A:(G), from these individual choice problems interact to jointly determine Nash-Cournot equilibrium levels of parental gifts (G\*\*) and time assistance from the child (A:-). Both G\*\* and A.\*\* will depend on the underlying parameters from *both* the parent's and the offspring's utility maximization problems. In López Anuarbe (2010), this model is used to motivate and guide the empirical analysis of both the parent's and the offspring's best-response functions [G\*(A), A:(G)], as well as the reduced-form Nash equilibrium relationships [G\*\*, A.\*\*]. In this paper, we focus on estimation of the reduced-form relationships that contain the attributes of both parties.

#### 2.1. Parent's and Offspring's Optimization Problems

Suppose that the parent maximizes the following utility function:

(1)  $U[X, N, G, A_{m}; A_{o}, A_{s}, Z]$ 

subject to the budget constraint:

(2)  $I + rS + W(T-N) = pX + mA_m + G$ 

where:

- X: composite consumption good
- N: non-work time (leisure)
- G: monetary *inter vivos* gifts to offspring  $(\delta U/\delta G \ge 0 \text{ allows for altruism})$
- A.: market-purchased assistance
- A: hours of assistance from offspring (regarded as exogenous by parents)
- A:: government-provided assistance (exogenously determined by state policies)
- Z: vector of parent's personal, family, health and other relevant characteristics (suppressed in the formal model, but relevant for the empirical analysis)
- I: non-wage/non-asset income (e.g., Social Security or transfer income)
- rS: asset income [rate of return (r) \* stock of assets (S)]
- W: wage rate
- T: time endowment
- T-N: hours of labor (zero in most cases where the parent is retired)

p: price of composite good

m: price of market-purchased assistance

For a log utility function, maximizing the following Lagrangian:

(3) 
$$L = \alpha \ln X + \beta \ln N + \gamma \ln G + \delta \ln (A_{+} + A_{+}) + \lambda [I + rS + W(T-N) - pX - mA_{+} - G],$$

gives the behavioral functions:

(4)  $X^* = \alpha R / (\alpha + \beta + \gamma + \delta)p$  (6)  $G^* = \gamma R / (\alpha + \beta + \gamma + \delta)$ 

(5)  $N^* = \beta R / (\alpha + \beta + \gamma + \delta) W$  (7)  $A_{m}^* = [\delta R / (\alpha + \beta + \gamma + \delta)m] - A_{m} - A_{m}$ 

where  $R = [I + rS + WT + m(A_r+A_r)]$  is the parent's "full" or "potential" income, including assistance from offspring and the government, valued at the price of market-purchased assistance. Note that in (3) the various forms of time assistance (market-purchased, offspring-provided, and government-provided) are regarded as perfect substitutes in terms of their impact on the parent's utility. This assumption is relaxed in the empirical analysis. We are particularly interested in G\*, the parent's optimal gift response to the offspring's assistance. Since R, in equation (6), contains A, we can write G\*(A) to denote the best-response function of the parent. For this specific logarithmic (or an equivalent Cobb-Douglas) utility function:

(8) 
$$\delta G^*/\delta A = [\gamma m/(\alpha + \beta + \gamma + \delta)] > 0,$$

so the reaction function is linear in A. with a positive slope. A higher price (m) for market assistance increases the parent's gift response to the offspring's assistance. A larger  $\gamma$  (stronger altruism) also strengthens the parent's gift response, since  $\delta(\delta G^*/\delta A)/\delta \gamma > 0$ .

The offspring's choice problem is somewhat simpler, essentially a choice between consumption and leisure, with an additional decision about how much time to assist the parent (for details, see López Anuarbe, 2010). Using the above method to also derive the offspring's assistance response function yields:

### (9) $A_* = \eta V / (\epsilon + \phi + \eta) W$

where V = [i + rs + wt + G] is the offspring's "full income", including gifts from the parent, w is the offspring's wage rate, and  $\eta/(\epsilon+\phi+\eta)$  is the relative weight of time assistance to parents compared to consumption and leisure. Since V contains G, we can write this assistance response function as A<sub>c</sub>(G).

For the offspring's assumed utility function, the resulting time assistance function implies:

(10)  $\delta A_* / \delta G = \eta / (\epsilon + \phi + \eta) w > 0$ 

The response function is linear in G with positive slope. A higher personal wage (w) reduces the offspring's responsiveness to the parent's gifts  $[\delta(\delta A_*/\delta G)/\delta w < 0]$ . A larger  $\eta$  (stronger altruism) increases the offspring's responsiveness to the parent's gifts, since  $\delta(\delta A_*/\delta G)/\delta \eta > 0$ .

#### 2.2. Equilibrium and Stability Conditions

The expressions for  $G^*$  and  $A_*$  give each agent's optimal response as a function of the other agent's choice. At the intersection, the Nash-Cournot equilibrium, the optimal responses are mutually compatible. For stability (i.e. for a disequilibrium response to cause convergence to the equilibrium where the two response functions intersect), the following inequality must hold:

(11) 
$$\delta A_{\circ}^* / \delta G < [\delta G^* / \delta A_{\circ}]^{-1}$$
,

as illustrated in Figure 1. The same condition also is required for reasonable comparative statics.

Expressions for the Nash equilibrium levels of gifts and assistance, G\*\* and A\*\*, are found by simultaneously solving the best-response functions, (6) and (9), for G and A. This gives:

(12) 
$$G^{**} = \gamma [\eta m (i+rs+wt) + w(\varepsilon + \phi + \eta)(I+rS+WT+mA_{\epsilon})] / [w(\alpha + \beta + \gamma + \delta)(\varepsilon + \phi + \eta) - \gamma \eta m]$$

(13) 
$$A_{*}^{**} = \eta[\gamma(I+rS+WT+mA_{*}) + (\alpha+\beta+\gamma+\delta)(i+rs+wt)] / [w(\alpha+\beta+\gamma+\delta)(\epsilon+\phi+\eta) - \gamma\eta m]$$

Each expression depends on the parameters of *both* choice problems, highlighting the interdependent nature of the gift-for-assistance relationship between parents and their offspring and the need for data on both parties, government policies, and market conditions, in order to properly estimate these relationships. If (11) holds, the denominator in (12) and (13) is strictly positive, implying that  $A^{**} > 0$  and  $G^{**} > 0$ , since the numerator in each expression is positive.

