Inter vivos gifts: Compensatory or equal sharing?*

Stefan Hochguertel Henry Ohlsson

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Abstract

Empirical studies of intergenerational transfers usually find that bequests are equally divided among heirs while *inter vivos* gifts tend to be compensatory. Using the HRS data set from the U.S. we find that only 5 % of parents who give, divide their gifts equally among their children. Estimating probit models, using family panels, we find that gifts are compensatory in the sense that a child is more likely to receive a gift if she works fewer hours and has lower earnings than than her brothers and sisters. These results carry over to the amounts given. Fixed effects Tobit estimations show that the fewer hours a child works and the lower her income is, the more the parents give. Gifts are compensatory. The empirical results are, therefore, consistent with the predictions of the altruistic model of intergenerational transfers.

Keywords: *inter vivos* gifts, equal sharing, altruism, compensatory transfers

JEL classifications: D10, D64, D91

Correspondence to: Stefan Hochguertel, European University Institute, Via dei Roccettini 9, I–500 16 San Domenico de Fiesole (Fl), Italy, email <hochguer@iue.it> or Henry Ohlsson, Department of Economics, Göteborg University, Box 640, SE–405 30 Göteborg, Sweden, email <henry.ohlsson@economics.gu.se>.

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1. Introduction

Empirical studies of intergenerational transfers show that *post mortem* bequests are equally divided among heirs while *inter vivos* gifts tend to be compensatory.[1] The difference between actual bequest and gift behavior is a puzzle since established models of intergenerational transfers predict that there should be no difference.[2] Altruistic parents will make compensatory transfers, regardless of whether the transfer is *inter vivos* or *post mortem*.[3]

There are several recent papers studying *inter vivos* gifts. Dunn and Phillips (1997) find, using U.S. data, that gifts are compensatory in the sense that higher earnings of a child makes a gift less likely. They use data from the Asset and Health Dynamics among the Oldest Old (AHEAD).[4]

In this paper we study data from the Health and Retirement Study (HRS).[5] The HRS has been designed and conducted by the University of Michigan's Survey Research Center. It focuses on health and retirement related issues of the U.S. population. It is a panel data set, surveying a sample of the preretirement population (cohorts born between 1931 and 1941), which was launched in 1992 and is repeated biennually. In this study we focus on the 1992 wave.[6]

The objective of this paper is to find out empirically what explains the observed pattern of giving. An important question is if gifts are compensatory, i.e., if parents give more to a child with less resources of her own than her brothers and sisters.

The HRS is a good data set to study questions addressed in our paper. The coverage of the pre-retirement cohort includes those who have accumulated substantial wealth from life cycle savings. They are, therefore, in a position where

[1] Most empirical studies of estate division find equal division; see Menchik (1980, 1988) and Wilhelm (1996) for the U.S. and Arrondel et al. (1997) for France. Tomes (1981, 1988), however, finds that bequests are compensatory.

[2] See also the surveys by Laitner (1997) and Masson and Pestieau (1997).

[3] Cremer and Pestieau (1996), in a model of altruistic parents facing moral hazard and the samaritan's dilemma, generate the prediction that gifts are equal and bequests are compensatory. Lundholm and Ohlsson (2000) assume that gifts are private information while bequests are public information and that parents care about their reputation after death. Given these assumptions altrustic parents will choose compensatory gifts and equal bequests.

[4] Some other empirical papers on gifts are Altonji et al. (1992), Altonji et al. (1997), Arrondel and Laferrère (1998), Arrondel and Wolff (1998), Cox (1987), Cox and Rank (1992), Cox et al. (1997), Guiso and Jappelli (1991), Poterba (1997), and Poterba (1998).

[5] McGarry and Schoeni (1995) use data from the HRS while McGarry (1998, 1999) combine the HRS and the AHEAD.

[6] The HRS web site at <http://www.umich.edu/~hrswww> is the main source of information. Public release data files are available for the 1992 wave (fully cleaned and imputed) and the 1994 wave (partly cleaned and imputed). The sample is not representative. African Americans, Hispanics and Florida residents are oversampled.

they can afford to give away money. Moreover, as they are about to retire within the foreseeable future, they make conscious decisions about how to use the accumulated resources.

Two important features of our analysis are, first, that we—in contrast to most other studies—focus on data on the level of the recipients (children) rather than data on the level of the donors (parents). Second, the child level data permit us to use econometric methods for panel data.

Conditional on giving at all, we find that only 5 % of parents in the HRS data set divide their gifts equally among their children. Equal sharing is decreasing in the number of children, 10 % of the parents with two children share equally while less than 1 % of the parents with 5 children or more give the same amounts. Allowing some intrafamily variation, 7.6 % of the parents give amounts to each child in the interval $\pm$ 20 % from the intrafamily mean.

Our main result is that the empirical findings suggest that gifts are compensatory. This is consistent with the predictions of the altruistic model of intergenerational transfers.

Estimating probit models, using family panels, we find that gifts are compensatory in the sense that a child is more likely to receive a gift if she works fewer hours and has lower income than than her brothers and sisters.

These results carry over to the amounts given. Estimations of fixed and random effects models, conditional on positive family gift amounts, and fixed effect Tobit estimations show that the fewer hours a child works and the lower her income is, the more the parents give.

