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DYNAMIC ASPECTS OF FAMILY TRANSFERS

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ABSTRACT

Each year parents transfer a great deal of money to their adult children. While intuition might suggest that these transfers are altruistic and made out of concern for the well-being of the children, empirical tests of the model have consistently yielded negative results. However, an important limitation in these sorts of studies and of our understanding of transfers in general has stemmed our inability to observe transfers over time. Estimates of patterns in a single cross section necessarily miss important aspects of behavior. In this paper I expand on the static altruistic model and posit a dynamic model in which parents use current observations on the incomes of their children to update their expectations regarding future incomes and desired future transfers. I then draw on data spanning a 17 year period to examine the dynamic aspects of transfer behavior. I find substantial change across periods in recipiency, large differences across children within the family, and a strong negative correlation between inter vivos transfers and the transitory incomes of the recipients. This evidence suggests that dynamic models can provide insights into transfer behavior that are impossible to obtain in a static context.

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1 Introduction

Intergenerational transfers between family members are an important economic phenomenon, particularly those transfers from parents to children. Gale and Scholz (1994) estimate yearly flows between parents and their non-coresident children of $65 billion in 2010 dollars. Such transfers are likely to have a substantial impact on the well-being of both donors and recipients and will have consequences for the distribution of wealth. As large as these numbers are, they are only part of the story as even the knowledge that funds *could* be available should the need arise, is likely to alter behavior. Finally, familial transfers may interact with public transfers, and in doing so could alter the effectiveness and eventual beneficiaries of government transfer programs.

The importance of the effects in any of these dimensions depends crucially on the motivation behind the private transfers. The two most prominent models, altruism and exchange, make very different predictions about the redistributional aspects of private transfers. Consider the case of potential transfers from a parent to a child. The altruism model predicts a negative relationship between the child's income and both the probability and amount of a transfer; a result which means that assistance from public programs can replace or crowd-out familial assistance and that transfers can reduce income inequalities within families. In contrast, the exchange model is consistent with either a positive or negative relationship between the child's income and the magnitude of a transfer. (See Cox 1987,for a clear description of the two models.) Unfortunately, despite the potential importance of understanding familial behaviors, a consensus has not yet been reached on the most appropriate model of behavior as none of the hypothesized models appears to be consistent with observed patterns of giving. In fact, the empirical evidence has, at times, been inconsistent with any of the standard models.

This difficulty likely stems, at least in part, from an inherent mismatch between our theory and data. The models referred to above are written in a static context with the effects of interest being changes in lifetime transfers in response to changes in permanent income. However, the data used to test these models come from a dynamic world: Researchers observe current rather than permanent income, and single period rather than lifetime transfers. As I illustrate in this paper, this difference in measurement is likely to lead to incorrect conclusions in tests of the model's validity.

Beyond attempts to discern the motivation for giving, the cross-sectional nature of the data

has also hampered our understanding of the empirical patterns of transfer behavior. Capturing transfers at a single point in time makes it difficult to understand how parents respond to various events in the child's life or to understand the cumulative importance of transfers when aggregated over an extended period of time. Even simple questions such as the year-to-year variation in receipt have remained unanswered.

In this paper I address these issues by providing some of the first empirical evidence of transfers over a prolonged time period and examining these transfers in light of a richer altruistic model. I first consider a formal model which expands on the classic altruism model to incorporate dynamic aspects of behavior. It hypothesizes that parental expectations regarding a child's income evolve over time and that transfers respond to these evolving expectations. This model serves as a straightforward example of the importance of considering dynamic aspects of behavior.

In light of this illustration that dynamics matter on a theoretical level, I draw on data from the Health and Retirement Study (HRS) covering the time period 1992-2008, to assess the time varying nature of transfers and to compare aggregate patterns of giving with cross-sectional results. Furthermore, by examining multiple observations within families and over time, I am able to control for unobserved family and child effects, such as parental generosity and / or a child's ability or industriousness, to obtain unbiased measures of the relationships between income and transfer receipt.

I find considerable variation in transfers over time. In each year approximately 14 percent of children receive a transfer from their parents, yet only 6 percent of the sample receives a transfer in any two consecutive survey years. Furthermore, while 46 percent of children in my sample receive a transfer in at least one period, less than 1 percent receive a transfer in each of the nine waves, and the period-to-period changes in receipt are strongly related to changes in a child's income. These dynamic aspects of behavior have frequently been ignored because of data limitations,[1] yet from the analyses presented here they appear to be an important part of the story. Analyses based on a single year of data thus miss important aspects of behavior. Transfers made in conjunction with specific events in the child's life appear to be important and suggest that parents frequently respond to negative shock to the childs income. Furthermore, differences in the amounts received by siblings

[1]Dunn (1997), and Rosenzweig and Wolpin (1994) are exceptions. These papers both use multiple waves of the NLS surveys. However, information is not available on all siblings of the (potential) recipients, so a complete understanding of the allocation within families is not possible.

in any one year do not appear to "average out" over time. Finally, in examining transfer behavior net of unobserved differences across children, I find that the effect of a child's current income on transfers is large and significantly different from zero, but is approximately one-third smaller than its effect in specifications that do not control for unobservable differences. These results indicate a strong negative correlation between transfers and the transitory income of potential recipients as well as a negative relationship between transfers and unobserved characteristics of the child such as ability or permanent income. This latter insight demonstrates the necessity of adequate controls for permanent income and other fixed attributes our models.

The remainder of the paper is organized as follows: In section 2 I briefly outline the standard altruism model and discuss the tests used to distinguish this model from an exchange regime. I then expand the static model to include two periods and note the conditions under which the predicted results differ from the static case. Section 3 describes the data I use in the empirical work and provides interesting annual and year-over-year patterns. Section 4 discusses the estimated effects of current income on transfers in the context of regression models. A final section concludes and summarizes the results.

2 Background and Theory

I divide the theoretical discussion into two subsections. The first presents the standard altruism model and the second extends this model to two periods. Extensions beyond two periods are straightforward. The discussion of the static model is kept brief as there are excellent expositions elsewhere (e.g. Cox 1987).

2.1 The static altruism model

In the standard altruism model parents care about the well-being of their children; they receive utility from their own consumption and from the utility of their children. Following the specification used in Cox (1987), the utility function of a parent is written as $U_p = U_p(c_p, V(c_k))$ where c_p and c_k are the consumption of the parent and child, respectively. The consumption of the child is determined by his own income y_k and transfers from the parent T. Thus, $c_k = y_k + T$. Because this is a one-period model there is no saving.

