BEQUESTS, GIFTS, AND EDUCATION*
Swedish evidence on parents' transfer behavior

Katarina Nordblom Henry Ohlsson

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Abstract

We study the motives behind parents' transfers to their children, and the relationship between tangible transfers and educational investments. Another issue is the channels parents choose for tangible transfers. Do they use bequests and *inter vivos* gifts as substitutes or complements? We use a recent Swedish data set. It is superior to previously used data as it has information on both inheritances and gifts received. Our empirical analysis gives some support for parents having altruistic motive for their transfers. We also find evidence that parents use bequest and gifts as substitutes.

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Keywords: bequests, inheritances, *inter vivos* gifts, education, altruism, compensatory transfers

Correspondence to: Katarina Nordblom or Henry Ohlsson, Department of Economics, Göteborg University, PO Box 640, SE–405 30 Göteborg, Sweden,
email <katarina.nordblom@economics.gu.se> or <henry.ohlsson@economics.gu.se>

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1 Introduction

A main objective of this paper is to study the motives behind parents' transfers to their children. This is crucial to know for a wide range of different economic issues, e.g., the possible effects of fiscal policy, the optimal design of tax systems, the determinants of savings, and the equality of opportunity.

Transfers of financial and tangible property—bequests and *inter vivos* gifts—is one type of intergenerational transfers.[1] These transfers are important in macroeconomics, for example, where the Ricardian equivalence predictions rest on the assumption of dynastic behavior. This means that people are assumed to have altruistic bequest motives, see Becker (1974) and Barro (1974). Intergenerational transfers are also important when discussing the distribution of income and wealth. The extent to which wealth is carried over from one generation to the next affects how equal opportunities really are. A third field for which intergenerational transfers are important is savings. Strong bequest motives will affect savings behavior. This concerns saved amounts but also the timing of savings over the life cycle. Finally, there are also public finance aspects of intergenerational transfers. Depending on the determinants of transfer behavior, taxes on *inter vivos* gifts, bequests, and inheritances may or may not create excess burdens.

There are different competing theories explaining parents' transfer behavior. Bequests may be accidental, Davies (1981) presents a model that is a version of the life–cycle model.[2] There are several models of voluntary intergenerational transfers. As an alternative to the altruistic model, Blinder (1974), Andreoni (1989), and Hurd (1989) discuss egoistic (joy of giving) models. A third model is the exchange model presented by Bernheim et al. (1985) and Cox (1987). Social norms and strategic interactions are other motives suggested in the theoretical literature on intergenerational transfers.

Many empirical studies have been published within the field of intergenerational transfers during the last years, especially using U.S. data.[3] Here we use recent Swedish data from the 1998 wave of the "Household market and nonmarket activities"-survey (HUS).[4] This is the first survey for several

[1] Laitner (1997) and Masson and Pestieau (1997) are two surveys of the literature on intergenerational transfers.

[2] Friedman and Warshawsky (1990) report weak support of the model.

[3] Menchik (1980, 1988), Laitner and Juster (1996), Laitner and Ohlsson (2001), Tomes (1981, 1988), and Wilhelm (1996) study bequests and inheritances while Altonji et al. (1992), Altonji et al. (1997), Cox (1987), Cox and Rank (1992), Dunn and Phillips (1997), Hochguertel and Ohlsson (2000), McGarry and Schoeni (1995), McGarry (1999), McGarry (2001), and Poterba (2001) study *inter vivos* gifts. Empirical studies of bequests and inheritances using data from other countries are Arrondel et al. (1997) (France), and Jürges (2001) (Germany). Gifts are studied by Arrondel and Wolff (1998), Arrondel and Laferrère (2001), Arrondel and Masson (2001) (France), Cox et al. (1997) (Poland), and Guiso and Jappelli (1991) (Italy).

[4] The HUS survey is presented at <www.handels.gu.se/econ/econometrics/hus/husin.htm>. There are 8 waves of this survey during the period 1984 – 2000.

decades with such detailed information about inheritances and *inter vivos* gifts in Sweden.[5] It is unique for Sweden as it simultaneously has information on both *inter vivos* gifts and inheritances. It is also superior to previous Swedish data as it is possible to distinguish between transfers received from parents and transfers from relatives and other people. This allows us to isolate transfers from parents to children.

Parents intentionally, and unintentionally, make transfers to their children in different ways. Parents can transfer tangible and financial property by bequests and *inter vivos* gifts. Biological transfers of natural talents and abilities, and purchases of education and other human capital are other possibilities. The interactions between these different channels for transfers are important for assessing the effects of the transfers.[6] A second main objective is, therefore, to study the channels parents choose for making these transfers. We will here focus on two issues:

1. What is the relationship between parents' bequests and *inter vivos* gifts, on the one hand, and their investment in human capital for their children on the other?

2. Do parents use bequests and *inter vivos* gifts as substitutes or complements?

Empirical studies of high tax countries such as Sweden may shed new light on the links between different channels for parents' transfers. With equal opportunity to education publicly provided free of charge there seems to be little need for parents to top up public provision by privately purchasing more human capital for their children. If this is the case, transfers will be made through the other channels. Results in this paper, however, suggest that there are strong positive correlations between *inter vivos* gifts, bequests, and human capital formation. People who receive *inter vivos* gifts and/or inherits and have highly educated parents are also those who have the highest level of education and highest income.

Our main results are: The empirical analysis gives some support for parents having altruistic motive for their transfers. Property transfers from parents are positively related to the educational level. We also find some weak evidence that parents use bequest and *inter vivos* gifts as substitutes.

As mentioned above we can distinguish between transfers received from parents and transfers from relatives and other people. This allows us to study the question: Do other members of the extended family have the same transfers motives as parents? We find that transfers from relatives are less related to the educational level than are parental transfers. There is

[5]Blomquist (1979) and Laitner and Ohlsson (2001) are two previous empirical studies of inheritances using Swedish data.

[6]Laitner and Ohlsson (2001) find a stronger positive correlation between education and amounts inherited for U.S. data than for Swedish data.

also some evidence of a positive relationship between transfers from parents and transfers from relatives.