The paper is structured as follows: The testable predictions from competing theoretical models of intergenerational transfers are discussed in Section 2. Section 3 describes the HRS sample. We give some general information and summary statistics for key variables. We also give some summary statistics on the estimating sample and descriptions of the variable definitions in Appendix A. The estimates for a probit model (family level), a random effects probit model, fixed and random effects conditional amount models, and a fixed effects Tobit model are reported in Section 4. Appendix B reports corresponding estimations on a subsample. Section 5 concludes.

2. Theoretical framework

Gifts are voluntary intergenerational transfers. Different theoretical models of voluntary intergenerational transfers have been proposed in the literature:[7]

[7] Bequests, on the other hand, may arise accidentally because of imperfect markets for annuities. The accidental model of Davies (1981) is a version of the life-cycle model. Households cannot insure because of adverse selection in annuities markets. Instead they have to save for a

1. the altruistic model
2. the egoistic model
3. the exchange model

We will discuss these models below. But before doing that there is an important qualification to be made. Throughout our review of the theoretical models we will assume that the behavior of those receiving transfers (children) is not affected by the decisions of those making transfers (parents). Hence, we rule out any strategic interactions between donors and donees (cf. Cremer and Pestieau, 1996). There will, e.g., be no samaritan's dilemma in the models discussed.

2.1. The altruistic model

This is the Becker (1974) and Barro (1974) framework.[8] Consider a parent who has two children. The parent's total earnings is Y^p, the childrens earnings are Y_1^c and Y_2^c. In the altruistic model, the parent cares about its own consumption, C^p, and the childrens total resources, $Y_1^c + G_1$ and $Y_2^c + G_2$. Specifically, the parent solves:

$$\max_{C^p, G_1, G_2} \quad U\left(C^p\right) + \beta\left(V\left(Y_1^c + G_1\right) + V\left(Y_2^c + G_2\right)\right), \tag{1}$$

subject to

$$C^p + G_1 + G_2 = Y^p, \tag{2}$$

$$G_1 \geq 0, G_2 \geq 0 \tag{3}$$

with $U(.)$ and $V(.)$ concave and increasing and with $U'(0) = \infty = V'(0)$. The price of consumption is 1. $V(.)$ measures parental utility from a child's consumption and β registers the strength of the parent's altruistic sentiments. Despite the simplicity of (1)–(3), the behavioral implications seem quite general.

Let $B_i = B(Y^p, Y_1^c, Y_2^c; \beta), i = 1, 2$ be the utility maximizing gifts in absence of the constraint $G_i \geq 0, i = 1, 2$, so that:

$$G_i = \max\{0, B(Y^p, Y_1^c, Y_2^c; \beta)\}. \tag{4}$$

long retirement. If they die young, their unused resources become accidental bequests. If they live a long time, they may die with little or no estate. Friedman and Warshawsky (1990) report rather ambivalent support for the model.

[8] The presentation is inspired by Laitner and Juster (1996).

Solving the first-order conditions of utility maximization, assuming interior solutions, yields:

$$G_2 - G_1 = Y_1^c - Y_2^c. \tag{5}$$

The parent will equalize the consumption opportunities of the children. We can also compute the partial derivatives of the behavioral equations. Higher earnings for a child reduces the gift it receives. The total resources of the child will, however, still increase. The derivatives are:

$$-1 < \frac{\partial G_1}{\partial Y_1^c} = \frac{\partial G_2}{\partial Y_2^c} < 0$$

Higher earnings for the parent lead to more gifts. Similarly, higher earnings for a sibling also increase the gift. It turns out these two partial derivatives are identical. What matters is the total resources of the other people in the extended family, not the distribution within the family.

$$0 < \frac{\partial G_1}{\partial Y^p} = \frac{\partial G_1}{\partial Y_2^c} = \frac{\partial G_2}{\partial Y^p} = \frac{\partial G_2}{\partial Y_1^c} < 1$$

The partial derivatives can be combined to yield an adding–up condition. If the parent gains a dollar while a child loses the same amount, a one dollar gift will restore the initial optimal allocation of resources.[9]

$$\frac{\partial G_i}{\partial Y^p} - \frac{\partial G_i}{\partial Y_i^c} = 1, i = 1, 2$$

2.2. The egoistic model

In another frequently used model (e.g. Blinder, 1974; Hurd, 1989), a parent derives utility from the amount it gives (joy of giving) but not from the utility the child actually derives from the resulting transfer. This is sometimes called the egoistic model. The maximization problem of the parent can be written:

$$\max_{C^p, G_1, G_2} \quad U(C^p) + \beta V^*(G_1 + G_2), \tag{6}$$

subject to (2) and (3). The partial derivatives of the behavioral functions become:

[9] Altonji et al. (1997) test this condition.

$$0 < \frac{\partial(G_1 + G_2)}{\partial Y^p} < 1$$

There are no differences, compared to the altruistic model, of the effects of higher earnings for the parent. The models differ in the implications of higher earnings for the children. Behavior according to the egoistic model is not affected by the earnings of the children.