The comparative statics of the altruism model yield two testable predictions. First, the change

in transfers for a change in a child's income is negative ($\frac{\partial T}{\partial y_k} < 0$); as the child's income increases, the marginal utility of an additional dollar of consumption decreases, and the parent transfers less. This result implies that in families with more than one child, parents will make greater transfers to lower income children, in effect compensating the lower income children for their lack of resources.

The second testable implication is that if transfers are positive, an increase of one dollar in the child's income along with a decrease of one dollar in the parent's income, will result in a decrease of one dollar in transfers to the child. That is, $\frac{\partial T}{\partial y_k} - \frac{\partial T}{\partial w_p} = -1$ where w_p is the income of the parent.

Given these straightforward predictions, empirical tests of the model have centered on the estimates of $\frac{\partial T}{\partial y_k}$ and $\frac{\partial T}{\partial w_p}$. While early work found a *positive* relationship between a child's income and the amount of a transfer (Cox, 1987; Cox and Rank, 1992), a contradiction of the negative relationship predicted by the altruism model, more recent efforts with higher quality data have found a strong negative relationship (e.g. Cox and Jappelli 1990, Dunn 1997, McGarry and Schoeni, 1995, 1997), a result consistent with the altruism model, but also with alternative models.[2] Although the sign of $\frac{\partial T}{\partial y_k}$ found by these studies is consistent with the altruism model, the magnitudes of $\frac{\partial T}{\partial y_k}$ and $\frac{\partial T}{\partial w_p}$ (where estimated) fail to satisfy the derivative restriction, with estimates of $\frac{\partial T}{\partial y_k} - \frac{\partial T}{\partial w_p}$ that are closer to 0 than to -1.

2.2 Static versus dynamic outcomes

The model outlined above is presented in a static framework. In the context of a single period model, parents know the lifetime earnings of their children, and the lifetime consumption of children is calculated directly as the sum of earnings and transfers. Parents make greater transfers to children with lower lifetime incomes and the timing of earnings and transfers is not an issue. However, in a more representative multiperiod framework, with an uncertain future, the timing of transfers becomes an important matter.

As highlighted by Altonji, et al. (1997), absent additional constraints, if the child's permanent income is uncertain a parent will delay transfers in order to obtain additional information and

[2]The most frequently cited alternative to the altruism model is an exchange model wherein observed transfers represent payment for services provided by the child. In the exchange model parents care about their own utility and the services (s) provided by the child. Formally, $U_p = U(c_p, s)$. In contrast to the predictions of an altruism model, in an exchange regime the sign of the relationship between a child's income and the magnitude of a transfer is indeterminate. As a child's income increases, the price of his time increases and the quantity of time purchased therefore decreases. However, the net amount spent by the parent to purchase services (price×quantity) can either increase or decrease depending on the elasticities of supply and demand for services.

more efficiently allocate resources. Furthermore, parents who are uncertain of their own date of death or of their future needs will be reluctant to part with resources they themselves might need some day and prefer to postpone transfers (Davies, 1981). Acting against the desire to postpone transfers is the possibility that children are unlikely to be able to borrow against future transfers and therefore unable to smooth consumption optimally across time. Even children with high lifetime incomes may be the recipients of inter vivos transfers if they are temporarily liquidity constrained and unable to attain the level of consumption predicted by their permanent incomes (Cox, 1990). Thus one would expect a negative relationship between transfers and current income and a positive relationship between transfers and indicators of liquidity constraints. However, whereas the derivative restriction holds with respect to changes in *permanent* income in a static model, it is not clear that the same relationship must exist with respect to *current* income in this dynamic context, even if children are liquidity constrained.

To illustrate the relationship formally consider a simplified version of the classic two period model in Altonji et al. (1997).[3] Parents receive utility from their own consumption in each period c_{p_1} and c_{p_2} and from the utility of their children, $V(c_{k_1})$, and $V(c_{k_2})$ where c_{k_t} denotes the child's consumption level in period t. Ignoring interest rates and the time rate of discount, let the utility function of the parent be

$$U_p = U(c_{p_1}) + \eta\, V(c_{k_1}) + U(c_{p_2}) + \eta\, V(c_{k_2})$$

where U and V are concave functions and the child's utility is weighted by η. Following the previous literature, I assume that the parent has income w_p in period 1 and no second period income. She saves A_1 in period 1 to finance period 2 consumption and transfers. The child has income y_{k_t} in each period t, where $t = 1, 2$. Here I focus on the case in which children are liquidity constrained in period 1 and cannot borrow across periods:[4] their consumption in each period is therefore the sum of their income, y_{k_t} and received transfers, T_t. The budget constraints are therefore written as

$$\begin{aligned} c_{p_1} &= w_p - T_1 - A_1 \\ c_{k_1} &= y_{k_1} + T_1 \end{aligned}$$

[3] This discussion and the notation used here draws directly on their paper.

[4] As demonstrated by Altonji et al. (1997) if a child is not liquidity constrained the parent has no incentive to make transfers in the first period. The more interesting case is therefore the one in which the child does face these liquidity constraints.

$$
\begin{aligned}
c_{p_2} &= A_1 - T_2 \\
c_{k_2} &= y_{k_2} + T_2.
\end{aligned}
$$

In the first period the parent does not know her child's period 2 income, but does know its distribution, conditional on information I available in period 1, $f(y_{k_2}|I)$. The parent will maximize her utility using the expected value of second-period utility,

$$U_p = U(c_{p_1}) + \eta\, V(c_{k_1}) + \int [\, U(c_{p_2}) + \eta\, V(c_{k_2})\,]\, f(y_{k_2}|I)\, dy_{k_2}.$$

In the first period the parent observes y_{k_1} and w_p and chooses T_1 and c_{p_1}. In period 2 the parent then observes y_{k_2} and divides remaining resources A_1 between T_2 and c_{p_2}.