The paper is organized as follows: Our theoretical framework is presented in section 2. In this section we first present a model for thinking about the relationship between parents' transfers of human and physical capital to their children. We then discuss theoretical models for the choice between bequests and *inter vivos* gifts. Section 3 presents the data and some statistics. Descriptive statistics for all variables used in the empirical analysis can be found in the appendix. Section 4 reports our empirical results on parents transfers. The empirical evidence on the patterns in property transfers from relatives can be found in section 5. Finally, Section 6 concludes.

2 Theoretical framework

There are several theories suggesting different motives for bequests and *inter vivos* gifts. Most of these deal with bequests from parents, which are the most common transfers, also in our data. Bequests may be accidental but there are also altruistic, egoistic, and exchange motives suggested in the literature.[7] Our point of departure is a model with an altruistic transfer motive. In this model we do not distinguish between different kinds of property transfers, but in Section 2.2 we add a discussion about the timing of transfers. This model is then the basis of our empirical analysis in Section 4.

2.1 Property transfers or human capital investments?

Altruistic parents allocate their resources to make the marginal utilities of all members of the family more equal. The extent depends on the degree of altruism. If they want to transfer resources to their children they can transfer property or human capital. Becker and Tomes (1986) argue that there are probably diminishing returns to human capital investments, while there are constant returns to property transfers. It is, therefore, likely that wealthy parents use both channels, while less wealthy parents do not transfer property and also invest less in the human capital of their children.

A simple model of the choice between property transfers and human capital investments can illustrate this.[8]

Suppose that an altruistic parent maximizes a two–period utility function. To simplify we assume that she discounts future consumption with a zero percent discount rate. The degree of altruism is represented by γ. The

[7] See Masson and Pestieau (1997) for an overview of different bequest motives and their implications.

[8] The model resembles those of Becker and Tomes (1986) and Nordblom (2002).

parent maximizes:

$$\begin{aligned}\max_{\{x,c_k,s,b\}} U = {} & u_{1p}\left(w_p h_p - x - c_k - s_p\right) + \\ & + u_{2p}\left(s_p - b\right) + \\ & + \gamma u_{1k}\left(c_k\right) + \\ & + \gamma u_{2k}\left(w_k h_k(x,g) + b\right),\end{aligned} \tag{1}$$

where utility in the two periods for parent, p, and child, k, are denoted in an evident way. The parent's income depends on the base wage rate w_p which is proportional to the predetermined human capital of the parent h_p and, therefore, exogenously determined. The parent chooses how much to invest, x, in the child's human capital, h_k. The child's human capital is also affected by the amount of publicly provided education, g.[9]

Human capital is produced according to a production function with positive but decreasing returns to x and g. This implies that the signs of the first and second order derivatives are $h_k^x > 0$, $h_k^g > 0$, $h_k^{xx} < 0$, and $h_k^{gg} < 0$. We assume that the parent always makes at least some investment in the child's human capital. This is assured by assuming that the Inada conditions are fulfilled for the human capital production function.

The parent also chooses the consumption of the child during the first period, c_k. The third choice variable of the parent is the amount saved during the first period, s_p. Finally, the parent may choose to transfer property to the child, b. We have to consider non–negativity constraints for these transfers.

The resulting first order conditions from maximizing (1) can be rearranged to:

$$s_p: \qquad u'_{1p} = u'_{2p}, \tag{2a}$$

$$c_k: \qquad u'_{1p} = \gamma u'_{1k}, \tag{2b}$$

$$x: \qquad u'_{1p} = \gamma u'_{2k} w_k h_k^x, \tag{2c}$$

$$b: \qquad u'_{2p} \geq \gamma u'_{2k}, \quad b \geq 0 \quad \frac{\partial U}{\partial b} b = 0. \tag{2d}$$

The amount saved should be set so that the parent's marginal utility of period 1 consumption equals that of period 2 consumption. This is the interpretation of (2a). The parent's marginal utility of period 1 consumption should, furthermore, be equal to the parent's evaluation of the child's period 1 consumption according to (2b). The third first order condition (2c) concerns the parent's investment in the child's human capital. It says that the parent's marginal utility of period 1 consumption should be equal to the

[9] Nordblom (2002) discusses the interaction between parents' investments in their children's human capital and publicly provided education in a similar model.

parent's valuation of the marginal contribution to the child's income of a marginal increase in human capital investment.

Suppose that we study a *corner solution* with no property transfers, $b = 0$, and let's assume that $\gamma = 1$. The labor income of the parent should provide the funds for her own consumption during two periods and the child's consumption during period 1. Using (2a) – (2b) and substituting into (2c) yields the condition

$$u'_{1p}\left(\frac{1}{3}[w_p h_p - x]\right) = u'_{2k}\left(w_k h_k(x,g)\right) w_k h_k^x. \tag{3}$$

We can then differentiate (3) and solve for changes in x as a function of the exogenous variables. This reveals that the parent's choice of investment in the child's human capital is increasing in the income of the parent, $w_p h_p$. It is, on the other hand, decreasing in the amount of publicly provided education, g. The effect of the child's wage rate is ambiguous

$$\left.\frac{dx}{dw_p h_p}\right|_{b=0} > 0, \tag{4a}$$

$$\left.\frac{dx}{dg}\right|_{b=0} \gtreqless 0, \tag{4b}$$

$$\left.\frac{dx}{dw_k}\right|_{b=0} \gtreqless 0. \tag{4c}$$

What will happen to the human capital of the child? It is obvious from (4a) that higher parental income will lead to more human capital. The effect of increasing public provision, on the other hand, is not that clear cut, depending on the cross derivative h_k^{xg}. If $h_k^{xg} \geq 0$ the increase in g will unambiguously increase human capital of the child. If, on the other hand, x and g are substitutes, i.e. $h_k^{xg} < 0$, human capital of the child may instead decrease.

Comparing (2c) and (2d) shows that the corner solution implies

$$1 < w_k h_k^x(x,g). \tag{5}$$

In the case of an *interior solution* this condition will instead hold with equality. It can be shown that the right hand side of (5) is increasing in the wage rate of the child, w_k. It is, on the other hand, decreasing in the parent's income, $w_p h_p$. The effect of increased public provision of education is in general ambiguous. Assuming x and g are independent implies that a higher g will increase the right hand side of (5). The effect is the opposite if the two inputs to human capital formation instead are perfect substitutes. The right hand side will then be decreasing in g.