2.3. The exchange model

Bernheim et al. (1985) and Cox (1987) present versions of the exchange model. In the exchange model, the parent is not altruistic in the sense of caring about the consumption possibilities of the children. Instead the parent values the attentions of the children more than services otherwise purchased in anonymous markets. Suppose a parent obtains such attentions in proportion to the amounts—$G_i = p_i C_i^s, i = 1, 2$—it gives to its children. Since the opportunity cost of each child's time is increasing in its earnings $Y_i^c, i = 1, 2$, the implicit price the parent pays for attention, p_i, will tend to be increasing in $Y_i^c, i = 1, 2$. The quantity of services bought from each child is represented by C_i^s. The parent solves:

$$\max_{C^p, C_1^s, C_2^s} \quad U(C^p) + V_1(C_1^s) + V_2(C_2^s), \tag{7}$$

subject to

$$C^p + p_1(Y_1^c)C_1^s + p_2(Y_2^c)C_2^s = Y^p, \tag{8}$$

$$C_1^s \geq 0, C_2^s \geq 0. \tag{9}$$

Higher earnings of the parent will tend to result in more gifts but also more own consumption. The parents' consumption will respond to changes in income of child 1 according to:

$$\frac{\partial C_1^s}{\partial Y_1^c} < 0$$

The impact of the childrens earnings on gifts and the parents' own consumption is now, however, in general ambiguous. The signs of the partial derivatives will depend on the price elasticity of the demand for child services. If it is low enough

Table 2.1: Theoretically predicted effects on parental gifts to a child.

model	parent's resources	child's own earnings	sibling's earnings
the altruistic model	+	−	+
the egoistic model	+	0	0
the exchange model	+	+[a]	−[a]

a. Provided that the demand elasticity for child services is low enough.

for expenditure to increase when the price increases, e.g., because there are no close substitutes to the services of a particular child, we find the following:[10]

$$\frac{\partial(p_1 C_1^s)}{\partial Y_1^c} > 0$$
$$\frac{\partial C^p}{\partial Y_1^c} < 0$$
$$\frac{\partial(p_2 C_2^s)}{\partial Y_1^c} < 0$$

The partial derivatives with respect to Y_2^c are analogous.

2.4. Summing up

Table 2.1 summarizes the predictions of the different gift models. The models all share the prediction that more resources for the parent will increase the gifts. The empirical analysis of this variable cannot help us to distinguish between different theories. It is, however, a consistency requirement to empirically verify that more resources for parents result in higher gifts. The theories differ on their predictions of how the child's earnings affect gifts. Here the empirical analysis can shed light on the question which model is consistent with the data.

[10] The condition for a low enough demand elasticity is $C_1^s > -\frac{V_1'}{V_1''}$, where V_1' is the marginal utility of consuming C_1^s while V_1'' is the second derivative of $V_1(C_1^s)$. If this condition does not hold the signs are reversed.

3. Descriptive facts

3.1. The survey

The 1992 wave of the HRS comprises information on 7,700 households with 25,000 children. The sampled population is U.S. residents of the pre-retirement cohort born during 1931-1941 (either family head or spouse), excluding institutionalized persons households. The core sample aims to be representative, although there is deliberate oversampling of Blacks, Hispanics, and Florida residents (186:100, 172:100, 200:100, respectively).

There are almost 13,000 respondents. Within a household there are two main respondent types: the financial respondent (primary respondent), who is considered most knowledgeable of household financial matters, and the family respondent who is usually the female member in a couple.

Apart from family structure, transfers the questionnaire covers the demographic background, health status, housing, employment, last job and job history, retirement plans, assets and liabilities, income, information on children, and a number of additional sections, among which experimental modules.

We use information from the parts on demographics, assets, income, family relations and transfers, and on children. Information on the latter two parts was provided by the family respondent. It contains data on the number, sex, age, education etc. of all children of the family, and on inter vivos transfers from parents to their children during the preceding year.

For the present study, the information on inter vivos transfers is of crucial importance. The questionnaire asks the following question (question E35, variable 1504):

> (Not counting any shared housing or shared food,) Have you [and your (husband/partner)] given (your child/any of your children) financial assistance totaling $500 or more in the past 12 months?
>
> [DEFINITION: By financial assistance we mean giving money, helping pay bills, or covering specific types of costs such as those for medical care or insurance, schooling, down payment for a home, rent, etc. The financial assistance can be considered support, a gift or a loan.]

We interpret this as gifts. Conditional on the answer being affirmative, the respondent is then asked to give the total amounts transfered, per child.

The sample we select for the present study includes only families with children. We lose some, but not many, observations due to some inconsistencies in the data, and due to missing values in selected variables.

Information on net worth is available for all households, although it is not quite clear which observations have been imputed and to which extent imputation error

Table 3.1: Fraction of households giving and giving equally.

number of children	total	giving:	%	equal giving	± 2 %	± 5 %	± 10 %	± 20 %
					from the intrafamily mean			
1	651	225	34.6	-	-	-	-	-
2	1,745	731	41.9	77	78	82	92	130
3	1,539	615	40.0	23	23	23	23	30
4	1,121	422	37.6	11	11	11	11	11
>4	1,694	535	31.6	4	4	4	4	4
total	6,750	2,528	37.1	115	116	120	133	175
share of those giving, %[a]		100.0		5.0	5.0	5.2	5.8	7.6

a. We use sampling weights.

might be an issue. The number of missing observations of children's income is due to the fact that this information has only be requested for children not living at home.