The preceding theoretical framework is a single-period static equilibrium model. It captures some of the important factors that may influence choices of the parent and offspring, and highlights the interdependent nature of these

decisions within a simple Nash-Cournot setting, but the present model ignores a potentially important feature of the gift-for-assistance relationship between the parent and offspring. In particular, the size of the parent's gift and the amount of time assistance provided by the offspring in any given period are probably not independent of these decisions in past or future periods. For example, from the parent's perspective, either a large gift to the offspring or little assistance from the offspring in the preceding period might lead to an atypically small gift in the present period; or the expectation of making a larger gift or receiving less assistance in the future might also reduce the size of the current gift. This type of inter-temporal behavior will be considered in some of the empirical specifications by incorporating lagged values of the choice variables as explanatory factors and using two waves of AHEAD data.



FIGURE 1: Nash Equilibrium Levels of Gifts (G\*\*) and Assistance (A.\*\*)

### 3. Empirical Analysis: Database and Sample Description

Version 9.2 of SAS was used to run regressions and test hypotheses. Regressions for each wave were run using Ordinary Least Squares (OLS) and a logistic function (Binary Logit). For a complete description of variables used or created, see Appendix 1.

The 1993 Asset and Health Dynamics among the Oldest Old (AHEAD) is a national study sponsored by the National Institute on Aging and the Institute for Social Research at the University of Michigan. AHEAD consists of 8,222 community-dwelling individuals aged seventy and older (born in 1923 or earlier) from 274 counties (Soldo et al, 1997). The study also interviewed some of the respondent's family members and helpers, such as their spouse, children and formal or informal caregivers. Respondents were asked many detailed questions, at the individual and family levels, about their health, functional status, health care coverage and expenses, family structure and family transfers (including *inter vivos* gifts and time assistance), financial status and working situation, subjective expectations, and other topics. To ensure adequate representation of particular ethnic and socioeconomic groups, AHEAD over-sampled Blacks, Hispanics and Florida residents with weights of 1.8, 1.4 and 1.7, respectively. (Soldo et al, 1997).

Our unit of analysis is the household because we are interested in joint family decisions to provide time assistance to parents and *inter vivo* transfers from parents to their offspring. In particular, our unit of analysis is the parental household when studying parental inter-vivos transfers to their children, and the offspring's household when studying time assistance to their elderly parents. Most data were at the respondent level, both for parents and children, so we created household variables from these respondent variables and merged them using the parental household identification number. We also merged this publicly available dataset with a restricted dataset that contained the respondent's state of residence, allowing respondents to be matched with state-specific policies that might influence the behavior of parents or their offspring. Our final 1993 sample included 5,050 households with at least one parent having at least one child, about 86% of the original sample. In 1995, most respondents were reinterviewed and 4,306 households met our criteria (with at least one child and complete data). We used these 4,306 parental households with children's information to run regressions that contained several 1993 and 1995 variables for the second wave (1995).

There were also 16,856 eligible adult children households in 1993, and 15,191 households were re-interviewed in 1995. Offspring data came from a different dataset than their parents', so we linked each parental household to the corresponding offspring household by using the household identification number (HHID) and the "other person number" (OPN) to distinguish a sibling household that could be a helper—or a parental gift receiver—from another sibling household that was not. Adult children were further classified into those who resided with their parents and

non-resident children. In 1995 there were more survey sections and datasets with different sample sizes. For instance, there were separate sections for co-resident children, for children who provided financial assistance to their parents and for children who received *inter vivos* gifts from them. However, we were able to reconcile these disparities because all of these datasets had the HHID identifier plus the dataset identifier. Most elderly parents (almost 76%) that received time assistance did so from one child and their family, but when this was not the case, we added the monthly time assistance hours across all the parents' children, grandchildren and informal caregivers. For parental gift giving, we measured the dependent variable as a dollar amount (OLS) and as a binary decision (Logit: 1=yes) and controlled for parental and offspring characteristics; our key explanatory variables were current and past time assistance, the expectation (probability) of future gift giving and future time assistance, and selected state policies (state gift taxes and whether the state had a Medically Needy program). We hypothesized that past time assistance and the expectation of future gift giving increase current gift giving. Likewise, when considering the adult children's time assistance as the dependent variable, we measured it as monthly hours (OLS) and whether or not the offspring(s) and her family provide time assistance (logit). Our key explanatory variables were current and past gift giving, past time assistance, the expectation of future time assistance and our selected state variables (respite care services and adult day care centers). Past time assistance and the availability of respite care services and adult day care centers were hypothesized to increase time assistance and the likelihood of a child providing time assistance to his parent(s).

Table 3 (in Appendix 2) provides interesting descriptive statistics about the baseline sample. In 1993, about 24.5% of parental households gave money to their adult children, while 19.2% of them received time assistance. In 1995, 35.7% of these same parental households provided inter vivos transfers to their offspring, while the percentage of children (18.7%) who gave their parents time assistance did not change much. In 1993, nearly 15% of the sample received informal care, and an additional 5% obtained formal, paid care at home. Hence, over 70% of the sample needed no assistance with ADLs (bathing, dressing, eating, getting in and out of bed, using the toilet and walking) and 70.2% had no difficulty with any IADLs (making phone calls, managing money, preparing meals, shopping for groceries and taking medications). This observation is important: many elderly parents are quite self-sufficient and require little formal time assistance from their offspring or other sources.

Both co-residence and distance from parent are potentially important determinants of time assistance. There is a significant positive correlation between the amount of help a parent received from their child and whether their offspring lived with them (0.196) or within ten miles of their residence (0.398). But the fact that less than 11% of the total sample co-resided with their parents, while over 40% of children lived within ten miles of their parents, warrants the inclusion of both variables as factors that influence time assistance and the child's decision to assist. Even though co-residing with parents may not necessarily imply that children are aiding them, it is harder not to help them if children see their parents on a daily basis. Moreover, children do not need to live with their parents to assist them. In 1993, over 68% of parents had at least one child who lived within 10 miles of them; in 1995, this figure surpassed 72%. Both co-residence and living nearby were often statistically significant variables that helped explain, in particular, the child's decision to provide time assistance.