The solution to this dynamic programming model can be obtained by first solving for the optimal allocation in period 2 as a function of A_1 and y_{k_2}. That is, the parent maximizes the function

$$U_2(A_1 - T_2) + \eta V_2(y_{k_2} + T_2)$$

with respect to T_2, yielding an optimal value for T_2 (and thus c_{p_2}) as a function of A_1 and y_{k_2},

$$
\begin{aligned}
T_2^* &= T_2(A_1, y_{k_2}) \\
c_{p_2}^* &= A_1 - T_2.
\end{aligned}
$$

Using this result, the first period maximization problem is then to choose A_1 and T_1 to maximize

$$U(c_{p_1}) + \eta\, V(c_{k_1}) + \int_{y_{k_2}} [\, U(A_1 - T_2(A_1, y_{k_2})) + \eta\, V(y_{k_2} + T_2(A_1, y_{k_2}))\,]\, f(y_{k_2}|I)\, dy_{k_2}$$

subject to

$$
\begin{aligned}
c_{p_1} &= w_p - T_1 - A_1 \\
c_{k_1} &= y_{k_1} + T_1.
\end{aligned}
$$

Note that in the above maximization problem the variables w_p, y_{k_1}, and T_1, apparently always enter in pairs as either $w_p - T_1$ or $y_{k_1} + T_1$. Using this relationship one can demonstrate that the derivative restriction $\frac{\partial T}{\partial y_{k_1}} - \frac{\partial T}{\partial w_p} = -1$ continues to hold provided that I does not change.[5] However,

[5] To understand how this conclusion is reached, consider the first order conditions of the above utility maximization problem. These equations will be functions of $w_p - T_1$ and $y_{k_1} + T_1$. Writing one such equation as $H(w_p - T_1, y_{k_1} + T_1)$, and differentiating first with respect to w_p and then with respect to y_{k_1} yields a system of two equations such that $H_1(1 - \frac{\partial T}{\partial w_p}) + H_2 \frac{\partial T}{\partial w_p} = 0$ and $H_1(-\frac{\partial T}{\partial y_{k_1}}) + H_2(1 + \frac{\partial T}{\partial y_{k_1}}) = 0$, where H_i is the derivative of the function H with respect to the i^{th} argument. These two equations can be combined and the terms rearranged to yield the result that $\frac{\partial T}{\partial y_{k_1}} - \frac{\partial T}{\partial w_p} = -1$.

in a plausible multiperiod framework one could expect $f(y_{k_2}|I)$ to be a function of y_{k_1} (and not $y_{k_1}+T_1$). If the distribution of second period income *does* depend on the childs first period income then the derivative restriction is broken.

The intuition is as follows: When a parent observes her child's income in period one she will reassess the likelihood of potential outcomes in period two based on that information. Suppose the child draws a low value in period one. If this realization causes the parent to revise downward her belief about the distribution of draws in period two, then not only will the parent want to increase transfers in period one in response to the low current income, but she will also expect to increase transfers in period two. The change in first period transfers is therefore likely to be less than it would be if she were responding to changes in first period income alone.

To understand this mechanism in the context of the above model, consider the specific case in which y_{k_1} and y_{k_2} have a bivariate normal distribution with means μ_1 and μ_2, variances σ_1^2 and σ_2^2, and a correlation coefficient ρ. The conditional distribution of y_{k_2} given y_{k_1} has an expected value equal to $\mu_2+\rho\sigma_1\frac{(y_{k_1}-\mu_1)}{\sigma_2}$ and variance $(1-\rho^2)\sigma_2^2$. Thus, if ρ is positive, a low value of y_{k_1} ($y_{k_1}<\mu_1$) will reduce the child's period 1 consumption and increase the marginal utility of a transfer T_1. At the same time, however, a low value of y_{k_1} will shift the distribution of y_{k_2} to the left. This shift will decrease expected second period consumption of the child, increase the marginal utility of a transfer in that period, and thus increase the marginal utility of A_1. To equalize marginal utilities across arguments of the utility function, the parent will reduce c_{p_1} and increase both T_1 and A_1. Because of the change in A_1, the increase in T_1 will be less than if the distribution of y_{k_2} were unaffected.

The proof of this result for the general case is in the appendix. There I show that under reasonable assumptions about the relationship between income in the two periods, the value of $\frac{\partial T}{\partial y_{k_1}}-\frac{\partial T}{\partial w_p}$ lies between zero and negative one, consistent with the results of previous empirical studies. In the specific case of the bivariate normal distribution I show that the distance between $\frac{\partial T}{\partial y_{k_1}}-\frac{\partial T}{\partial w_p}$ and -1 depends directly on the magnitude of the correlation coefficient. If $\rho=0$, so that period 1 income is uninformative about period 2 income, the derivative restriction holds.[6]

Given this result, the strict adding up of coefficients is unlikely to provide a definitive test of

[6] Although derived here with information accruing through the observation on income, it could result from events such as the unexpected loss of a job, changes in marital status, or the completion of additional schooling.

the altruism model. In what follows I explore directly the dynamic aspects of giving, focusing on the responsiveness of transfers to changes in a child's income as well as other dynamic elements in the child's life such as changes in their family situation and employment–events which may lead the parent to update her expectations regarding the needs of the child. I also look for evidence of parental updating behavior by examining the effect of lagged income on transfers, controlling for current income and other attributes of the child. The results suggest that transfers are influenced by a variety of factors and respond significantly to changes in the financial status and needs of the child.

3 Data

The data used in this paper are from the Health and Retirement Study (HRS). The HRS is a panel survey of the older U.S. population that began in 1992 with a sample of individuals born between the years 1931 and 1941 and their partners or spouses. When appropriately weighted the sample is representative of the U.S. population of the target cohort. The initial wave of questioning included 12,652 respondents interviewed in 7,703 families. The second wave followed in 1994 with biennial interviews conducted ever since.

The original HRS sample has been supplemented over time with additional cohorts including both older and younger age groups, making it approximately representative of the population ages 50 and over. For the analysis in this paper, however, I limit my attention to the initial respondents (and their children) in order to have a long panel with repeated observations on transfers from parent to child. For a similar reason I also require that the household remain in the sample for the entire nine waves.[7] Finally, I also delete families in which the parents divorce and there is more than one parent providing information on the child.[8] This focus on intact families allows me to avoid confounding the results of changes in observable factors with changes in behavior resulting from unanticipated changes in the motivation of parents due to the separation. I do keep observations

[7]While this requirement induces some selection bias I control for a large set of observable characteristics of the parents in the regression analyses including income, wealth, and health, and use family fixed effects analysis to study changes net of fixed differences across families. The analyses in this paper have also been repeated with observations from all cohorts and for all children for whom there were at least two waves of data, as well as for some alternative selection mechanisms including those observed from 1998 forward or for 6 or more waves. The results presented here are for a data extract which I believe makes the most sense from both theoretical and intuitive perspectives but the conclusions are no sensitive to the sample selection criteria.