3.2. Descriptive statistics

Table 3.1 cross-tabulates the number of children in the family against the fraction of parents who have given financial assistance. Slightly more than one-third of parents have made gifts. For families with more than one child, this fraction is decreasing in the number of children. Conditional on giving anything at all, the table also shows that 5 % of the parents with more than one child give the same amount to all children. Equal sharing is decreasing in the number of children, 10 % of the parents with two children give equally while less than 1 % of the parents with 5 children or more give the same amounts. Allowing some intrafamily variation 7.6 % of the parents give amounts to each child in the interval ± 20 % from the intrafamily mean.

Table 3.2 shows dollar amounts given by parents. In other words, these are the per family gifts given, not the per child gifts received. Clearly, the amounts given are decreasing in the number of children. The table also shows that parents who use equal sharing give more than other parents.

A possible explanation to this is suggested by Table 3.3. Parents giving equal shares have higher net worth than parents not giving equal shares. There also seems to exist a positive correlation between family net worth and the probability that parents will give to their children. Similarly, the total amount spent on children's education increases if one restricts the sample to those who give at all,

Table 3.2: Amounts given.

number of children	number of families giving	amount: family mean USD	standard deviation	number of families giving equally	amount: family mean USD	standard deviation
1	225	4,700	7,033			
2	731	3,003	5,599	77	6,141	13,083
3	615	1,923	4,230	23	5,082	16,758
4	422	1,205	1,618	11	1,811	2,903
>4	535	707	974	4	2,010	2,490
total	2,528	2,123	4,474	115	5,368	13,055

Note. We use the sampling weights.

Table 3.3: Parents' net worth.

	number of families	family net worth: mean USD 1,000	standard deviation
total	6,750	237.9	510.8
giving	2,528	317.7	613.8
equal giving	115	551.8	1,076.9

Note. We use the sampling weights.

give to all, and share equally.

In Table 3.4 we switch to child level data. The idea is to get a first indication if gifts are compensatory or not. We do not know the exact income of the children, only the income range of each child. As is clear from the table, children with earnings above USD 10,000 get less than children with earnings below. This suggests that gifts are compensatory. There seems, however, not to exist so big differences between the children earning USD 10,000 – 25,000 and those earning more than USD 25,000. Children still living with their parents received considerably more than other children.

4. Empirical evidence

This section reports our estimation results. The presentation is organised around five tables. In Table 4.1 the results from a family level probit model can be found. The dependent variable is a dummy variable for if parents give anything to any of their children. The explanatory variables for the children are averages for all

Table 3.4: Gifts and children's earnings.

	number of children	gift amounts: mean USD	standard deviation
children not living with their parents:			
earns < USD 10,000	4,005	612	2,548
earns USD 10,000 − 25,000	6,877	377	1,901
earns > USD 25,000	8,134	384	2,220
children living with their parents	5,043	1,283	4,219
total	24,059	602	2,754

Notes. We use the sampling weights. Earnings data are not available for children living with their parents.

children in the family while the variables for the parents are represented by the characteristics of the main respondent. We use splines for the age and years of education variables.

There are several important results in the table. First, parents with higher net worth are more likely to give. Second, more children being married, on average reduces the probability of giving. Third, the probability is decreasing in the average age of the children while it is increasing in the average years of education.

But most of the child characteristic variables are not significant. Most importantly, the working hours and earnings variables, that measure the childrens resources, are not significant. Below we will return to the question if this is a result of using family averages. Contrasting these results with estimations using child level data shows that using family level data hides important patterns in the data.

This estimation is based on 6,200 families. These families have on average three children each. In Table 4.2 we use child level data, this gives us almost 19,000 observations. It also, however, raises the question about family specific effects. In general, these can be modeled as fixed effects. This has, however, drawbacks in our particular case. Only observations from families where some children receive gifts while others do not, can be used. A fixed (family) effects logit model, for example, can only use observations where there is intrafamily variation in the dependent variable. Hence, all observations of equal sharing would have to be dropped.

Table 4.1: Gift probability, probit, family level.

Child characteristics, family averages			Parent characteristics, main respondent		
works < 30 hours per week	0.068	(0.63)	net worth	0.172	(4.46)
works ≥ 30 hours per week	-0.116	(1.58)	age (age < 55)	0.003	(0.54)
earns USD 10,000 – 25,000	-0.008	(0.12)	age (age ≥ 55)	0.012	(1.29)
earns > USD 25,000	-0.041	(0.56)	years of education (< 11)	0.029	(1.88)
married	-0.249	(3.76)	years of education (11)	0.218	(4.01)
grandchildren	0.007	(0.11)	years of education (> 11)	0.081	(6.51)
age (age < 30)	-0.028	(3.77)	number of children	0.008	(0.92)
age (age 30 – 39)	-0.019	(2.03)	male	-0.038	(0.58)
age (age ≥ 40)	-0.131	(1.88)	African American	-0.355	(6.94)
years of education (< 11)	0.111	(1.92)	Hispanic	-0.231	(3.19)
years of education (11)	0.146	(1.94)	other non–Caucasian	-0.161	(1.25)
years of education (> 11)	0.048	(3.24)	constant	-1.523	(2.31)
natural child	0.008	(0.17)			
lives < 10 miles from parents	0.072	(1.56)			
homeowner	-0.113	(1.95)			
schoolchild	0.794	(8.83)			
number of families	6,154				
$\chi^2(27)$	822.0				
pseudo R^2	0.1019				
log likelihood	-3,623.0				

Notes. Absolute z–values in parentheses. Reference categories are "does not work at all", and "earns < USD 10,000". For summary statistics, see Appendix A.