Table 1: Corner solution.

	sign of the effect on	
increase in	the likelihood of positive transfers $-w_k h_k^x(x,g)$	the child's human capital $h_k(x,g)$
the parent's income, $w_p h_p$	+	+
publicly provided education, g,		
x and g perfect substitutes	+	+
x and g independent	−	?
the child's wage rate, w_k	−	?

We can interpret these effects as changes in the likelihood of an interior solution, or in other words, the likelihood of positive transfers. The likelihood of $b > 0$ is, therefore, increasing in the parent's income while it is decreasing in the child's wage rate. Thus, a parent who is poorly educated or has a low wage rate is less likely to make property transfers. Moreover, a child who has a high wage rate is less likely to receive property transfers. If x and g are perfect substitutes more g will increase the likelihood of positive transfers. This is reversed if x and g are independent or complementary.

Table 1 summarizes some of the comparative statics in the corner solution. An increase in the parent's income has positive effects on both the likelihood of positive transfers and the child' human capital. If the parent's investment in the child's human capital and publicly provided education are perfect substitutes we find a similar result. There is, in other words, a positive relationship between the level of human capital and the likelihood of property transfers.

Now let's turn to the interior solution. This requires that the first order condition (2d) holds as an equality. The parent's marginal utility of period 2 consumption must equal the parent's evaluation of the child's period 2 consumption. Moreover, the inequality (5) will now hold as a condition for utility maximization. We can differentiate the condition to find the impact of the exogenous variables on the parent's investment in the child's human

capital. This reveals that

$$\left.\frac{dx}{dw_p h_p}\right|_{b>0} = 0, \tag{6a}$$

$$\left.\frac{dx}{dg}\right|_{b>0} \gtreqless 0, \tag{6b}$$

$$\left.\frac{dx}{dw_k}\right|_{b>0} > 0. \tag{6c}$$

The parent's choice of investment in the child's human capital is now independent of the income of the parent, $w_p h_p$. The effect of the amount of publicly provided education, g, depends on the cross derivative h_k^{xg}. If the two inputs are perfect substitutes, the derivative (6b) is negative. The derivative is zero if the two inputs are independent, and positive if they are complements. The effect of the child's wage rate, w_k, is, on the other hand, always positive. A higher wage rate for the child will increase the returns on human capital investments. The parent's human capital investments are, therefore, positively related to the child's wage rate.

What will happen to the human capital of the child? It is obvious from (6a) that higher parent income will not affect the child's human capital. The effect of increasing public provision, on the other hand, is not that clear cut. If x and g are perfect substitutes the more publicly provided education will not increase the human capital of the child. The direct effect of the increase in g will be counteracted by a decrease in x. If instead x and g are independent or complementary, more publicly provided education will increase the human capital of the child.

We are now ready to discuss the impact of the exogenous variables on the property transfers. Combining the first order conditions (2a), (2b), and (2d) yields

$$b = \frac{1}{4}[w_p h_p - x] - \frac{3}{4} w_k h_k(x, g). \tag{7}$$

Differentiating (7) and combining with the results in (6a) – (6c) gives the comparative static results for property transfers. The parent's property transfers is increasing in the income of the parent, $w_p h_p$. The effect of the amount of publicly provided education, g, is ambiguous. If the two inputs are perfect substitutes, the impact is positive. The impact is negative if the two inputs are independent or complementary. The effect of the child's wage rate, w_k, is, on the other hand, always negative.

Table 2 summarizes some of the comparative statics in the interior solution. An increase in the parent's income has a positive effects on property transfers while it has no effect on the child' human capital. If the parent's investment in the child's human capital and publicly provided education are perfect substitutes we find a similar result.

Table 2: Interior solution.

increase in	sign of the effect on the property transfers b	sign of the effect on the child's human capital $h_k(x,g)$
the parent's income, $w_p h_p$	+	0
publicly provided education, g,		
x and g perfect substitutes	+	0
x and g independent or complementary	−	+
the child's wage rate, w_k	−	+

If the two inputs are independent the effects on property transfers and human capital go in opposite directions. The same is true for increases in the child's wage rate. This implies that there is a negative relationship between the size of property transfers and of human capital investments.

2.2 Bequests or *inter vivos* gifts?

The model presented in the previous subsection does not make a distinction between different types of property transfers. Parents can make transfers during their lifetime—*inter vivos* gifts. An alternative is to bequeath, thus making the transfer *post mortem*.

The existence of liquidity constraints may make parents choose gifts rather than bequests (Bernheim et al., 1985). It is difficult for children to borrow against future inheritances because of imperfect markets and asymmetric information. Parents may, on the other hand, choose to postpone transfers as long as possible for strategic reasons (Cremer and Pestieau, 1996). The motivation for this is to provide the right incentives to study and work for the children.

There are also some papers where it is assumed that the actions of a selfish child also may affect the income of an altruistic parent. In the model of Bruce and Waldman (1990) *inter vivos* gifts and bequests are substitutes in the following sense:[10] If *inter vivos* gifts are large enough there will be no bequests. The parent is, however, in a second best situation. If the parent only bequeaths a selfish child will, on the one hand, act as to maximize the total income of the family. But it will, on the other hand, save too little the first period expecting the parent to bequeath the second period. This is the Samaritan's Dilemma. If the parent instead chooses only to transfer *inter vivos* during the first period, the child will choose to save an

[10] See also Lindbeck and Weibull (1988).

efficient amount. The problem is that the child will not act as to maximize total family income during the first period. Instead it will be a rotten kid maximizing its own income at the expense of the parent. There can thus be an efficiency trade off between bequests and *inter vivos* gifts.

3 The data

Our data set is from the 1998 wave of the HUS survey. The complete cross section data set has information about 3,912 individuals belonging to 2,375 households. Of these, 2,899 people have answered the questions about inheritances and *inter vivos* gifts. The data set is rich.[11] We do not only have information about the number and size of inheritances and gifts, we also know from whom the transfer came; parents, relatives, or someone else. All adult members of the interviewed households were asked:[12]

> "Have you or anyone else in your household received an inheritance worth at least SEK 1,000 or equivalent value?"