[8]In the case of divorce or separation, the HRS follows both respondents and asks the same questions about their children.

if one spouse dies.

The HRS is uniquely suited to a study of transfer behavior for several reasons. First, individuals in this age group are particular likely to be making inter vivos transfers (Schoeni, 1993). Second, the HRS has specific questions about transfers to each child which likely result in more complete reporting of such transfers than the more general questions about assistance to individuals outside the household that are used in many surveys (McGarry and Schoeni 1995). Finally, there is relatively detailed information on *each* child in the family allowing for a complete within-family analysis.

There are a total of 3,776 families in my sample with 12,835 children. I further restrict this sample to children ages 18 or older in the first wave in order to avoid counting legally required support payments to minor children as transfers, and to children who were not coresiding with the parent at in the first interview because of the difficulty of imputing a value to shared food and housing and differences in the early waves with respect to the measurement of income for coresident children. With these selection criteria I have a sample of 3,383 families with 10,064 children and 90,576 person years of observations.[9]

Cross sectional patterns: The means and standard errors for several of the variables used in the subsequent analyses are presented in table 1. The first pair of columns reports the values for 1992, the first year of data, the second column gives the values for the same children in 2008, the last year, and the final column corresponds to the stacked data for all 90,576 person years of observations.

As one can see from the list of variables included in the table, there is a good deal of information available for the children of the HRS respondents. Respondents are asked to report the family incomes for each of their children, as well as the child's age, sex, whether they own a home, where they live with respect to the parent, their marital status, number of own children, the highest grade completed and whether they are currently enrolled in school. The majority of these variables are measured in every wave of the survey although there are some differences in the set of questions across the years.

Most pertinent to the analysis in this paper is the measurement of income. The family income

[9]I also experimented with including coresident children and conversely, excluding those who lived with a parent at any survey date. Alternative definitions of the sample lead to similar results.

of children is measured categorically in the HRS.[10] The categories have evolved somewhat over time, changing slightly to capture better the range in the underlying distribution. However, the brackets have been constant since 1998 at income of less than $10,000, $10,000 - $35,000, $35,000 - $70,000 and greater than $70,000. I use these income categories to form two measures of income each of which allows for comparisons across waves. First, for each child in each wave, I use a single imputed value calculated as the median income within the given range for individuals in the CPS data.[11] This procedure provides me with a single number that makes examining changes over time and interpreting regression coefficients more straightforward. As a second measure, I take the various income categories and form four relatively consistent categories across waves. For example, I treat $10,000 – $35,000 (used in most waves) and $10,000 – $25,000 (used in the first wave) as being the same category. While I rely primarily on the first method for ease of presentation, all analyses were done using both methods and with the sample limited to observations from the 1998 to 2008 surveys wherein the categories are identical across waves. The conclusions are unchanged.

As is apparent in table 1 when comparing the distribution of observations across income categories in 1992 and 2008, there was a significant increase in the incomes of adult children over time. In 1992, 15 percent of children had incomes below $10,000 while just 3 percent had incomes in this range in 2008. The second two categories differ somewhat between waves but the trend of rising incomes is clear: 35 percent had income between $10,000 and $25,000 in 1992 and a substantially smaller number, just 11 percent, had income in the $10,000 - $35,000 range in 2008 despite it being much wider. Age obviously increased over time, but there were also large increases over time in home ownership, from 50 percent to 69 percent, and a decline in the fraction of children living within 10 miles of the parent, all consistent with the aging of the sample.

The HRS was particularly innovative in asking about familial transfers. It asked respondents to report transfers of $500 or more made to any child since the last survey (or in the past year at the first interview).[12] Despite the maturing of the children, including rising incomes and increasing home ownership, a substantial fraction continue to receive transfers from their parents: 14 percent of children in 1992 and 11 percent in 2008 received a transfer from their parents–a surprisingly

[10] An exception was made in the 1994 and 1996 waves which first asked for a continuous value and then provided the respondent with categorical responses if the respondent could not give an exact value. Also, income for the children in this original cohort was not obtained in 1998 or 2006.

[11] These data were developed in concert with Steven Haider.

[12] I adjusted the amounts in the first year of the survey to control for the difference in the relevant time spans.

large fraction given that these children are nearly 50 years old on average in this final year. The mean amount (after adjusting for inflation) is much larger in 2008 consistent with increases in the resources of parents, or with a worsening of parental health that provides opportunities for exchange-based transfers or estate planning. Although there is a decline in transfer receipt from 1992 to 2008, it is not indicative a trend in the data; at any given interview, approximately 12-15 percent of children are reported to be receiving a transfer.

Transfers over time: Cross-sectional results such as these have provided important information on the ties between families. Transfers are common and fairly large, and appear to be relatively stable across time despite the aging of the sample. In work presented elsewhere (McGarry and Schoeni 1995, 1997; McGarry 1999) we have also seen a strong negative relationship between transfers and the child's income, and a positive relationship with parental resources. Missing from these descriptions (and from most models) is an understanding of how transfers evolve over time; how they change in response to changes in the situation of the parent or child, whether the same children benefit year in and year out, or whether the 12-15 percent recipiency rates seen above include a much larger fraction of children receiving a transfer in at least some years. In the remainder of the paper I explore these issues paying particular attention to the importance of the child's income as it figures prominently in most behavioral models, including that outlined here.

Table 2 begins this analysis by showing that there exists considerable variation in the receipt of transfers from wave to wave. Fifty-five percent of children who received a transfer in one two-year period did not receive anything in the following wave (7.5/13.7), and 53 percent of those who received a transfer in the second wave had not received one in the previous two-year period (7.1/13.4). Just six percent of the children in the sample received a transfer in two consecutive waves. For those who received a transfer in both waves the correlation between the two amounts is 0.14 (not shown), significantly different from zero but perhaps lower than might be expected.

In examining the frequency of transfers across waves (not shown), 46 percent of children received a transfer in at least one wave, 18 percent received a transfer in exactly one wave and only a tiny fraction, less than one percent, received transfers in all waves. Conditional on receiving a positive amount at some point, 62 percent of children received a transfer in more than one wave. This irregularity of transfer receipt comes as a bit of a surprise give anecdotal stories of children who

repeatedly receive financial gifts from their parents.