Table 4.2: Gift probability, random effects probit, child level.

Child characteristics			Parent characteristics, main respondent		
works < 30 hours per week	0.090	(1.31)	net worth	0.322	(7.20)
works $\geq$ 30 hours per week	-0.121	(2.52)	age (age < 55)	-0.004	(0.60)
earns USD 10,000 – 25,000	-0.128	(2.47)	age (age $\geq$ 55)	0.030	(2.65)
earns > USD 25,000	-0.503	(8.40)	years of education (< 11)	0.068	(3.22)
married	-0.184	(4.36)	years of education (11)	0.236	(3.36)
grandchildren	0.172	(4.00)	years of education (> 11)	0.125	(8.25)
age (age < 30)	-0.071	(9.79)	number of children	-0.174	(14.0)
age (age 30 – 39)	-0.036	(4.64)	male	-0.199	(2.31)
age (age $\geq$ 40)	-0.033	(1.13)	African American	-0.415	(6.41)
years of education (< 11)	0.082	(2.06)	Hispanic	-0.288	(2.98)
years of education (11)	0.051	(0.70)	other non–Caucasian	-0.119	(0.72)
years of education (> 11)	0.028	(2.41)	constant	-0.383	(0.67)
natural child	0.174	(3.04)			
lives < 10 miles from parents	0.211	(5.66)			
homeowner	-0.175	(4.14)			
schoolchild	0.424	(7.06)			
number of children	18,980		number of families	6,151	
$\chi^2(27)$	1,012.3				
log likelihood	-6,054.7				

Notes. Absolute z–values in parentheses. Reference categories are "does not work at all", and "earns < USD 10,000".

Therefore we have, instead, relied on a random (family) effects probit model. Comparing with Table 4.1 it is clear that going from family level data to child level data produces much richer results. Almost all estimated coefficients are significant at the conventional 5 %–level.

Here we find, in contrast to the family level estimations reported in Table 4.1, that the probability of giving decreases if the child works more. The table also shows that higher earnings for the child decreases the probability of the parents giving.

Parents are more likely to give to a child if the child has children of its own. Moreover, a natural child is more likely to receive than, for example, a step child or an adopted child.[11] A child with more years of education, a child living close to its parents, and a child still in school is also more likely to receive a gift. The probability decreases if the child is married, if it is a homeowner, and it also decreases with age.

Looking at the parents characteristics instead, we find that higher net worth increases the gift probability. If parents have many children they are less likely to give. On the other hand, the gift probability is increasing in the age and the years of education of the parents.

The remaining three tables have the amounts received by children as dependent variable. The predictions of the theoretical models reviewed in section 2 have more to do with gift amounts than gift probabilities. The results in the tables that follow are, therefore, closer to test of the predictions of the theoretical models than the estimated models for gift probabilities. In Table 4.3 we report estimates of a model with fixed family effects. Only children from families where the parents have made gifts to at least one of the children, but not necessarily to each child, are included.

This leaves us with 2,200 families and almost 6,400 children. When the family effects are modeled as fixed, only the child characteristics can be included among the explanatory variables. The estimation results are similar to those reported for the gift probabilities. Working more, and earning more reduce the gift amount received. This is consistent with gifts being compensatory. Being married, being a homeowner, and age also reduces the amount received.

Having children, being a natural child, living close to the parents, and being a schoolchild increase the amounts that parents give. It is interesting to note that the years of education variables are not significant in this estimation, in contrast to the previous.

In Table 4.4 we repeat the analysis including random family effects instead of fixed. The estimated effects of child characteristics are similar to those of the fixed family effects model.

[11] We have defined a natural child as being natural to both partners in the surveyd household.

Table 4.3: Gift amounts, fixed effects model, conditional on positive family amounts, child level.

Child characteristics		
works < 30 hours per week	0.233	(1.05)
works ≥ 30 hours per week	-0.335	(2.23)
earns USD 10,000 – 25,000	-0.635	(3.67)
earns > USD 25,000	-1.780	(9.29)
married	-0.365	(2.82)
grandchildren	0.559	(4.32)
age (age < 30)	-0.162	(6.99)
age (age 30 – 39)	-0.109	(4.69)
age (age ≥ 40)	-0.026	(0.39)
years of education (< 11)	0.129	(1.01)
years of education (11)	0.080	(0.34)
years of education (> 11)	-0.003	(0.09)
natural child	1.373	(3.76)
lives < 10 miles from parents	0.568	(4.66)
homeowner	-0.427	(3.33)
schoolchild	0.935	(4.90)
constant	6.293	(4.30)
number of children	6,390	
number of families	2,237	
R^2 within	0.135	
R^2 between	0.067	
R^2 overall	0.092	

Notes. The dependent variable is log (amount in USD + 1). Absolute t–values in parentheses. Reference categories are “does not work at all”, and “earns < USD 10,000”.