When analyzing the 1993 sub-sample of parents who transferred money to their offspring *and* children who provided time assistance to their parents, parents gave less frequently as their assistance needs increased. Parents also gave money more frequently to non-resident children than to household children, even though the latter helped their folks more often. This may be because co residence and other non-monetary transfers such as taking care of grandchildren are other ways in which parents are helping their resident children (see Ku et al, 2012, for example). Furthermore, when parents did give money to their resident children, the transfer was positively correlated with receiving assistance in the past and significant at the 1% level. By relating parents' characteristics to children's characteristics, it's possible to gain a clearer picture of these families and their intergenerational transfers.

#### 4. Nash Equilibrium Results

Consistent with the Nash equilibrium functions ( $A^{**}$  and  $G^{**}$ ) that emerge from the theoretical model, we combined both sets of explanatory variables for parents and children. To allow for response lags, we also used data from two waves, 1993 and 1995. Our results improved significantly when we included the two types of explanatory variables (i.e., for both generations), and variables that previously lacked significance, such as change in parental health status and the probability of receiving future help from adult children, became key variables that helped explain children's time assistance. The new results also highlighted the importance of previous time assistance, gift giving and expectations, in addition to current characteristics and expectations of future gift giving and assistance. These variables helped to explain  $G^{**}$  and  $A^{**}$ , as reflected by indicators such as the F statistic, the adjusted R-

squared, pseudo-R-squared, Chi-squared likelihood ratio and the AIC criterion (see Appendix 2, Table 4). Adding key 1993 lagged explanatory variables in 1995, such as previous assistance and gift amounts, always improved the explanatory power, regardless of the left-hand-side variable or the type of estimation that was used, and these variables were often statistically significant.

When including parent and child personal and financial characteristics, some explanatory variables that were statistically significant in the single-party regressions (where a party's behavior depended only its own characteristics) continued to matter in both regressions: marital status, needing help with ADLs and IADLs, being wealthier, having more income, and reporting a higher probability of giving money to children in the future (see Table 1). A few child characteristics were also statistically significant in 1993, 1995 and in a regression with variables of both years. For example, the child's income had a small but positive effect on parent giving, and if adult children were in a weaker financial situation compared to their elderly parents, the children were more likely to receive a larger sum of money from the parents. Some variables were statistically significant in one wave or the other, but not when we combined variables from both periods. For instance, younger children were more likely to receive larger monetary gifts in 1993 and 1995, but this variable lost importance when we considered the amount of previous gifts and previous time assistance those parents had, respectively, given and received. For a complete list of estimated coefficients, see Table 5 in the Appendix.

| KEY VARIABLES                 | 1993 OLS   | 1995 OLS   | 1995 OLS Estimate | 1993 Logit | 1995 Logit | 1995 Logit Estimate |
|-------------------------------|------------|------------|-------------------|------------|------------|---------------------|
|                               | Estimate   | Estimate   | with some         | Estimate   | Estimate   | with some           |
|                               |            |            | 1993 variables    |            |            | 1993 variables      |
| Health Status Change          | 0.0676     | 0.1843     | 0.1723            | 0.0636     | 0.0935*    | 0.1004              |
| Help Need                     | -0.1367**  | 0.2011***  | 0.2013***         | -0.1261**  | 0.1337***  | 0.1369***           |
| Ln (Wealth)                   | -0.2962*** | -0.5057*** | -0.3709***        | -0.0480    | -0.2028*** | -0.1479***          |
| (Ln Wealth) <sup>2</sup>      | 0.0316***  | 0.0549***  | 0.0399***         | 0.0129***  | 0.0258***  | 0.0192***           |
| Ln Assistance                 | -0.0169    | -0.0712*   | -0.0233*          | -0.0074    | -0.1069*   | -0.0348*            |
| Ln Income                     | 0.3066***  | 0.0662***  | 0.0889***         | 0.3976***  | 0.0461***  | 0.0450***           |
| Future Assistance Probability | -0.2343**  | 0.0592     | 0.0807            | -0.1735*   | 0.0644     | 0.0803              |
| Future Gift Probability       | 0.0272***  | 0.0281***  | 0.0173***         | 0.0170***  | 0.0156***  | 0.0107***           |
| State Gift Taxes              | -0.0015    | 0.0129     | 0.0161            | -0.0024    | 0.0108     | 0.0137*             |
| Medically Needy State         | 0.2341**   | -0.1267    | -0.1510           | 0.2309***  | -0.0597    | -0.0806             |
| Adult Day Care Centers        | -0.0004*   | -0.0001    | 0.0026            | -0.0004**  | -0.0002    | 0.0011              |
| Respite Care Services         | 0.3564***  | 0.0677     | -0.0874           | 0.3211***  | 0.0400     | -0.0435             |
| Previous Gifts                |            |            | 0.2919***         |            |            | 0.1497***           |
| Previous Assistance           |            |            | 0.1055**          |            |            | 0.1125**            |
| Future Gift Probability       |            |            | 0.0091***         |            |            | 0.0059***           |
| reported in previous wave     |            |            |                   |            |            |                     |

TABLE 1: Key Variables for G\*\* (parental inter-vivos transfers to their children)

(\*, \*\*, \*\*\* are significance levels: 10%, 5% and 1%, respectively)

Table 1 displays a subset of key explanatory variables from Table 5, namely time assistance from offspring, previous gift giving, expectations of future gift giving, the selected state policies (state gift taxes, medically needy state, respite care services and adult day care centers) and other income and health care variables. Naturally, parents give larger (and more frequent) monetary transfers to their children if they have more resources (income and wealth), if they have done so in the past, and if they plan to do so, as seen by the positive and statistically significant coefficients of the variables "Previous Gifts" and "Future Gift Probability". Past and present reported expectations of parental gifts were always positive and statistically significant, suggesting that parental giving is a planned and longitudinal process. On the other hand, current time assistance provided by children to their parents is negatively signed and often insignificant, but previous assistance is positive and significant when using OLS and Logit for 1995 and including 1993 time assistance, which suggests that some parents may be grateful to their children because their offspring cared for them and want to reward their care giving. However, when parents are looking forward to provide inter-vivos transfers to children, and do not yet need or are not yet receiving time assistance from their children, the "Future Assistance Probability" coefficient is less clear in its sign and significance.