How does this variability in transfers correspond to changes in the income of the child? Table 3 shows the number of children with decreased, constant, or increased income between waves (defined categorically) along with the direction of change of the transfer amount.[13] Those who did not receive a transfer in either wave are excluded from the table. For children whose income decreased between waves (and who had a non-zero transfer in at least one wave), the majority, 52 percent, had an increase in transfers (not adjusted for the CPI in this case) while 45 percent had a decline in transfer amounts. The relationship is similar for those children with an increase in income; 52 percent had a decrease in transfer amounts and 44 percent had an increase. Among those children whose income remains in the same bracket, the percentages experiencing an increase and a decrease in the transfer amount are nearly identical.

It is not just income that changes between waves. As these children age from an average age of 31 in 1992 to 49 in 2008 they experience various milestones in their lives—graduation from college (defined as attaining 16 years of schooling from one wave to the next), marriage, the purchase of a home, the birth of a child, and less happy outcomes, the end of a marriage, loss of a job, or loss of a home. Many of these events will cause a parent to update or alter her expectations regarding the child's needs and his lifetime income. Table 4 examines the relationship between transfers and these various events. The first two columns show the probability and amount of a transfer for those making the transition and the second two columns for the portion of the sample that did not.

For those experiencing any of these life course events, both the probability and amount of the transfer are greater than for those not. Taking the events in turn, college graduation appears to be associated with the one of the highest probabilities of a transfer; 20 percent of children who completed 16 years of schooling between waves of the survey received a transfer, a probability that is 50 percent greater than the probability for those who did not attain 16 years of schooling. Note that transfers to these children could include money given to finance an education as well as a graduation gift or assistance with starting out on their own upon completion of schooling. However, the average amount of the gift is only $500 greater than for the non-graduating children—consistent

[13] I do not use the imputed income measure in this table but instead rely on the reported income categories. changes between waves thus correspond to changes in a child's income that are sufficient to move him from one reported category to another and are thus larger than changes due to increases in the CPI.

with a relatively small but meaningful gift as one might expect at graduation time.[14]

The marriage of a child is associated with a large increase in the probability of a transfer, approximately 30 percent greater than that to children who did not marry between waves, and a $700 increase in the conditional amount. Perhaps surprisingly, the purchase of a home is associated with only a modest increase in the probability of a transfer and in the amount.

The birth of a grandchild is associated with the largest conditional amount, $5,758 versus $4,236 for those who did not have a child between waves, although there is only a slight difference in the likelihood of a transfer being made at this time, 14.5 percent versus 13.4. One might suspect that in addition to larger financial transfers, transfers benefiting a grandchild are also often made in-kind, and gifts of clothes, toys, or furniture will not be included in this total.[15] However, looking at just the birth of a first child, the amounts (and sample size) are much smaller-suggesting that financial pressures on the child's family associated with a growing family may be an important concern in addition to the happy event itself.

While the birth of a child, the purchase of a home, and marriage, likely all result in significant expenses incurred by the child, parents appear to respond not just to these happy (but expensive) occasions, but to negative shocks as well. The loss of a job is associated with a greater probability of a transfer than any of the previously listed events except for schooling and the amount is larger than all events other than the birth of a child. Among those working in one wave and not in the next, the probability of transfer receipt is 17.5 percent and the conditional amount averages $5,257. However, the greatest probability of a transfer by far is associated with the end of a marriage. Among those children who were reportedly married in one wave and not in the next, the probability of receiving a cash transfer from a parent was 21 percent, 61 percent higher than for those who did not leave a marriage.[16] The amount too was larger than for most events, consistent with the negative financial shock associated with a divorce. Although less obviously a negative shock, children who transition from owning a home to not owning one are also more likely than average to receive a transfer and

[14]The sample consists of only those children who did not live at home in the first wave. Children who were temporarily away at school would be considered to be living at home. Therefore, the sample likely excludes most of those who were full-time students at age 18, and thus much of the parental investment in college. See Haider and McGarry (2012) for an examination of schooling transfers and their relationship to later financial transfers.

[15]Hours spent on child care are also omitted from the tabulation although this information is available in another part of the survey and has been studied elsewhere (Lei, 1996).

[16]Because the children are relatively young, I refer to this event as a divorce although it could result from the death of a spouse.

receive somewhat larger amounts.

Thus, it is not just the permanent income that matters as in the standard cross-sectional models, children who experience any of the life course events associated with changes in their financial circumstances are more likely to receive a transfer than those who do not. And these transfers are not just congratulatory gifts for milestone events but appear to bolster a child's financial resources. Particularly noteworthy are the magnitudes associated with unexpected events such as divorce and the loss of a job.

What do these patterns mean for differences within families? Previous work (McGarry and Schoeni, 1995) has shown that parents rarely transfer equal amounts to their children in a given wave. As demonstrated in that paper, even with only two children in the family, only 14 percent of parents transferring a positive amount to at least one child, transferred an equal amount to both children. For larger families the fraction giving equally approaches zero. Given the variability exhibited from year to year in transfer receipt, and expected differences in the timing at which children reach the various milestones noted in table 4, it is possible that cross-sectional patterns obscure more equal transfers made over a lifetime. In table 5 I examine giving over a 17 year period. The column headings denote the number of children in the family and the first row reports the number of families of that size. Because I focus on equal giving among those who made at least one transfer over the 17 year period, the second row reports the percent of this total that did so for each family size. As one can see there is a slight decline in the likelihood of any transfer being made as family size increases, consistent with differences in parental resources, but the trend is not monotonic.

The first panel shows the results for transfers in a single survey period, with all nine biennial reports stacked together. The results are similar to those in McGarry and Schoeni (1995) and show that among two child families, just 16 percent of those making a transfer in a given year, transferred the same amount to both children. This figure falls with family size although not monotonically so. When a more generous definition of equality is used, treating as equal transfers within 10 percent of the mean amount for the family, the percent making equal gifts is greater, but not by much, 17 percent of two child families and 6.0 percent of three child families make "equal" transfers. With a definition of equal of 20 percent around the mean, the numbers rise further, to 20 and 6.2 percent for two and three children families, but the majority are still treating children very differently.

In the second panel I examine the extent to which transfers tend to equalize across children over a lifetime. Contrary to the assumption that transfers even out over a lifetiem, if anything, the reverse appears to be true. While 16 percent of two child families, and 4.4 percent of three child families who made a transfer, transferred the same amount to each child in a single period, only 5 percent and 1.1 percent respectively made equal transfers over the entire HRS window of observation. Again the percentages rise with a more relaxed definition of equality but equal giving is far from being a norm, even over this extended period. In fact, the likelihood of equal giving is far lower over an extended period than in any particular wave.