A major drawback is, however, that no further specifications are made about who in the household that received the inheritance. This creates an assignment problem. In the case where spouses have referred to different inheritances, we have attributed the inheritance to the spouse referring to it. When both spouses seem to have referred to the same inheritance it is difficult to determine who has actually inherited. If an inheritance comes from parents and only one spouse has at least one deceased parent, we have attributed the inheritance to that spouse. In cases when the inheritance has not come from a parent, or when both spouses have deceased parents it is not possible to determine which of the spouses the inheritance should be assigned to. These observations were not included, leaving us with a sample of 2,553 people.

Slightly more than one out of five, or 545 individuals, say that they have inherited, see Table 3. On household basis 32% of the households in our sample have inherited. This share is somewhat lower than found elsewhere for Sweden. In their study based on the Swedish Level of Living Survey, Laitner and Ohlsson (1997), e.g., found that 47% of the Swedish households had inherited. Our low figure is mainly due to the fact that the respondents are on average somewhat younger than what would be representative for the Swedish population, and age has a positive effect on the probability of inheriting.

Of the 545 individuals who have inherited, 379 have received one inheritance, 123 two inheritances, and 40 three or more inheritances. Three is the

[11] Klevmarken (2001) discusses the relative importance of inheritances and gifts for total net worth and wealth inequality using this data.

[12] The gift question is analogous.

Table 3: Incidence of inheritance.

	n of respondents	
have inherited	545	
have not inherited	1,944	
don't know	64	
sample used		2,553
not possible to assign		347
missing		1,012

maximum number of inheritances in the survey. If we want to compare the inherited amounts we need to discount the inheritances to the same year. For this we need to know both the year and the amount of each inheritance. Some observations do not include the year, while others only state the year of inheritance but not the amount. This creates 55 additional missing observations of amounts.

The amounts are deflated to the 1998 values using the consumer price index and a 0% real interest rate. The survey also contains information from whom the inheritance was received. The inherited amounts from parents are higher than the amounts from relatives. This is clear from Table 4.

We have also calculated summary statistics for a subsample of respondents whose both parents are deceased. The data set includes individuals who have been part of a panel for longer or shorter time. Unfortunately, they are only asked whether their parents are deceased when they enter the panel. Suppose that someone in 1984 stated that his parents were alive and then inherited a parent in, say 1991. We could of course assume that at least one parent is deceased in 1998. The problem is that we cannot make any qualified guesses for those who have not received any inheritances. Hence, we only include those who have actually reported that both their parents are dead. This leaves us with a subsample of 629 individuals. Of these, 199, or 32%, have received at least one inheritance. And 142, or 23%, of them have inherited a parent.[13]

Financial transfers can be made through different channels. In addition to inheritances our data also permit us to study *inter vivos* gifts and loans. We can, therefore, study how different types of transfers are related, especially those from parents. When it comes to *inter vivos* transfers one could either leave gifts or lend money, where the latter could be used as a means of avoiding tax from the former. Although Table 5 shows that most transfers are inheritances, rather than *inter vivos* gifts, large transfers are typically

[13]These figures are low because we have excluded a number of people with positive inheritances. However, in the original sample, which overstates the number of inheritances, no more than 30% with both parents deceased have inherited a parent.

Table 4: Inherited amounts, 1998 SEK thousands.

	all		*parents deceased*	
from	n of obs	mean	n of obs	mean
parents	347	153	142	172
		(258)		(326)
relatives	187	96	60	116
		(216)		(314)
others	15	121	6	197
		(178)		(262)
total	490	230	173	215
		(1,600)		(421)

Note. Standard deviations within parentheses.

Table 5: Joint incidence of inheritances and *inter vivos* gifts from parents, parents deceased.

	number of respondents
inheritances and *inter vivos* gifts	19
only inheritances	118
only *inter vivos* gifts	4
neither	473
total	614

made early in life. Inheritances occur later in the life cycle than do *inter vivos* gifts. The mean age for inheriting a parent is 44.6 years, while the mean age for receiving a parental *inter vivos* gift is 38.5 years. However, the mean age for receiving a gift exceeding SEK 100, 000 is only 33 years old, which is a result opposite those who claim strategic transfer motives, that parents keep their wealth long enough to be able to influence children's behavior.

There are only 19 individuals with both parents deceased who have reported both inheritance and *inter vivos* gifts from parents.

There are also reasons to question the reliability of the gift data. Only a third of the respondents say that they have ever received a gift worth SEK 1,000 or more. This is probably a far too low share. All gifts exceeding SEK 10,000 are subject to gift taxation. But many taxable monetary gifts are probably never reported to the tax authorities. This may influence the

Table 6: Incidence of transfers, correlations between different types, parents deceased.

	inheritance, parents	loan from family	gift from relatives	inheritance, relatives	university
gift from parents	0.25	-0.02	-0.02	0.17	0.06
inheritance, parents		0.08	0.10	0.35	0.08
loan from family			0.19	-0.03	0.09
gift from relatives				-0.03	0.05
inheritance, relatives					-0.02

Note. 400 observations

willingness of the respondents to report gifts received. However, we have to make do with the data we have. We study the relations between different transfers keeping in mind that the gifts data perhaps not are as good as we wish.

A third possibility for a parent (or someone else) to transfer is to lend money. Our data contains information on whether households have any debt to anyone within the family—parents or relatives. It is, unfortunately, not possible to separate loans from parents from loans from relatives. We compute simple correlation to get an initial idea of how parents and relatives allocate their transfers.

Table 6 reports the correlations between the incidence of transfers for a subsample of respondents with deceased parents. Note that the table does not report correlations between amounts. Correlations are not very high over all, but some conclusion may be drawn. There is a positive correlation between gifts and inheritances from parents. This suggests that parents use bequests and *inter vivos* gifts as complements. Inheritances from parents and from other relatives are also positively correlated.

It could also be interesting to see the correlations for those who have at least one parent still alive. To get as reliable figures as possible we look at the correlation for the subsample of individuals who have stated that they have at least one living parent and who have answered this question in 1996 or in 1998. Table 7 presents the correlations.