Table 4.4: Gifts amounts, random effects model, conditional on positive family amounts, child level.

Child characteristics			Parent characteristics, main respondent		
works $<$ 30 hours per week	0.285	(1.62)	net worth	0.582	(7.25)
works $\geq$ 30 hours per week	-0.300	(2.49)	age (age $<$ 55)	0.013	(0.98)
earns USD 10,000 – 25,000	-0.451	(3.38)	age (age $\geq$ 55)	0.079	(3.42)
earns $>$ USD 25,000	-1.256	(8.65)	years of education ($<$ 11)	0.107	(2.25)
married	-0.349	(3.36)	years of education (11)	-0.265	(1.76)
grandchildren	0.423	(4.04)	years of education ($>$ 11)	0.065	(2.32)
age (age $<$ 30)	-0.171	(9.52)	number of children	-0.434	(20.1)
age (age 30 – 39)	-0.060	(3.26)	male	-0.528	(2.97)
age (age $\geq$ 40)	-0.065	(1.17)	African American	-0.350	(2.56)
years of education ($<$ 11)	0.071	(0.70)	Hispanic	-0.290	(1.42)
years of education (11)	0.070	(0.38)	other non–Caucasian	-0.316	(0.92)
years of education ($>$ 11)	0.036	(1.33)	constant	7.559	(5.76)
natural child	0.289	(2.53)			
lives $<$ 10 miles from parents	0.491	(5.50)			
homeowner	-0.263	(2.61)			
schoolchild	0.697	(4.76)			
number of children	6,390		number of families	2,237	
$\chi^2(27)$	1,375.4				
R^2 within	0.131				
R^2 between	0.242				
R^2 overall	0.183				

Notes. The dependent variable is log (amount in USD + 1).
Absolute t–values in parentheses. Reference categories are "does not work at all", and "earns $<$ USD 10,000". Parents' net worth measured in million USD.

In this case, we can also include parent characteristics. Higher net worth increases the amount that the parents give to a child. The amount is also increasing in the age and the years of education of the parent. More children, on the other hand, reduces the amount given to each child.

Finally, we have estimated a fixed family effects Tobit model for the gift amounts using the approach of Honoré (1992). Now we can also include children from families where there are no gifts. The sample increases to 3,100 families and 11,200 children.

The estimator was developed for "regular" panel data with two "time periods" (in our case two children) per family. Since our sample includes families with more than two children (unbalanced panel data set), we consider all paired combinations of children within a family. Estimating on all perceivable combinations of children yields a set of estimates which will differ, but can be linked by a minimum distance criterion using appropriate moment conditions.

In order to form pairwise combinations of children, one needs to know which children to compare—some order is needed (in traditional panels this is clear). In our case, we order children according to age. The convergence of the estimator is sensitive to the amount of censoring. We had to disregard all pairwise combinations of children where more than 90 % of the observations were censored (zero). Also, we disregarded all combinations of kids with comprising less than 100 households in order to have identification.

Table 4.5 reports the results. Once more, we obtain results consistent with parents having a compensatory gift behavior. If the child works more or earns more the gift amount will be reduced.

Having children and being a natural child (borderline) increase the gift amounts. For these under the age of 40, the gift amount is decreasing in age. For most of the other variables, the signs of the estimated coefficients remain the same compared to Tables 4.3 and Table 4.4, but the t–statistics are lower here.

As there is no information on the earnings of children living at home with their parents, there are families in our sample where only some of the children are included in the estimations. In order to check if the results are sensitive to this we have also estimated using a subsample with families with only adult children. Appendix B reports these estimations. The general pattern of results stay the same using this subsample. Most importantly, gift amounts and gift probabilities remain compensatory.

5. Concluding remarks

Empirical studies of intergenerational transfers usually find that bequests are equally divided among heirs while *inter vivos* gifts tend to be compensatory.

Table 4.5: Gift amounts, fixed effects Tobit, child level.

Child characteristics		
works < 30 hours per week	-0.593	(0.77)
works ≥ 30 hours per week	-1.238	(2.46)
earns USD 10,000 – 25,000	-1.008	(1.83)
earns > USD 25,000	-2.940	(4.71)
married	-0.661	(1.53)
grandchildren	1.010	(2.32)
age (age < 30)	-0.275	(3.03)
age (age 30 – 39)	-0.186	(2.29)
age (age ≥ 40)	0.107	(1.13)
years of education (< 11)	0.357	(1.48)
years of education (11)	-0.825	(0.74)
years of education (> 11)	-0.203	(1.41)
natural child	2.870	(1.94)
lives < 10 miles from parents	0.818	(1.80)
homeowner	-0.716	(1.61)
schoolchild	0.656	(1.12)
number of children	11,212	
number of families	3,129	

Notes. The dependent variable is log (amount in USD + 1).
The table reports final estimates from unbalanced Honoré LS [MDE]. Absolute t–values in parentheses.
Children are ordered according to age.
Reference categories are "does not work at all", and "earns < USD 10,000".