One difficulty with aggregating transfers over a long period of time is that parents typically report giving round amounts such as $1,000. Using transfers measured in real dollars will treat as unequal $1,000 gifts made to each child in different years. The third panel thus repeats this exercise using nominal dollars. The percent making equal transfers is slightly higher that that in the second panel, but the implication is the same—parents treat children very differently with respect to the value of transfers.

The numbers presented in this section indicate a substantial amount of period to period variation in recipiency and indicates that transitory shocks and / or temporary liquidity constraints likely play important roles in explaining observed behavior. Furthermore, the evidence presented here on aggregate giving is the first I know of demonstrating how parents divide transfers among siblings over a lifetime. If children simply differed in the timing of transfer receipt, we would expect greater equality when looking over a longer time horizon than in a single period, contrary to what is observed.

4 Empirical Analysis of Income Effect

To examine more closely the relationship between a child's income and the receipt of transfers, I turn to a regression framework. Although the model presented earlier indicates that the magnitudes of the income effects cannot be used to test the altruism motive, the effect of changes in income on the probability and amount of transfers is important for understanding the potential degree of crowding out of private assistance by public programs. The larger the change in familial transfers for a change in the income of the potential recipient, the less effective will be government assistance programs targeting these same individuals. In this regression context I can control for the observable

characteristics of the child and parent. However, also likely to be important are *unobservable* characteristics such as permanent income, industriousness, or ability. To control for these important features I estimate models with both family and child fixed effects and begin this section with a discussion of how these effects might be modeled.

4.1 Specification of the empirical transfer equation

An important consideration in the empirical analysis of transfer behavior is thus the correct specification of the error process. One would expect there to be differences across families in affection, dynastic wealth and other unobservables that would be correlated with transfer behavior. Even within families it is likely to be the case that there are unobserved differences across children, perhaps in ability or in the effort they apply to their jobs, that will be correlated with the parent's decision to make a transfer. If these factors are ignored, estimates of the included effects will be biased.

To illustrate the potential problem more formally, consider the following Stone-Geary specification of the utility function for the parent.[17]

$$U_p = (1-\eta)log(c_p - \beta_1) + \eta\, log(c_k - \beta_2).$$

In this specification β_1 and β_2 represent minimally acceptable consumption bundles for the parent and child. They are assumed to be functions of the characteristics of the specific individual X_1 and X_2 and to contain any unobserved heterogeneity, where the heterogeneity may be family-specific (e_1) or child-specific (e_2). Assuming linearity, β_1 and β_2 can be written as

$$\begin{aligned} \beta_1 &= b_1 X_1 + e_1 \\ \beta_2 &= b_2 X_2 + e_2. \end{aligned}$$

This specification of the utility function implies a transfer equation of the form

$$T = \eta\, w_p - (1-\eta) y_k - \eta b_1 X_1 + (1-\eta) b_2 X_2 + \xi$$

where

$$\xi = -\eta e_1 + (1-\eta) e_2$$

[17] For simplicity, in this example I temporarily ignore the dynamic aspect of transfer behavior.

and w_p again is the income of the parent and y_k is the income of the child. This expression is linear in e_1 and e_2—error components that may be correlated with the child's income. For example, on the family level, parents will differ in the level of consumption they desire for their children and / or their access to funds to pay for college, and will therefore have invested differentially in the schooling of children. These differences in schooling will in turn lead to differences in the incomes of the children. In this case the unobserved family specific component (e_1) will be postively correlated with both current transfers and with the child's income. On the child level, e_2 may include a measure of the child's industriousness. If parents are satisfied with a lower level of consumption for less industrious children (i.e. β_2 is lower for these children) then ceteris paribus transfers and industriousness will be positively correlated. We would also expect the child's income to be positively correlated with his industriousness, leading again to biased effects of the derivative. Proper estimation of the transfer equation thus needs to control for these sources of potential correlation.

4.2 Multivariate analyses

To estimate the correlates related to the probability a child receives a transfer and for the amount of the transfer, I first estimate the pair of simple OLS equations.[18] These specifications offer a description of transfer behavior and provide a base against which to compare later models that control for unobserved heterogeneity. I then control for the possibility that parental decisions on transfers may differ across families in unobserved ways that are correlated with the regressors by estimating a family fixed effects specification. Similar results have been reported elsewhere, although with far less data (McGarry and Schoeni, 1995), so I do not discuss them in detail. Finally, I take advantage of the multiple observations per child to control for unobserved differences across children, such as permanent income or ability, that are potentially correlated with the explanatory variables. Table 6 reports the results of the three specifications.[19]

In addition to income, the specifications control for the child's age, sex, years of schooling, whether he is currently enrolled in school, is married, the number of own children, and characteristics of the parent(s): age, race, Hispanic ethnicity, income, wealth, schooling, and health status.[20]

[18] Observations for all waves are stacked and the standard errors corrected for multiple observations per child.

[19] I report estimates from a linear probability model for the receipt of transfers for ease of interpretation, but logit and fixed effect (conditional) logit specifications yield identical conclusions.

[20] Here the child's income is measured using the single CPS imputed amount but a similar negative effect relation-

4.2.1 OLS effects

In the first pair of columns in table 6 there is a strong negative relationship between the child's income and both the probability of receiving a transfer and the amount. Note, however, that the effects are small. A $10,000 increase in income is associated with just a $61 decline in the amount of the transfer. Married children are less likely to receive a transfer and receive less, perhaps attesting to their greater maturity or financial stability, as well as the availability of a spouse to help smooth negative shocks to income. Children who are enrolled in college are more likely to receive a transfer and receive significantly more than those who are not. Sons are less likely to receive a transfer than are daughters but there is no difference in the amounts. Children in non-white families also get less, even controlling for parental resources.

I do not report the coefficient estimates for parental variables, but as expected, there is a strong positive relationship between parental resources and transfers; the greater the parent's income, assets, and education level, the more likely the child is to receive a transfer and the greater the amount. The more siblings a child has, the lower the transfer, as siblings can be thought of as competition for parental resources. These effects are not identified in family or child fixed effect models.

4.2.2 Family fixed effects

The second pair of columns reports the estimates for the family fixed effects specifications. The unobserved family component captures differences in what families consider a minimum level of consumption, differences in generosity, or perhaps dynastic wealth.