There is a relatively strong correlation between gifts from parents and gifts from relatives. We also notice a positive correlation between gifts from parents and loans from to relatives. This suggests that *inter vivos* transfers

Table 7: Incidence of transfers, correlations between different types, at least one parent alive

	loan from family	gift from relatives	inheritance, relatives
gift from parents	0.19	0.19	0.01
loan from family		0.16	0.02
gift from relatives			-0.01

Note. 379 observations

often consist of both gifts and loans, possibly because of tax planning.

Do these simple correlations continue to hold in a multivariate framework? This is the topic of the empirical analysis.

4 Evidence: Transfers from parents

The section reports the results from the econometric analysis. We start by discussing the *inter vivos* gifts and then continue with the inheritances. Two types of models have been estimated. We estimate probit models for whether the respondent has received a transfer. We also estimate selection models for the amounts received using maximum likelihood estimation. In both probit and selection models we have estimated reduced form regressions, as well as structural form ones. In the reduced form analysis we use only exogenous variables as regressors, while we use structural form analysis to study the impact of one kind of transfer on another. We instrument all endogenous variables (the various transfers) and use these instruments as regressors in the structural models.

4.1 *Inter vivos* gifts

As mentioned in Section 3 there are problems with data on gifts. We have reasons to suspect that people underreport their received gifts. Less than 14%, or 391 out of 2,872, have stated that they have received gifts from their parents. However, we use what we have, and see where it brings us.

Table 8 reports estimation of models for the probability of having received a parental *inter vivos* gift. We do not have any information on parental income, so we use mother's and father's education and father's occupation as proxies. Compared with having a mother with no or low education and a father who worked as a blue collar worker and had no or low

education we see that only if the mother had high school education it seems to matter for the probability of having received a parental *inter vivos* gift. Own university education also increases the probability of having received a gift, which is in line with theory.

However, from Table 9 it is clear that a university degree also increases the amount received, conditional on having received a gift. Also in line with theory, a higher income decreases the likelihood of having received financial assistance from parents. Those who have borrowed money from family members are more likely to also having received gifts, indicating that parents who want to transfer resources to their children do this both by gifts and by loans. One possible explanation could be that gifts are due to taxation, and that larger amounts are then preferably (at least from a tax avoiding point of view) transferred as loans. This view is also supported by the fact that those who have borrowed money also are those who have received the largest gifts. Not having lived with both parents during childhood does not seem to affect the probability, and compared to having been brought up in a rural area of Sweden, only the variable *abroad* has an effect on the likelihood.[14] The reason that women are more likely to receive *inter vivos* gifts could be that they have lower income, as the significance vanishes when controlling for income. Both the probability and the amount are positively affected if the respondent is married. In the structural regression for the amount received, we see that the amounts of transfers from other relatives have impact on the amounts received from parents. A large inheritance has a positive effect on the amount, while large *inter vivos* gifts tend to reduce the amount received from parents. The latter effect is consistent with the altruistic model, where the parent equalizes marginal utilities between herself and the child.

4.2 Inheritances

Table 10 shows marginal effects from a probit of the likelihood of having inherited parents conditional on both parents being deceased. The results are similar to those concerning parental gifts, such as own education; the higher education, the higher is the probability of having inherited. In both Table 10 and Table 11 we see evidence that parents use *inter vivos* gifts and bequests as substitutes. Those who have received parental *inter vivos* gifts are less likely to inherit, and those ho have inherited parents have inherited smaller amounts if they have also received parental *inter vivos* gifts. Respondents who have inherited other relatives are more likely to having inherited their parents, as well, which could indicate some dynastic effect where some dynasties are more prone to bequeathing than are others.

Having a university degree also has a positive effect on the amount inherited, according to Table 11. Here, we cannot interpret the effects from

[14]However, there are only very few respondents who where brought up abroad, so we should not emphasize this result too much.

Table 8: Has received gifts from parents, marginal effects.

	reduced form		structural form
	(1)	(2)	(3)
father high school	0.032	0.045	-0.017
father university	0.045**	0.046*	0.036
mother high school	0.051*	0.072**	0.084**
mother university	-0.022	-0.035	-0.065
father own business	0.020	0.017	0.025
high school	0.007	0.002	0.009
university	0.056***	0.048**	0.058**
income, logarithm		-0.005**	
spouse's income, logarithm		0.0003	
inheritance from parents, parents deceased			-0.002
loan from family, parents alive			0.13***
gift from relatives			0.71
inheritance from relatives			-0.34
not both parents	-0.031*	-0.037*	-0.038*
abroad	-0.084***	-0.102***	-0.077**
woman	0.022**	0.019	-0.015
age	0.012***	0.018***	0.012**
age^2/100	-0.017***	-0.024***	-0.014***
married	0.056***	0.050**	0.039*
cohabiting	0.015	-0.007	-0.008
log likelihood	-992	-739	-508
χ^2	188.8	167.5	139.9
significance level	0.000	0.000	0.000
pseudo R^2	0.09	0.10	0.12
number of observations	2,754	2,027	1,605

Notes. The variable "inheritance from parents" is instrumented using the estimations reported in Table 10, column 1.
The variable "gift from relatives" is instrumented using the estimations reported in Table 12, column 1.
The variable "inheritance from relatives" is instrumented using the estimations reported in Table 14, column 1.
*** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level

Table 9: Gift amounts from parents, selection models.

	reduced form		structural form
	(1)	(2)	(3)
father high school	-0.25	-0.07	2.29
father university	0.51*	0.94***	2.18*
mother high school	0.61*	0.83**	
mother university	-0.34	-0.63	0.046
father own business	0.07	-0.06	0.14
high school	0.05	-0.06	3.77**
university	0.84***	0.78**	8.48*
income, logarithm		-0.01	
spouse's income, logarithm		-0.01	
inheritance from parents, parents deceased			-4.29*
gift from relatives			18.20
inheritance from relatives			11.62
inherited amount from parents, parents deceased			-0.84
gift amount from relatives			-5.04**
inherited amount from relatives			3.28**
loan from family, parents alive			1.17***
not both parents	-0.30	-0.64	0.14
abroad	-1.73***	-2.01**	-1.43
woman	0.07	0.06	1.05
married	0.73**	0.91**	4.67***
cohabiting	0.17	0.37	-0.90
age	0.057	0.17**	-0.25
age squared/100	-0.065	-0.21	0.11
constant	4.60***	2.37	2.42
n of observations	370	285	187
log likelihood	-1,634	-1,227	-819
ρ	0.88	0.93	0.97
χ^2	41.2	48.2	38.8
significance level	0.000	0.000	0.007