Though the selected state policies, including state gift taxes, didn't seem to affect parental gifts to children, the availability of adult day care centers and respite care support for caregivers in a state may affect the likelihood and amount of time assistance that children can provide to their ailing parents, as respite care and adult day care centers were positively related to time assistance at the 10% and 5% significance levels, respectively (see Table 2). Having caregiver support may encourage adult children to care for their aging and ailing parents, and an organized caregiver support network outside of the family and provided or supported by the state or the federal government may be just what informal caregivers need to feel less overwhelmed when deciding to provide care that may last decades and has an unknown end date.

Parents' characteristics such as marital status, gender, age and health care needs were significant in determining the amount of time assistance children gave their parents (see Table 6 for details). Older mothers who were not married, and who needed help with their ADLs and IADLs, received more time assistance than younger, married fathers who, perhaps and when needed, received assistance from their own wives. This result is consistent with Pezzin et al (2009) who support the demonstration and punishment effects: adult children learn from a parent's example that

family caregiving is appropriate behavior and may punish parents who do not provide spousal care by failing to assist their non-disabled parents should the latter need it in the future.

Financial characteristics of the parents and children did not seem to consistently make a difference; however, when not controlling for lagged variables, parents on Medicaid seemed to get more time assistance in 1993 and 1995. Also, expected, current, and previous monetary gifts were either not statistically significant or *negatively* related to current assistance. Moreover, in 1993 only, current financial assistance from children had a positive and statistically significant impact on time assistance, suggesting that these family transfers were complements, contrasting with the negative relationship between children's future financial assistance and current time assistance.

| VARIABLE              | 1993 OLS   | 1995 OLS   | 1995 OLS Estimate | 1993 Logit | 1995 Logit | 1995 Logit Estimate |
|-----------------------|------------|------------|-------------------|------------|------------|---------------------|
|                       | Estimate   | Estimate   | with some         | Estimate   | Estimate   | with some           |
|                       |            |            | 1993 variables    |            |            | 1993 variables      |
| Parent's Sex          | 0.0206***  | 0.0101***  | 0.0056***         | 0.0536***  | 0.0704***  | 0.0605***           |
| Parent's Age          | 0.0157***  | 0.0055     | 0.0044            | 0.0513*    | 0.0359     | 0.0318              |
| Health Status Change  | 0.3427***  | 0.2719***  | 0.2372***         | 1.5501***  | 1.7082***  | 1.6385***           |
| Ln Gifts              | -0.0001    | -0.0028    | -0.0045           | -0.0684    | -0.0038    | -0.0087             |
| Ln Income             | -0.2944*** | -0.2440*** | -0.2503***        | -2.1551*** | -2.0736*** | -2.1442***          |
| Future Assistance     | -0.0010**  | -0.0010*** | -0.0008**         | -0.0097*** | -0.0063**  | -0.0057*            |
| Probability           |            |            |                   |            |            |                     |
| Future Gift           | -0.0016    | -0.0006    | 0.0004            | -0.0058    | -0.0050    | -0.0055             |
| Probability           |            |            |                   |            |            |                     |
| Expected Assistance   | 0.0402***  | 0.0485***  | 0.0399***         | 0.2863***  | 0.3061***  | 0.2923***           |
| to Parents 1993       |            |            |                   |            |            |                     |
| Adult Day Care        | 0.0335**   | 0.0450**   | 0.0420**          | 0.0962**   | 0.0922**   | 0.0562**            |
| Centers               |            |            |                   |            |            |                     |
| Respite Care Services | 0.3564***  | 0.0677***  | 0.0874***         | 0.3211***  | 0.0400***  | 0.0458***           |
| Previous Gifts        |            |            | 0.0001            |            |            | 0.0021              |
| Future Gift           |            |            | 0.0878            |            |            | -0.1475             |
| Probability reported  |            |            |                   |            |            |                     |
| in previous wave      |            |            |                   |            |            |                     |
| Previous Assistance   |            |            | 0.2036***         |            |            | 0.4428***           |

 TABLE 2: Key Variables for A.\*\* (Offspring Time Assistance to their Parents)

What also seemed to influence the amount of A.\*\* was the amount of time assistance that children provided to their parents in the previous wave, as seen by the positive coefficient, statistically significant at the 1% level. Also, corresidence and living within 10 miles of each other increased the number of hours children aided their parents. These results make intuitive and economic sense: the opportunity cost of traveling to provide assistance is lower for children who live closer to their parents, and some children have made a conscious effort to move closer to or correside with their parents to provide time assistance.

### 5. Conclusion

When possible, complex intergenerational issues such as asset and time transfers should be studied using multiperiod data, using households as units of analysis and taking into consideration family characteristics on both sides of the transfer. Even though family characteristics dominate these transfer decisions, there are also geographic factors and public policies that families may consider. Most families are involved in caregiving activities and a large portion of the long-term care our elderly population receives comes from their families in the form of "free" informal care. But as households live longer and have fewer children, with competing responsibilities such as caring for their young and working full time, the supply of informal caregivers may decrease. This pattern, coupled with an increase in the demand for long-term care by an aging population may strain the care-giving relationship within families. Leaders and policymakers need to consider these trends, quantify their effects, and make appropriate adjustments in state and federal policies to accommodate these changes in care-giving needs and capabilities.

Results suggest that parental gift giving was positively related to previous assistance (at the 5% significance level) and negatively related to current time assistance (10% significance level) when including 1993 and 1995 variables. If parents needed long term care help with their ADLs and IADLs, they gave more money to their children. Also, past gift giving and the expectation of future gift giving were positively related to current gift giving, which suggests that, after controlling for income, parents gave money to their children during more than one period.

Likewise, the amount and likelihood of children providing time assistance to their parents was greater when parents needed this help and if these adult children provided such assistance in the past, but did not depend on the inter vivos gifts they received from their parents. State policies, namely respite care services and adult day care centers, seemed to affect time assistance more than gift giving, even after controlling for state gift taxes and medically needy states. In particular, the existence of state respite care services was positive and significant at the 1% level, while adult day care centers were somewhat less important, though still positively related and significant at the 5% level. This result is further supported in a working paper (López Anuarbe, 2012) where the period of analysis is expanded to 10 years and I obtain this result using OLS, Logit, Censored Tobit and a Two-Step Heckman process.