Perhaps surprisingly, most of the coefficients for the family fixed effects model for the probability of a transfer are similar to the first set of estimates. The income effects are of similar magnitude and the only notable change is with respect to years of schooling. In the OLS specification there is a positive and significant relationship between years of completed schooling and the likelihood of a transfer and a positive (although not significantly different from zero, p=0.14) relationship with the amount of the transfer. However, in the family fixed effects estimation, the coefficient estimates for both equations are negative and insignificant. Taken together the results indicate that children

ship between income and transfers is observed with the categorical measures. The effects of other coefficients are unchanged.

with higher levels of schooling are more likely to live in families that made transfers, suggesting perhaps that parents who give generously for schooling, allowing their children to complete more years of education, continue to give once the children have completed school. When controlling for this family fixed effect there is no difference in giving as a function of schooling.

4.2.3 Child-specific effects

An altruistic model predicts that parents will choose the amount to transfer over a lifetime with regard to a child's permanent income. However, if a child is unable to borrow freely across periods parents may make transfers to alleviate liquidity constraints as well. Thus transfers will be made with regard to both permanent and current incomes. The empirical specifications above do not contain a measure of permanent income of the child beyond the inclusion of completed schooling. To control for this and other permanent characteristics of the child, I estimate a child fixed-effects model. Because I also control for schooling in the regression the individual–specific error might best be thought of as permanent income less the effect of schooling (and other observables). If one considers permanent income to be primarily a function of schooling and ability, this unobserved error component can be termed a measure of ability.

The estimated coefficients from this specification are shown in the right-most pair of columns in Table 6. When child specific effects are controlled for there continues to be a significant negative relationship between a child's income and both the probability of transfer receipt and the amount, but the effect is dampened somewhat from the OLS version. The decline is approximately 30 percent for the probability and a similar 35 percent for the amount. If we consider the unobserved child effect to be ability, then this result suggests that, all else constant, more able children receive less generous transfers than less able. Or conversely, ceteris paribus, parents provide more support to less able children, a result that accords with our intuition.

4.3 Updating

The updating model sketched out in section 2.2 implies that observations on a child's income are used by parents to update their expectations of the child's future income and thus affect current transfers. Using this updating framework, with past observations informing expectations, transfers should be correlated with both current and lagged income measures. In table 7 I test this hypothesis.

Although not shown in the table, the regressions also include the complete set of child and parent characteristics employed in the regressions in table 6.

The results shown here are consistent with an updating model. Lagged income is a significant predictor of current transfers even when current income and other characteristics of the child are controlled for. As one would expect, the effects are smaller than those of current income– approximately half of the magnitude of current income. With controls for lagged income, the effect of current income declines only slightly in absolute value and remains significant. Again as well, there is little difference in the income effect between the OLS and family fixed effect regression with a 30 percent or so dampening in the child fixed effect specification. The significance of lagged income in the child fixed effects specification when permanent income and other fixed characteristics of the child are controlled for, suggests that parents are indeed obtaining information from the realizations on income.[21]

5 Discussion and Conclusions

This paper considers parental transfers in a new light by focusing on the dynamic aspects of giving to children. The simple expansion of the classic altruism model incorporating the notion that parenta; expectations regarding a child's income are uncertain and are updated over time as information about the child is revealed, highlights the difficulty of accepting or rejecting the altruism model based on the standard tests and cross-sectional data.

In addition, the paper provides some of the first evidence of important time varying aspects of transfer behavior. Using panel data I find that the amount of variation over time and within families in both the probability of receiving a transfer and in the amount received, is large. This result suggests that a substantial fraction of transfers are made in response to short-term income fluctuations, consistent with the liquidity constraint argument of Cox (1990). I also directly examine the coincidence of transfers and life course events. I find substantial giving particularly for what are likely to be unexpected negative shocks to income such as a divorce or loss of a job, further confirming the role of parents as helping to smooth consumption when times are difficult.

The degree of within family variation in the transfers children receive at any given time is not

[21] An alternative explanation for the significance of lagged income is measurement error in the child's income. It is difficult to think of instrumental variables to identify separately the effects of current and lagged income.

surprising if gifts were targeted towards specific events. However,I find no evidence that inequality within families is reduced when transfers are aggregated over an extended period of timein fact, they aggregate transfers appear to be more unequal than total transfers. Thus, parents to not appear to be endeavoring to make equal lifetime transfers.

The importance of a child's need is further evidenced by the results of a regression analysis. Using multiple observations per child I am able to control for fixed child-specific characteristics such as ability or permanent income. I find that the estimated effect of the child's current income on transfers is biased upward when permanent differences are ignored. However, even when fixed characteristics are completely controlled for, there continues to be a significant negative relationship between current income and transfers as well as with lagged income. Taken together these results indicate that parents appear to be taking all information regarding a child's income into account when determining whether and how much to give; information on both current and lagged income as well as fixed difference across children in their permanent income / ability.

Appendix

The model in section 2.2 yields the first period maximization problem,

$$max\ \ U_1(c_{p_1}) + \eta\, V_1(c_{k_1}) + \int [\, U_2(A_1 - T_2(A_1, y_{k_2}) + \eta\, V_2(y_{k_2} + T_2(A_1, y_{k_2}))\,]\, f(y_{k_2}|I)\, dy_{k_2}$$

with respect to c_{p_1} and T_1 subject to the following constraints

$$\begin{aligned} A_1 &= w_p - c_{p_1} - T_1 \\ c_{k_1} &= y_{k_1} + T_1. \end{aligned}$$

Differentiating with respect to c_{p_1} and T_1 results in the first order conditions for an interior solution:

$$\begin{aligned} U_1' - \int [U_2'\,(1 - T_2') + \eta\, V_2'\, T_2'\,]\, f(y_{k_2}|I)\, dy_{k_2} &= 0 \\ \eta\, V_1' - \int [U_2'\,(1 - T_2') + \eta\, V_2'\, T_2'\,]\, f(y_{k_2}|I)\, dy_{k_2} &= 0 \end{aligned}$$

where primes denote derivatives and the arguments of the functions are omitted for clarity but are uniquely determined by the subscripted functions. Let

$$g\,' = U_2'(1 - T_2'\,) + \eta\, V_2'\, T_2'$$

Then differentiating the first order conditions yields a system of equations

$$\begin{aligned} U_1''\, dc_{p_1} - \int [g''\,(dw_p - dc_{p_1} - dT_1)\, f(y_{k_2}|I) - g'\, f_{y_{k_1}}(y_{k_2}|I)\, dy_{k_1}]\, dy_{k_2} &= 0 \\ \eta\, V_1''\, dy_{k_1} + \eta\, V_1''\, dT_1 - \int [g''\,(dw_p - dc_{p_1} - dT_1)\, f(y_{k_2}|I) + g'\, f_{y_{k_1}}(y_{k_2}|I)\, dy_{k_1}]\, dy_{k_2} &= 0 \end{aligned}$$

where $f_{y_{k_1}}(y_{k_2}|I)$ is the derivative of the probability density function of y_{k_2} with respect to y_{k_1}.