Notes. Estimated by maximum likelihood.
The dependent variable is ln(1+received amount)
The variable "inheritance from parents" is instrumented using
the estimations reported in Table 10, column 1.
The variable "gift from relatives" is instrumented using
the estimations reported in Table 12, column 1.
The variable "inheritance from relatives" is instrumented using
the estimations reported in Table 14, column 1.
The variable "inherited amount from parents" is instrumented using
the estimations reported in Table 11, column 1.
The variable "gift amount from relatives" is instrumented using
the estimation reported in Table 13, column 1.
The variable "inherited amount from relatives" is instrumented using
the estimation reported in Table 15, column 1.
*** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level

Table 10: Has inherited parents, parents deceased, marginal effects, probit models

	reduced form		structural form	
	(1)	(2)	(3)	(4)
father high school	0.11	0.25**	0.081	0.22
father university	-0.18**	-0.15	-0.18*	-0.16
mother high school	-0.11	-0.13	-0.10	-0.16
mother university	0.18	-0.08	-0.16	-0.18
father own business	0.004	0.018	-0.018	0.033
high school	0.09**	0.13***	0.09*	0.15**
university	0.18***	0.16***	0.10	0.67
income, logarithm		0.006		0.011
spouse's income, logarithm		0.013***		0.017***
gift from parents			-2.17**	-0.63
gift from relatives			-2.67	-1.75
inheritance from relatives			3.90**	4.09***
not both parents	-0.089	-0.11*	-0.025	-0.10
abroad	-0.19***	-0.18***		
woman	0.057*	0.081**	0.033	0.064
age	0.054***	0.051**	0.03	0.05*
age^2/100	-0.05***	-0.04**	-0.03*	-0.05**
married	0.092**	0.013	0.17***	0.075
cohabiting	0.012	-0.10	0.11	-0.078
log likelihood	-306	-190	-293	-181
χ^2	59.6	56.22	54.2	55.69
significance level	0.000	0.000	0.000	0.000
pseudo R^2	0.09	0.13	0.08	0.13
number of observations	629	424	581	395

Notes. The variable "gift from parents" is instrumented using the estimations reported in Table 8, column 1 and column 2. The variable "gift from relatives" is instrumented using the estimations reported in Table 12, column 1 and column 2. The variable "inheritance from relatives" is instrumented using the estimations reported in Table 14, column 1 and column.
*** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level

marital status because we have omitted 158 married or cohabiting respondents, where we could not assign the bequest to any of the spouses.

5 Evidence: Transfers from relatives

Most previous studies on bequests have either dealt with total bequests or only parental bequests. We will, however, explore also transfers from relatives and others. We expect other mechanisms behind these transfers than behind parental ones. Relatives and others probably do not have the same opportunity as parents of transferring resources in terms of human capital, but they are restricted to physical capital if they want to transfer resources. The results in Tables12 are therefore in line with our expectations, that own education does not matter significantly for the probability of having received *inter vivos* gifts from others than parents.

Looking at gifts and inheritances from others than parents, we do not find very significant results, which is not surprising.[15] We do not know exactly who has made the transfer, and we only have information on respondents, themselves and, to some extent their parents. We do not know anything about their other relatives, who are the donors. However, one significantly different result from those of parental transfers is that having a mother with a university degree has a positive impact on the likelihood of having received both *inter vivos* gifts and inheritances from a relative. A possible explanation to this could be the positive correlation between own wealth and investments in children's human capital. A couple of generations ago university educated women were rare, and those possibly indicated prosperous parents who, in turn, give and bequeath to children and to grand children. We see that having dead parents dramatically increases the probability of having inherited others (Table 14). This could indicate that a great part of these inheritances are actually intended for parents, who are now dead. We also see that there is a substitution similar to that for parents. Having received *inter vivos* gifts from relatives decreases the amount inherited, whereas the amount received has a positive impact on the amount inherited.

We could also see another explanation for some of the inheritances from relatives. Some of them are probably bequests from e.g. grandparents, which an altruistic (or tax avoiding) parent has handed over to the child. In this case the inheritance could be regarded as a parental gift. To hand over all of part of the inheritance is advantageous for the parent compared with other *inter vivos* gifts. Gifts exceeding SEK 10,000 (in 1998) are due to gift taxation, while the tax exempt amount for an inheritance handed over is SEK 70,000. Unfortunately, our data does not inform us about whether inheritances from relatives actually are handed over from parents, but we

[15] These regressions are run on a subsample of respondents brought up in Sweden. This is because no one brought up abroad has received such inheritance.

Table 11: Amounts inherited from parents, parents deceased, selection models

	structural form
father high school	-1.88
father university	4.02
mother high school	1.81
mother university	-8.94*
father own business	2.22
high school	0.06
university	
gift from parents	-21.85***
gift from relatives	52.58
inheritance from relatives	25.81
gift amount from parents	-2.42
gift amount from relatives	0.52
inherited amount from relatives	-2.01
not both parents	-2.25
woman	-1.38
married	1.27
cohabiting	0.44
constant	42.89
log likelihood	-499
ρ	0.89
χ^2	30.1
significance level	0.018
number of observations	140

Notes. Estimated by maximum likelihood.
The dependent variable is ln(1+inherited amount)
The variable "gift from parents" is instrumented using
the estimation reported in Table 10, column 1.
The variable "gift from relatives" is instrumented using
the estimation reported in Table 12, column 1.
The variable "inheritance from relatives" is instrumented using
the estimation reported in Table 14, column 1.
The variable "gift amount from parents" is instrumented using
the estimation reported in Table 9, column 1.
The variable "gift amount from relatives" is instrumented using
the estimation reported in Table 13, column 1.
The variable "inherited amount from relatives" is instrumented using
the estimation reported in Table 15, column 1.
*** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level

Table 12: Has received gifts from relatives and others, marginal effects.