Given the broad public agreement on the need to contain health care costs and to move away from long-term institutionalization, policymakers should actively consider the benefits of paying, training and supporting family members who care for their elderly relatives as a long term investment that could reap state and federal budget savings. The development of private long-term care insurance, which protects individuals from bankruptcy and enhances their ability to finance catastrophic health care costs, should also be an important item on the health care reform agenda. "Old-age" is an ill-defined status that most of us dread, but still hope to attain. Doing so with a measure of dignity, comfort, and without breaking personal or public budgets seems a reasonable goal that will require sensible decisions by families as well as policymakers.

This research aims to provide a better understanding of the complex nature of intergenerational family decisions. A theoretical and empirical framework that takes into account the interdependence of these decisions and transfers enhances our understanding of the elderly and their family's financial and caregiving decisions over time. Giving monetary gifts to their children and receiving time assistance from their offspring are expected and planned processes that span more than one period, and providing caregivers additional support to care for their elderly may encourage this group to aide their parents and parents to reward their children if they do not have to purchase formal or institutionalized long-term care.

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#### 7. Appendix 1: Variable Construction

Version 9.2 of SAS was used to run regressions and test hypotheses. Regressions for each wave were run using

Ordinary Least Squares (OLS) and a logistic function (Binary Logit). The Nash Equilibrium equations that take into

account lagged dependent and independent variables, as well as the same set of variables for G\*\*and A.\*\*, were

specified as:

(1)  $G^{**}_{105,100} = a_0 + a_0$ Marital Status +  $a_0$ Male +  $a_0$ Age +  $a_0$ Kids +  $a_0$ Health Status Change +  $a_0$ Help Need +  $a_0$ Medical Bills +  $a_0$ Wealth +  $a_0$ Medicaid +  $a_0$ Assistance +  $a_0$ Income +  $a_0$ Probability of Future Helpers +  $a_0$ Probability of Future Gift Giving +  $a_0$  State Gift Taxes +  $a_0$  Medically Needy State +  $a_0$ Child's Marital Status +  $a_0$ Child's Number of Kids +  $a_0$  Female Child +  $a_0$  Child's Age +  $a_0$  Child's Income +  $a_0$ Distance from Parents +  $a_0$ Future Financial Assistance +  $a_0$ Child's Home Ownership +  $a_0$ Co-residence +  $a_0$  Child's Work Status +  $a_0$ Adult Day Care Centers +  $a_0$ Respite Care +  $a_0$ Expected Assistance =  $a_0$  Child's Comparative Financial Situation  $a_0$  +  $a_0$ Gifts\_{100} +  $a_0$ In Assistance =  $a_0$ Financial Assistance =

(2)  $A_{a}^{**} = a_{b} + a_{t}$  Marital Status +  $a_{t}$  Male +  $a_{t}$ Age +  $a_{t}$ Kids +  $a_{t}$ Health Status Change +  $a_{t}$ Help Need +  $a_{t}$ Medical Bills +  $a_{t}$ Wealth +  $a_{t}$ Medicaid +  $a_{t}$ Gifts +  $a_{t}$ Income +  $a_{t}$ Probability of Future Helpers +  $a_{t}$ Probability of Future Gift Giving +  $a_{t}$  State Gift Taxes +  $a_{t}$  Medically Needy State +  $a_{t}$  Child's Marital Status +  $a_{t}$  Child's Number of Kids +  $a_{t}$  Female Child +  $a_{t}$  Child's Age +  $a_{t}$  Child's Income +  $a_{t}$  Distance from Parents +  $a_{t}$ Future Financial Assistance +  $a_{t}$ Current Financial Assistance + Child's Home Ownership +  $a_{t}$ Co-residence + Child's Work Status +  $a_{t}$ Adult Day Care Centers +  $a_{t}$ Respite Care +  $a_{t}$ Expected Assistance =  $a_{t}$ KComparative Financial Situation =  $a_{t}$ Gifts =  $a_{t}$  In Assistance =  $a_{t}$ Future Financial Assistance =  $a_{t}$ Future F

where:

MS = Marital status (1=married or partnered).

Sex = 1 if respondent is a male in the parental household and 1 if the respondent is a female in the child household.

Age = Age of the oldest household member.

Kids = Number of kids. For the parent's household, the range starts at 1 because our sample only includes households with children. For the child's household, we also include households without children.

 $\Delta$ Health = Change in household's health status:  $\Delta$ Health=1 if their health status has deteriorated in the last two years (since the last wave).

Help Need = Scale variable that measures the household's needs with Activities of Daily Living (ADLs) such as eating, getting dressed and bathing, and Instrumental Activities of Daily Living (IADLs) such as shopping, cooking and paying bills. Help Need ranges from 0 to 4. For example, if Help Need = 2, then one or more household members have at least one ADL or IADL limitation and, hence, need help with it.

Ln Bills = Logged out-of-pocket medical bills. This variable was created by adding the following expenses: hospital stays, nursing home stays, doctor and clinic visits, outpatient surgeries, dental visits, prescriptions and in-home medical care.

Ln Wealth = Logged stock of household wealth. Wealth is also in quadratic form to allow for a nonlinear effect of wealth on parental gifts. The household wealth variable had the following components *for each respondent* and their spouse: net value of main and second home, net value of a business ownership, two main IRA amounts, stocks,

bonds, checking and savings balances, certificates of deposit and Treasury bills, value of main transportation, other assets, trusts, and the two main monetary lump sums. When information was not available for these quantities, we used an imputation method to assign range values for these assets.

Ln Income = Logged average annual household income. Income appears in quadratic form to allow for a nonlinear effect of wealth on parental gift. The household income variable in each year, for the respondent and spouse, consisted of: self–employment income, wages and salaries, Social Security, Supplemental Social Security, professional practice or trade income, tips, bonuses and commissions, other income including a second job source, and veteran's benefits.

Medicaid = Dummy variable that equals 1 if either household member is on Medicaid.