Using the HRS data set from the U.S. we find that only 5 % of parents who give, divide their gifts equally among their children. Estimating probit models, using family panels, we find that gifts are compensatory in the sense that a child is more likely to receive a gift if she works fewer hours and has lower income than than her brothers and sisters.

These results carry over to the amounts given. Estimations of fixed and random effects models, conditional on positive family gift amounts, and fixed effect Tobit estimations show that the fewer hours a child works and the lower her income is, the more the parents give.

The empirical findings suggest that gifts are compensatory. This is consistent with the predictions of the altruistic model of intergenerational transfers.

A. Appendix. Sample statistics and variable definitions

The sample statistics for the children can be found Table A.1. The columns to the left report sample statistics for the individuals while the columns to the right concern the sample statistics of the means of the children in each family.

Table A.2 report the sample statistics for the parent who is the main respondent.

Table A.1: Sample statistics, children.

	individuals:					family means:				
variable	obs	mean	s d	min	max	obs	mean	s d	min	max
gift received	24,059	.158				6,750	.204	.321	0	1
gift amount, USD	24,059	511	2,451	0	80,000	6,750	721	2,606	0	80,000
does not work at all	22,473	.211				6,613	.205	.278	0	1
works $<$ 30 h per week	22,473	.095				6,613	.103	.210	0	1
works $\geq$ 30 h per week	22,473	.694				6,613	.693	.320	0	1
earns $<$ USD 10,000	19,016	.211				6,157	.194	.308	0	1
earns USD 10,000-25,000	19,016	.362				6,157	.358	.365	0	1
earns $>$ USD 25,000	19,016	.428				6,157	.447	.403	0	1
married	22,475	.531				6,613	.512	.350	0	1
grandchildren	22,475	.583				6,613	.540	.360	0	1
age	24,059	28.8	7.14	1	60	6,750	28.6	5.86	1	54.7
years of education	22,440	12.8	2.22	1	17	6,611	13.1	1.84	2.33	17
natural child	24,059	.733				6,750	.791	.384	0	1
lives $<$ 10 m from parents	19,015	.405				6,157	.407	.384	0	1
homeowner	19,947	.416				6,267	.416	.370	0	1
schoolchild	22,475	.119				6,613	.140	.261	0	1

Table A.2: Sample statistics, parents.

		main respondent:			
variable	n of obs	mean	s d	min	max
gift made	6,750	.375			
gift amount, USD	6,750	1,821	6,000	0	240,000
net worth, USD 1,000	6,750	211	477	-745	8,735
age	6,749	53.8	5.31	23	72
years of education	6,750	11.9	3.02	0	17
number of children	6,750	3.56	2.03	1	19
male	6,750	.079			
African American	6,750	.187			
Hispanic	6,750	.095			
other non–Caucasian	6,750	.020			

B. Appendix. Subsample: Families with adult children only

This appendix reports estimations using the same specification as in Section 4 but restricting the sample to families with adult children only. This reduces the sample from 6,750 families with 24,059 children to 2,905 families with 9,098 children. The qualitative results remain the same in general. Most importantly gifts are compensatory also in this restricted sample.

Table B.1: Gift probability, probit, family level.

Child characteristics, family averages			Parent characteristics, main respondent		
works $<$ 30 hours per week	0.268	(1.52)	net worth	0.186	(3.47)
works $\geq$ 30 hours per week	0.127	(1.17)	age (age $<$ 55)	-0.001	(0.13)
earns USD 10,000 – 25,000	-0.015	(0.13)	age (age $\geq$ 55)	0.002	(0.20)
earns $>$ USD 25,000	-0.191	(1.57)	years of education ($<$ 11)	0.043	(1.61)
married	-0.156	(1.72)	years of education (11)	0.166	(2.04)
grandchildren	0.145	(1.54)	years of education ($>$ 11)	0.107	(5.78)
age (age $<$ 30)	-0.034	(2.11)	number of children	0.004	(0.28)
age (age 30 – 39)	-0.003	(0.27)	male	-0.243	(2.50)
age (age $\geq$ 40)	-0.158	(1.96)	African American	-0.344	(4.22)
years of education ($<$ 11)	0.156	(1.61)	Hispanic	-0.196	(1.48)
years of education (11)	0.251	(2.24)	other non–Caucasian	-0.024	(0.11)
years of education ($>$ 11)	0.007	(0.24)	constant	-2.020	(1.67)
natural child	0.054	(0.75)			
lives $<$ 10 miles from parents	0.135	(1.89)			
homeowner	-0.278	(3.21)			
number of families	2,903				
$\chi^2(27)$	235.6				
pseudo R^2	0.0667				
log likelihood	-1,648.8				

Notes. Absolute z–values in parentheses. Reference categories are “does not work at all”, and “earns $<$ USD 10,000”.

Table B.2: Gift probability, random effects probit, child level.