	reduced form		structural form	
	(1)	(2)	(3)	(4)
father high school	0.034*	0.041*	0.043	0.078
father university	0.013	0.015	0.025	0.014
mother high school	-0.003	-0.009	0.005	0.012
mother university	0.053***	0.081***	0.11**	0.49*
father own business	0.002	0.009	0.003	0.008
high school	0.002	-0.001	-0.001	-0.016
university	0.024*	0.023	0.045*	0.046*
income, logarithm		-0.000		-0.001
spouse's income, logarithm		0.001		0.002
gift from parents			-0.25	-0.11
inheritance from parents, parents deceased			0.048	0.046
loan from family			0.008	0.012
inheritance from relatives			-0.25	-0.82
not both parents	0.007	0.008	-0.020	-0.024
woman	0.018**	0.020*	0.009	0.016
age	-0.003*	-0.003	0.001	-0.001
age^2/100	0.001	0.001	-0.004	0.000
married	0.013	-0.003	0.020	0.015
cohabiting	-0.022*	-0.028*	-0.023*	-0.039**
abroad	-0.042**	-0.048**	-0.040**	-0.048*
log likelihood	-610	-471	-276	-222
χ^2	98.1	71.7	42.4	35.2
significance level	0.000	0.000	0.001	0.019
pseudo R^2	0.074	0.071	0.072	0.074
number of observations	2,754	2,027	1,605	1,224

Notes. The variable "gift from parents" is instrumented using the estimations reported in Table 8, column 1 and column 2. The variable "inheritance from parents" is instrumented using the estimations reported in Table 10, column 1 and column 2. The variable "inheritance from relatives" is instrumented using the estimations reported in Table 14, column 1 and column 2.
*** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level.

Table 13: Gift amounts from relatives and others, selection models

	reduced form	
	(1)	(2)
father high school	0.97**	1.07**
father university	1.12***	1.15**
mother high school	0.30	0.095
mother university	0.87**	1.59***
father own business	-0.15	-0.11
high school	0.87***	0.63*
university	1.14***	1.03***
income, logarithm		-0.020
spouse's income, logarithm		0.062*
not both parents	-0.003	-0.29
woman	0.27	0.38
married	0.21	-0.31
cohabiting	-0.70*	-1.60***
abroad	-2.39***	-3.32***
constant	3.91***	3.26***
log likelihood	-888	-685
ρ	0.94	0.97
χ^2	53.5	48.05
significance level	0.000	0.000
number of observations	178	139

Notes. Estimated by maximum likelihood.
The dependent variable is ln(1+received amount)
*** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level.

create a subsample where this is likely. This subsample consists of those whose both parents are alive, and the amounts are presented in column 3 in Table 15. The results show that gift amount from parents has a negative impact on inherited amounts from others than parents when both parents are alive. This indicates that parents use handed aver inheritances as a substitute for other *inter vivos* gifts. These two channels are then complemented by loans. That gifts from relatives has a negative impact on the amount is also consistent with this kind of transfer and wealth smoothing. If the respondent has received gifts from e.g. grandparents the parent allocates less resources to her.

Table 14: Has inherited relatives and others, marginal effects, probit models.

	reduced form		structural form
	(1)	(2)	(3)
both parents dead	0.11***	0.105***	0.025
father dead	0.055***	0.059***	0.055**
mother dead	0.062**	0.069*	0.064*
father high school	0.030	0.029	0.076
father university	0.012	0.008	0.038
mother high school	0.008	0.017	0.041
mother university	0.076**	0.086**	0.15*
father own business	0.018	0.009	0.010
high school	0.008	-0.001	-0.010
university	0.043**	0.037*	0.050*
income, logarithm		-0.001	-0.002
spouse's income, logarithm		-0.001	-0.001
gift from parents			-0.18
inheritance from parents, parents deceased			0.20**
gift from relatives			-0.50
not both parents	-0.013	-0.010	-0.006
woman	0.018*	0.010	0.024
married	-0.006	-0.008	-0.003
cohabiting	-0.025	-0.019	-0.032
age	-0.002	-0.003	-0.004
age^2/100	0.001	0.002	0.002
log likelihood	-628	-463	-458
χ^2	53.9	41.8	51.41
significance level	0.000	0.001	0.000
pseudo R^2	0.041	0.043	0.053
number of observations	2,296	1,671	1,671

Notes. The variable "gift from parents" is instrumented using the estimations reported in Table 8, column 1.
The variable "inheritance from parents" is instrumented using the estimations reported in Table 10, column 1.
Notes. The variable "gift from relatives" is instrumented using the estimations reported in Table 12, column 1.
Notes. *** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level

Table 15: Amounts inherited from relatives and others, selection models

	(1)	(2)	both parents alive (3)
both parents dead	0.70*	-0.77	
father dead	0.25	-0.016	
mother dead	0.35	0.08	
father high school	1.01**	-0.55	
father university	1.15**	-1.70	2.05*
mother high school	0.07	0.19	1.11
mother university	0.29	0.50	1.69
father own business	-0.23	-0.18	-1.22**
high school	-0.16	-1.73**	-3.47***
university	0.16	-1.87*	-1.20**
income, logarithm	-0.04	-0.06	
spouse's income, logarithm	-0.02	-0.11*	
gift from parents		-0.20	-1.58
inheritance from parents, parents deceased		3.08	
gift from relatives		-22.30***	-19.80***
gift amount from parents	-2.42	0.38	-2.50**
gift amount from relatives	0.52	1.85**	0.74*
loan from parents, parents alive			1.65*
not both parents	-1.08**	0.99	-1.09
woman	-0.20	-0.43	0.042
married	-0.32	-0.42	0.16
cohabiting	-0.58	1.26	0.42
constant	7.15***	2.28	29.53***
log likelihood	-688	-678	-248
ρ	0.93	0.86	0.70
χ^2	27.0	42.9	33.0
significance level	0.04	0.003	0.005
number of observations	141	141	55

Notes. Estimated by maximum likelihood.
The dependent variable is ln(1+inherited amount)
*** significant on the 1 percent level,
** significant on the 5 percent level,
* significant on the 10 percent level

6 Conclusion

In this paper we have studied intergenerational transfers in a somewhat new way. Thanks to our unique data, the 1998 wave of HUS, we have been able to distinguish between transfers from parents and from others, and between *inter vivos* gifts and inheritances, and to study differences and similarities.