Ln Assistance = Logged number of monthly assistance hours provided by the parents' children and their families. We also have a binary version of this variable that equals 1 if parents are getting help from their children or their children's family and 0 otherwise, even if they are getting help from other sources.

E Assistance = Expectation of having future helpers should the respondent need them. Expected assistance or expected help is a binary variable that equals 1 if the answer is yes.

P F Gifts = Probability that the household will provide financial gifts of \$5,000 or more to their children in the next ten years.

MN = Indicates if the state has a Medically Needy option. A Medically Needy program includes people who are not poor enough to qualify for Medicaid, but who have high medical costs (including nursing home expenditures and prescription drugs) they can deduct from their income when determining Medicaid eligibility (Hiedemann and Stern, 1999; Lee, Kim and Tanenbaum, 2006). In 1993, Georgia, Louisiana, Rhode Island and Tennessee had adopted such programs (Grabowski and Gruber, 2005). States with a Medically Needy program may facilitate spend-down and *inter vivos* gift giving.

SGT = State gift tax rate. We expect gifts from parents to offspring to be less likely and smaller in states with higher gift taxes. In 1993, six states had gift taxes in addition to federal gift taxes: Connecticut (6%), Delaware (6%), New York (21%), South Carolina (8%), Tennessee (9.5%) and Wisconsin (12.5%).<sup>2</sup>

Distance = Binary variable that distinguishes those parents and adult children who live within 10 miles of each other (distance = 1) from those who are farther apart.

Future Financial Assistance = Binary variable (yes = 1) for which the child is asked if he or she will be providing monetary assistance to their parents in the next five years.

Work Status = Household scale variable that controls for working outside of the home. Working part-time or fulltime (30 hours or more each week) was considered for each child and their spouse. For instance, if both children work outside the home, the corresponding value is 2; if one of them does, the value is 1.

Expected Assistance = Binary variable (yes = 1) that asks the child if their parents expect them to provide time assistance in the future, should they need it.

Comparative Financial Situation = Dichotomous variable that equals 1 if the child believed their financial situation was better than their parent's financial situation.

<sup>&</sup>lt;sup>2</sup> See Joulfaian (2004) for details.

# Appendix 2: Additional Tables

 TABLE 3: Descriptive Statistics for 1993 (base year)

| VARIABLE  | VALUE |  |  |  |  |
|---|-------|--|--|--|--|
| % Female Respondents  |       |  |  |  |  |
| % Married Households  |       |  |  |  |  |
| % Widowed Households  | 37.3  |  |  |  |  |
| % Homeowners/Mortgage payers  | 61.5  |  |  |  |  |
| % Households with a yearly income $\leq$ \$10,000                     | 36.5  |  |  |  |  |
| % Households with a wealth level $\leq$ \$10,000                      |       |  |  |  |  |
| % Parental households who gave money to their children                |       |  |  |  |  |
| % Households who needed help with ADLs                                |       |  |  |  |  |
| % Households who received help with ADLs                              |       |  |  |  |  |
| % Helpers who were children   |       |  |  |  |  |
| % Adult children who lived within 10 miles of their elderly parents   |       |  |  |  |  |
| % Households who were co-residing with at least one child             |       |  |  |  |  |
| % Helpers who were paid   |       |  |  |  |  |
| % Family helpers who were paid  |       |  |  |  |  |
| % Children who were financially assisting their parents               |       |  |  |  |  |
| % Children who were assisting their parents financially and with time | 2.2   |  |  |  |  |

### **TABLE 4: Comparative Summary Statistics**

| Dependent Variable & Year            | OLS                          | Binary Logit  |
|--------------------------------------|------------------------------|---|
|                                      |                              | Likelihood Ratio (LR); % Concordant Probabilities (CP);                 |
|                                      |                              | AIC; Pseudo-R <sup>2</sup>  |
| G** 1993                             | Adj. R <sup>2</sup> : 0.2101 | LR $(\chi^2)$ : 1,093.51; % CP: 79.3;                                   |
|                                      | F: 44.30 (p<0.0001)          | AIC (Intercept and covariates): 4624.67; Pseudo-R <sup>2</sup> : 0.1804 |
|                                      |                              |   |
|                                      |                              |   |
| G** 1995                             | Adj. R <sup>2</sup> : 0.2295 | LR (χ <sup>2</sup> ): 960.47; % CP: 76.8;                               |
|                                      | F: 45.23 (p<0.0001)          | AIC (Intercept and covariates): 4724.27; Pseudo-R <sup>2</sup> : 0.1604 |
|                                      |                              |   |
| G** 1995 with 1993 lagged variables  | Adj. R <sup>2</sup> : 0.3079 | LR ( $\chi^2$ ): 1,233.40; % CP: 80.2;                                  |
|                                      | F: 52.66 (p<0.0001)          | AIC (Intercept and covariates): 4459.06; Pseudo-R: 0.2063               |
|                                      |                              |   |
| A.** 1993                            | Adj. R <sup>2</sup> : 0.3789 | LR ( $\chi^2$ ): 2,275.82; % CP:95.0                                    |
|                                      | F: 100.38 (p<0.0001)         | AIC (Intercept and covariates): 2034.92; Pseudo-R <sup>2</sup> : 0.5211 |
| A.** 1995                            | Adj. R <sup>2</sup> : 0.3418 | LR ( $\chi^2$ ): 2,062.11; % CP: 93.9                                   |
|                                      | F: 78.10 (p<0.0001)          | AIC(Intercept and covariates) : 2140.99; Pseudo-R: 0.4835               |
| A.** 1995 with 1993 lagged variables | Adj. R <sup>2</sup> : 0.3952 | LR ( $\chi^2$ ): 2,125.34; % CP: 93.3                                   |
|                                      | F: 74.86 (p<0.0001)          | AIC (Intercept and covariates): 2088.68; Pseudo-R: 0.4952               |