Child characteristics			Parent characteristics, main respondent		
works $<$ 30 hours per week	0.016	(0.15)	net worth	0.346	(5.61)
works $\geq$ 30 hours per week	-0.090	(1.25)	age (age $<$ 55)	-0.001	(0.12)
earns USD 10,000 – 25,000	-0.078	(0.97)	age (age $\geq$ 55)	0.020	(1.26)
earns $>$ USD 25,000	-0.448	(4.98)	years of education ($<$ 11)	0.085	(2.40)
married	-0.159	(2.63)	years of education (11)	0.216	(2.06)
grandchildren	0.177	(2.86)	years of education ($>$ 11)	0.152	(6.71)
age (age $<$ 30)	-0.050	(4.33)	number of children	-0.206	(9.75)
age (age 30 – 39)	-0.042	(4.02)	male	-0.330	(2.70)
age (age $\geq$ 40)	-0.026	(0.74)	African American	-0.355	(3.54)
years of education ($<$ 11)	0.114	(1.70)	Hispanic	-0.178	(1.05)
years of education (11)	0.077	(0.72)	other non–Caucasian	0.031	(0.11)
years of education ($>$ 11)	-0.001	(0.11)	constant	-1.573	(1.50)
natural child	0.165	(1.95)			
lives $<$ 10 miles from parents	0.245	(4.56)			
homeowner	-0.233	(3.92)			
number of children	9,086		number of families	2,903	
$\chi^2(27)$	407.5				
log likelihood	-2,978.3				

Notes. Absolute z–values in parentheses. Reference categories are “does not work at all”, and “earns $<$ USD 10,000”.

Table B.3: Gift amounts, fixed effects model, conditional on positive family amounts, child level.

Child characteristics		
works $<$ 30 hours per week	-0.207	(0.51)
works $\geq$ 30 hours per week	-0.464	(1.73)
earns USD 10,000 – 25,000	-0.489	(1.55)
earns $>$ USD 25,000	-1.729	(4.98)
married	-0.368	(1.68)
grandchildren	0.506	(2.32)
age (age $<$ 30)	-0.154	(3.44)
age (age 30 – 39)	-0.141	(3.82)
age (age $\geq$ 40)	-0.000	(0.01)
years of education ($<$ 11)	-0.149	(0.50)
years of education (11)	0.509	(1.21)
years of education ($>$ 11)	-0.036	(0.53)
natural child	1.398	(2.26)
lives $<$ 10 miles from parents	0.833	(4.07)
homeowner	-0.573	(2.72)
constant	9.722	(2.86)
number of children	2,608	
number of families	863	
R^2 within	0.109	
R^2 between	0.070	
R^2 overall	0.079	

Notes. The dependent variable is log (amount in USD + 1). Absolute t–values in parentheses. Reference categories are "does not work at all", and "earns $<$ USD 10,000".

Table B.4: Gifts amounts, random effects model, conditional on positive family amounts, child level.

Child characteristics			Parent characteristics, main respondent		
works < 30 hours per week	-0.006	(0.02)	net worth	0.564	(5.59)
works ≥ 30 hours per week	-0.270	(1.32)	age (age < 55)	0.008	(0.30)
earns USD 10,000 – 25,000	-0.332	(1.43)	age (age ≥ 55)	0.077	(2.37)
earns > USD 25,000	-1.093	(4.43)	years of education (< 11)	0.193	(2.11)
married	-0.347	(2.10)	years of education (11)	-0.486	(2.06)
grandchildren	0.434	(2.56)	years of education (> 11)	0.085	(1.99)
age (age < 30)	-0.127	(3.84)	number of children	-0.597	(14.8)
age (age 30 – 39)	-0.124	(4.55)	male	-0.445	(1.65)
age (age ≥ 40)	-0.028	(0.35)	African American	-0.121	(0.53)
years of education (< 11)	-0.042	(0.18)	Hispanic	0.139	(0.36)
years of education (11)	0.226	(0.71)	other non–Caucasian	-0.390	(0.63)
years of education (> 11)	0.036	(0.85)	constant	7.841	(2.61)
natural child	0.365	(2.07)			
lives < 10 miles from parents	0.589	(4.17)			
homeowner	-0.235	(1.49)			
number of children	2,608		number of families	863	
$\chi^2(26)$	573.4				
R^2 within	0.105				
R^2 between	0.388				
R^2 overall	0.182				

Notes. The dependent variable is log (amount in USD + 1).
Absolute t–values in parentheses. Reference categories are “does not work at all”, and “earns < USD 10,000”. Parents’ net worth measured in million USD.

Table B.5: Gift amounts, fixed effects Tobit, child level.

Child characteristics		
works $<$ 30 hours per week	-0.950	(1.08)
works $\geq$ 30 hours per week	-1.310	(2.08)
earns USD 10,000 – 25,000	-1.392	(2.05)
earns $>$ USD 25,000	-3.168	(4.04)
married	-0.649	(1.33)
grandchildren	1.060	(1.95)
age (age $<$ 30)	-0.235	(1.99)
age (age 30 – 39)	-0.247	(3.18)
age (age $\geq$ 40)	0.224	(1.67)
years of education ($<$ 11)	-0.210	(0.60)
years of education (11)	0.353	(0.26)
years of education ($>$ 11)	-0.197	(0.99)
natural child	3.080	(2.82)
lives $<$ 10 miles from parents	1.242	(2.54)
homeowner	-0.845	(1.71)
number of children	8,665	
number of families	2,500	

Notes. The dependent variable is log (amount in USD + 1). The table reports final estimates from unbalanced Honoré LS [MDE]. Absolute t–values in parentheses. Children are ordered according to age. Reference categories are "does not work at all", and "earns $<$ USD 10,000".

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