Parental transfers are the most common, and the most sizable. According to the theoretical model, which is in the spirit of Becker and Tomes (1986), altruistic parents transfer resources to their children in terms of human and/or physical capital. If there are diminishing marginal returns to human capital investments, but constant returns to investments in physical capital, we would expect parents to invest in human capital up to a certain point and then turn to transfers of physical capital. However, parents with less resources will not transfer any physical capital, and also tend to invest less in human capital than do more prosperous parents. The empirical analysis supports this result, because a high level of human capital has a positive effect on the probability of having receive parental transfers. Those who transfer physical resources to their children have often first given the children good opportunities to develop their human capital. We also find some weak evidence that income affects the probability of receiving parental *inter vivos* gifts negatively. Parents use *inter vivos* gifts and bequests as substitutes. Most respondents have only inherited their parents and have not received any *inter vivos* gifts. This could be explained with the strategic theory suggested by (Cremer and Pestieau, 1996), according to which the parents can influence the children's behavior by making the transfers as late as possible. It could also be the case that parents are liquidity constrained. Unfortunately, we do not have information about what kind of assets has been transferred, but a large part of household wealth is hold in housing. Then parents do not have liquidity enough to make transfers before they are wiling to leave their house, which is often in end of the life cycle. This is also supported by the fact that the most sizable *inter vivos* gifts are made early in the child's life cycle. Prosperous parents can afford to make transfers early, when their children need the resources the most, and do not have to wait until their bounded assets are released.

When it comes to inheritances from others than parents we conclude that some of these probably are disguised parental *inter vivos* gifts. Parents can hand over some or all of the inheritance, and this transfer is more favorable from a taxation point of view than other *inter vivos* gifts. When both parents are alive the size of the inheritances from other relatives is negatively influenced by parental *inter vivos* gifts, indicating that parents may hand over inheritances as a substitute to other transfers.

The issue of transfers from parents to their children is thus very complex, but in this paper we have made an attempt to get a somewhat better understanding of what drives these transfers, and what makes them different

from other transfers.

A Appendix. Sample statistics

Table 16 reports descriptive statistics for the variables used in the estimations. The variable "gift from parents" is a dummy variable which takes the value 1 if the respondent has reported a parental gift, 0 otherwise. Also "inheritance from parents", "loan from family", "gift from relatives" and "inheritance from relatives" are constructed in the same way. For the inheritance variables the table reports fewer observations due to the fact that we have omitted 155 observations where we could not assign the inheritance to any specific household member. Therefore the figures that indicate the share of respondents who have inherited are too low. The variables concerning education are dummy variables, and the comparison is with secondary schooling or lower. The variable "father own business" is a dummy variable, which takes value 1 if the father has run his own business. "Not both parents" takes value 1 if the respondent has not lived together with both parents during the major part of childhood. If "Abroad" takes the value 1 it indicates that the respondent spent most of her childhood abroad. "Married" and "cohabiting" indicate the respondents marital status 1998. 70% of the respondents have both parents still alive. The three last variables in Table 16 are dummy variables indicating if both or any of the parents are dead.

Table 17 reports the means and standard deviations for the first, second, and third inheritance. The amounts are deflated to the 1998 values using the consumer price index and a 0% real interest rate. As is clear from the table we lose some observations compared to Table 3. We have also calculated summary statistics for a subsample of respondents whose both parents are deceased. The data set includes individuals who have been part of a panel for longer or shorter time. Unfortunately, they are only asked whether their parents are deceased when they enter the panel. Suppose that someone in 1984 stated that his parents were alive and then inherited a parent in, say 1991. We could of assume that at least one parent is deceased in 1998. The problem is that we cannot make any qualified guesses for those who have not received any inheritances. Hence, we only include those who have actually reported that both their parents are dead. This leaves us with a subsample of 629 individuals. Of these, 199, or 32%, have received at least one inheritance. And 142, or 23%, of them have inherited a parent.[16]

Consecutive inheritances are smaller than the first in the full sample. But in the subsample of people with deceased parents the second inheritance is

[16]These figures are low because we have excluded a number of people with positive inheritances. However, in the original sample, which overstates the number of inheritances, no more than 30% with both parents deceased have inherited a parent.

Table 16: Descriptive statistics.

	n of obs	mean	s.d.
gift from parents	2,872	0.14	
gift amount from parents, unconditional	2,872	9,800	122,400
gift amount from parents, conditional	391	71,900	325,500
inheritance from parents	2,557	0.14	
inherited amount from parents, unconditional	2,557	34,300	699,400
inherited amount from parents, conditional	348	252,300	1,883,600
loan from family, parents alive	1,723	0.037	0.19
loan from family, parents deceased	1,723	0.004	0.06
gift from relatives	2,872	0.07	
gift amount from relatives, unconditional	2,872	2,900	81,700
gift amount from relatives, conditional	189	43,400	316,500
inheritance from relatives	2,557	0.08	
inherited amount from relatives, unconditional	2,557	7,500	63,300
inherited amount from relatives, conditional	201	94,800	207,300
father high school	2,754	0.05	
father university	2,754	0.10	
mother high school	2,754	0.05	
mother university	2,754	0.06	
father own business	2,754	0.32	
high school	2,872	0.42	
university	2,872	0.27	
income	2,455	166,751	124,020
spouse's income, logarithm	2,116	117,926	129,255
not both parents	2,754	0.10	
abroad	2,754	0.06	
woman	2,872	0.50	
married	2,872	0.70	
cohabiting	2,872	0.14	
age	2,872	48.8	15.4
both parents dead	2,872	0.26	
father dead	2,872	0.20	
mother dead	2,872	0.05	

Table 17: Inherited amounts, 1998 SEK thousands.

	all		*parents deceased*	
	n of obs	mean	n of obs	mean
first inheritance	480	192	170	136
		(1,603)		(244)
second inheritance	147	120	72	175
		(331)		(450)
third inheritance	37	76	20	76
		(104)		(113)
total	490	230	173	215
		(1,600)		(421)

Note. Standard deviations within parentheses.

actually larger than the first. The explanation for this could be that the first inheritance is received when the first parent dies. This inheritance may be rather small if the surviving parent, for instance, keeps the house. After 1988 Swedish law stipulates that the surviving spouse inherits the whole estate. Common children do not inherit until both parents are deceased. The large inheritances are received when the second parent dies.

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