| VARIABLE                                | 1993 OLS    | 1995 OLS    | 1995 OLS Estimate | 1993 Logit  | 1995 Logit  | 1995 Logit Estimate |
|---|-------------|-------------|-------------------|-------------|-------------|---------------------|
|   | Estimate    | Estimate    | with some         | Estimate    | Estimate    | with some           |
| Indone and                              | 4.0(11***   | 1 2465      | 1993 variables    | 7.072(***   | 1.2407**    | 1993 variables      |
| Intercept Dependie Manital Status       | -4.0011**** | 1.2403      | 0.0314            | -7.9720***  | -1.3407***  | -1.8890***          |
| Parent's Marital Status                 | -0.39/3***  | -0.0823     | -0./310***        | -0.2934**   | -0.3380**** | -0.4329***          |
| Parent's Sex                            | 0.1899***   | 0.4353***   | 0.3599**          | 0.1/10      | 0.2913***   | 0.26/3**            |
| Parent's Kids                           | 0.0341      | 0.0022      | 0.0057            | 0.0232***   | -0.0037     | -0.0028             |
| Parent s Klds                           | -0.0100     | -0.08/3**** | -0.0384***        | -0.0409*    | -0.0391***  | -0.0443***          |
| Health Status Change                    | 0.0070      | 0.1843      | 0.1723            | 0.12(1**    | 0.0935*     | 0.1004              |
| L = Dilla                               | -0.130/***  | 0.2011***   | 0.2013***         | -0.1261***  | 0.1337***   | 0.1309***           |
| Ln Bills                                | 0.0154      | -0.0049     | -0.00/9           | 0.0096      | 0.0055      | 0.0052              |
| Ln (wealth)                             | -0.2962***  | -0.5057***  | -0.3709***        | -0.0480     | -0.2028***  | -0.14/9***          |
|   | 0.0310***   | 0.0549***   | 0.0399***         | 0.0129***   | 0.0258***   | 0.0192***           |
|   | -0.0165     | -0.4405***  | -0.2330           | -0.3106**** | -0.0389***  | -0.5498***          |
|   | -0.0109     | -0.0/12*    | -0.0233***        | -0.0074     | -0.1069*    | -0.0348***          |
|   | 0.3066***   | 0.0662***   | 0.0889***         | 0.39/6***   | 0.0461***   | 0.0450***           |
| Future Assistance Probability           | -0.2343**   | 0.0592      | 0.0807            | -0.1735*    | 0.0644      | 0.0803              |
| Future Gift Probability                 | 0.0272***   | 0.0281***   | 0.01/3***         | 0.01/0***   | 0.0156***   | 0.010/***           |
| State Gift Taxes                        | -0.0015     | 0.0129      | 0.0161            | -0.0024     | 0.0108      | 0.013/*             |
| Medically Needy State                   | 0.2341**    | -0.1267     | -0.1510           | 0.2309***   | -0.0597     | -0.0806             |
| Offspring's Marital Status              | -0.0726     | -0.1246**   | -0.05/6           | -0.1323**   | -0.119/***  | -0.0774             |
| Offspring's Kids                        | 0.0040      | -0.0132     | -0.0107           | 0.0005      | -0.0144     | -0.0136             |
| Offspring's Sex                         | -0.0504     | 0.0466      | 0.0433            | -0.0520     | 0.0146      | 0.0122              |
| Offspring's Age                         | -0.0162**   | -0.0153**   | -0.0078           | -0.0090     | -0.0062     | -0.0021             |
| Offspring's Financial<br>Situation 1993 | -0.26/1***  | N/A         | -0.1505***        | -0.2016***  |             | -0.1115***          |
| Offspring's Ln Income                   | 0.0223***   | 0.0197***   | 0.0182***         | 0.0225***   | 0.0155***   | 0.0157***           |
| Expected Assistance to parents 1993     | 0.1591      | N/A         | 0.0718            | 0.1575      |             | 0.0331              |
| Distance: living within 10              | -0.0074     | -0.0341     | -0.0292           | -0.0074     | -0.0279     | -0.0283             |
| miles                                   |             |             |                   |             |             |                     |
| Future Financial Assistance             | 0.1250      | 0.1069      | 0.2291            | -0.1575     | 0.1727      | 0.2865              |
| Current Financial Assistance            | -0.0314     | 0.0336      | 0.0569            | -0.0338     | 0.0572      | 0.0736              |
| Offspring's Home                        | -0.0309     | -0.0083     | 0.0369            | -0.0605     | -0.0411     | -0.0008             |
| Ownership                               | 0.0000      | 0.0.400     | 0.02/0            | 0.0240      | 0.0250      | 0.0007              |
| Co-Residence                            | -0.0023     | -0.0490     | -0.0368           | 0.0349      | -0.0250     | -0.0097             |
| Offspring's Work Status                 | 0.0686**    | 0.0396      | 0.0480            | 0.0892***   | 0.0382      | 0.0443              |
| Adult Day Care Centers                  | -0.0004*    | -0.0001     | 0.0026            | -0.0004**   | -0.0002     | 0.0011              |
| Respite Care Services                   | 0.3564***   | 0.0677      | -0.0874           | 0.3211***   | 0.0400      | -0.0435             |
| Previous Gifts                          |             |             | 0.2919***         |             |             | 0.1497***           |
| Previous Assistance                     |             |             | 0.1055**          |             |             | 0.1125**            |
| Future Gift Probability                 |             |             | 0.0091***         |             |             | 0.0059***           |
| reported in previous wave               |             |             | 0.0055            |             |             | 0.0515              |
| Future Financial Assistance             |             |             | 0.3255            |             |             | 0.2515              |
| reported in 1993                        |             |             | 0.1.410           |             |             | 0.1055*             |
| Financial Assistance given in<br>1993   |             |             | -0.1419           |             |             | -0.1255*            |

TABLE 5: OLS and Binary Logit Results for G\*\* (all explanatory variables)

(\*, \*\*, \*\*\* are significance levels: 10%, 5% and 1%, respectively)

| VARIABLE               | 1993 OLS   | 1995 OLS    | 1995 OLS Estimate | 1993 Logit | 1995 Logit | 1995 Logit Estimate |
|------------------------|------------|-------------|-------------------|------------|------------|---------------------|
|                        | Estimate   | Estimate    | with some         | Estimate   | Estimate   | with some           |
| _                      |            |             | 1993 variables    |            |            | 1993 variables      |
| Intercept              | -0.2396*** | -0.1555***  | -0.1299***        | -1.9778*** | -1.4243*** | -1.3644***          |
| Parent's Marital       | -0.0622*   | -0.1167***  | -0.1043***        | -0.2593    | -0.7123*** | -0.6966***          |
| Status<br>Depentie Ser | 0.0206***  | 0.0101***   | 0.0056***         | 0.0526***  | 0.0704***  | 0.0605***           |
| Parent's Age           | 0.0200***  | 0.0101***   | 0.0030***         | 0.0530***  | 0.0704     | 0.0003***           |
| Parent's Kids          | 0.0137***  | 0.0033      | 0.0044            | 0.0315*    | 0.0339     | 0.0518              |
| Health Status Change   | 0.0220     | 0.0094      | 0.0707***         | 1 5501***  | 1 7082***  | 1.6385***           |
| Help Need              | 0.0427     | 0.0160***   | 0.2372            | 0.0203     | 0.0436*    | 0.0363              |
| In Bills               | 0.00004    | 0.0100      | 0.0124            | 0.0203     | 0.0430     | 0.0505              |
| Ln (Wealth)            | 0.0029***  | 0.0005      | 0.0004            | 0.0794     | 0.0019     | 0.0050              |
| (In Wealth):           | 0.1384***  | 0.0814***   | 0.0296            | 0.2084     | 0.2767*    | 0.2232              |
| Medicaid               | 0.0013     | -0.0022     | 0.0009            | 0.0191     | -0.0184    | -0.0037             |
| In Gifts               | -0.0001    | -0.0022     | -0.0045           | -0.0684    | -0.0038    | -0.0087             |
| Ln Income              | -0 2944*** | -0.2440***  | -0.2503***        | -2 1551*** | -2 0736*** | -2 1442***          |
| Future Assistance      | -0.0010**  | -0.0010***  | -0.0008**         | -0.0097*** | -0.0063**  | -0.0057*            |
| Probability            | 010010     | 010010      | 010000            | 010097     | 010000     | 010007              |
| Future Gift            | -0.0016    | -0.0006     | 0.0004            | -0.0058    | -0.0050    | -0.0055             |
| Probability            |            |             |                   |            |            |                     |
| State Gift Taxes       | -0.0379    | -0.2001     | -0.0060           | -0.2144    | -0.2067*   | -0.1539             |
| Medically Needy        | 0.0169     | -0.0141     | -0.0196*          | 0.0036     | -0.0385    | -0.0301             |
| State                  |            |             |                   |            |            |                     |
| Offspring's Marital    | -0.0069**  | 0.0008      | 0.0019            | -0.0281**  | -0.0148    | -0.0080             |
| Status                 |            |             |                   |            |            |                     |
| Offspring's Kids       | 0.0259**   | 0.0066      | 0.0032            | 0.0259     | 0.0385     | 0.0214              |
| Offspring's Sex        | 0.0043**   | -0.0016     | -0.0020*          | 0.0143*    | -0.0109    | -0.0113             |
| Offspring's Age        | 0.0012     |             | -0.0004           | 0.0519     |            | -0.0258             |
| Offspring's Financial  | 0.0002     | 0.0025***   | 0.0017***         | -0.0022    | 0.0110***  | 0.0087**            |
| Situation 1993         |            |             |                   |            |            |                     |
| Offspring's Ln         | -0.0159    |             | -0.0036           | 0.0133     |            | 0.4540              |
| Income                 |            |             |                   |            |            |                     |
| Expected Assistance    | 0.0402***  | 0.0485***   | 0.0399***         | 0.2863***  | 0.3061***  | 0.2923***           |
| to parents 1993        |            |             |                   |            |            |                     |
| Distance: living       | -0.4012*** | -0.0231     | -0.0251           | -0.2674    | 0.1317     | 0.1800              |
| within 10 miles        |            |             |                   |            |            |                     |
| Future Financial       | 0.2131***  | -0.0058     | -0.0077           | 0.3177***  | -0.0443    | -0.0594             |
| Assistance             | 0.0101     | 0.0217***   | 0.0075***         | 0.0770     | 0.0150     | 0.0255              |
| Current Financial      | -0.0121    | 0.031/***   | 0.02/5***         | -0.0779    | -0.0159    | -0.0255             |
| Assistance             | 0.0070***  | 0.0(((***   | 0.0202**          | 0.2072***  | 0.1421*    | 0.0456              |
| Ourspring's Home       | 0.0879**** | 0.0000****  | 0.0302***         | 0.2973***  | 0.1451*    | 0.0456              |
| Co Posidonoo           | 0.0002     | 0.0249***   | 0.0170***         | 0.0040     | 0.0246     | 0.0250              |
| Offenning's Work       | -0.0092    | -0.0248**** | -0.01/9****       | -0.0040    | -0.0340    | -0.0239             |
| Status                 | 0.0001*    | 0.0001*     | 0.0000*           | 0.0003*    | 0.0003*    | 0.0110*             |
| Adult Day Care         | 0.0335**   | 0.0450**    | 0.0420**          | 0.0062**   | 0.0022**   | 0.0562**            |
| Centers                | 0.0555     | 0.0450      | 0.0420            | 0.0902     | 0.0922     | 0.0502              |
| Respite Care Services  | 0.356/***  | 0.0677***   | 0.087/***         | 0 3211***  | 0.0400***  | 0.0/158***          |
| Previous Gifts         | 0.5504     | 0.0077      | 0.0074            | 0.5211     | 0.0400     | 0.0438              |
| Future Gift            |            |             | 0.0878            |            |            | 0.1475              |
| Probability reported   |            |             | 0.0070            |            |            | 0.17/5              |
| in previous wave       |            |             |                   |            |            |                     |
| Future Financial       | 1          | 1           | 0.0185            | 1          |            | 0.0264              |
| Assistance reported    |            |             | 5.0105            |            |            | 5.0201              |
| in 1993                |            |             |                   |            |            |                     |
| Financial Assistance   | 1          | 1           |                   | 1          | 1          |                     |
| given in 1993          |            |             |                   |            |            |                     |
| Previous Assistance    | 1          | 1           | 0.2036***         | 1          |            | 0.4428***           |

# TABLE 6: OLS and Binary Logit Results for A.\*\*