$$\begin{aligned} \text{Let } G_1 &= \int g''\, f(y_{k_2}|I) dy_{k_2} \\ \text{and let } G_2 &= \int g'\, f_{y_{k_1}}(y_{k_2}|I)\, dy_{k_2}, \end{aligned}$$

then

$$\begin{bmatrix} U_1'' + G_1, & G_1 \\ G_1, & \eta\, V_1'' + G_1 \end{bmatrix} \begin{bmatrix} dc_{p_1} \\ dT_1 \end{bmatrix} = \begin{bmatrix} G_1\, dw_p + G_2\, dy_{k_1} \\ G_1\, dw_p + (G_2 - \eta\, V_1'')dy_{k_1} \end{bmatrix}$$

This system can be solved for $\partial T_1/\partial y_{k_1}$ and $\partial T_1/\partial w_p$.

$$\begin{aligned} \partial T_1/\partial y_{k_1} &= \frac{-U_1''\,\eta\, V_1'' + U_1''\, G_2 - G_1\,\eta\, V_1''}{\triangle} \\ \partial T_1/\partial w_p &= \frac{G_1\, U_1''}{\triangle} \end{aligned}$$

where

$$\triangle = \begin{vmatrix} U_1'' + G_1, & G_1 \\ G_1, & \eta\, V_1'' + G_1 \end{vmatrix}$$

and

$$\frac{\partial T_1}{\partial y_{k_1}} - \frac{\partial T_1}{\partial w_p} = -1 + \frac{U_1'' G_2}{\triangle}.$$

U_1'' is negative, $\triangle$ is positive. Thus if $G_2 < 0$ then $(U_1'' G_2)/\triangle > 0$ and $-1 < \frac{\partial T_1}{\partial y_{k_1}} - \frac{\partial T_1}{\partial w_p} < 0$. The difference from -1 depends on the value of G_2.

What might one expect for G_2? Note first that g' is a marginal utility and is therefore expected to be monotonically decreasing in y_{k_2}. It can then be shown that if the effect of an increase in the child's period 1 income is to shift the distribution of y_{k_2} to the right (in other words, the random variable y_{k_2} becomes stochastically larger as y_{k_1} increases)[22] then G_2 will negative.[23]

Consider a concrete example wherein y_{k_1} and y_{k_2} are jointly normal with means μ_1 and μ_2, variances σ_1^2 and σ_2^2 and covariance $\rho\, \sigma_1 \sigma_2$. In this case,

$$G_2 = \left(\frac{\rho}{\sigma_1 (1 - \rho^2)} \right) E \left[g' \left(y_{k_2} - \left(\mu_2 + \frac{\sigma_2}{\sigma_1} \rho (y_{k_1} - \mu_1 \right) \right) \right]$$

where $E[\cdot]$ denotes the expected value of $[\cdot]$. The expectation term in the above expression is the covariance of the marginal utility of period one savings and the child's second period income which is negative; an increase in the child's second period income increases the family's second period resources and lowers the marginal utility of a dollar carried over to that period. Thus, if ρ is positive, so that a greater value of y_{k_1} implies a greater expected value of y_{k_2}, then G_2 is negative. And the relationship

$$\frac{\partial T_1}{\partial y_{k_1}} - \frac{\partial T_1}{\partial w_p} > -1.$$

In the special case where $\rho = 0$ so that y_{k_1} is uninformative about y_{k_2}, the fraction

$$\frac{U_1'' G_2}{\triangle} = 0$$

and

$$\frac{\partial T_1}{\partial y_{k_1}} - \frac{\partial T_1}{\partial w_p} = -1.$$

[22] $y_{k_2}^*$ is stochastically larger than y_{k_2} if $F_{y_{k_2}^*}(x) < F_{y_{k_1}}(x) \; \forall \; x$ (Bickel and Doksum, 1977).

[23] The derivation also requires that y_{k_2} be bounded to lie between 0 and some maximum income W.

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Table 1
Means of Selected Variables for Sample of Children

	1992 (n=10,064)*		2008 (n=10,064)*		All (90,576)*	
	Mean	Std Err	Mean	Std Err	Mean	Std Err
Total Family Income of Child:						
Less than $10,000	0.17	0.004	0.04	0.002	0.07	0.001
$10-$25/35,000	0.36	0.005	0.12	0.003	0.22	0.002
$25,000 or more	0.47	0.005	--	--		
$35,000-$70,000	--	--	0.23	0.004	0.25	0.002
$70,000	--	--	0.24	0.004	0.21	0.002
Parent reported don't know			0.37	0.005	0.25	0.002
Continuous measure	43,320	268.4	68,228	462	57,665	152
Demographic Variables for child:						
Age	30.9	0.054	46.9	0.054	38.9	0.025
Male	0.503	0.005	0.50	0.005	0.50	0.002
Own home	0.47	0.005	0.67	0.005	0.59	0.002
Lives w/in10miles	0.40	0.005	0.29	0.005	0.33	0.002
Married	0.64	0.005	0.72	0.004	0.69	0.002
Number children	1.36	0.013	2.13	0.015	1.79	0.005
Schooling level	13.08	0.022	13.37	0.023	13.29	0.007
In school	0.08	0.003	0.03	0.002	0.04	0.001
Transfers:						
Received a transfer	0.15	0.004	0.12	0.003	0.14	0.001
Amount	1173	55.3	82.8	115.1	928.1	19.9
Amount > 0	7977	324	4745	436	4524	92.3
Family Variables:						
Income	63,020	659	49,293	704	58,766	261
Assets	275,976	5621	425,145	9655	381,169	3,727
Nonwhite	0.20	0.004	0.20	0.004	0.20	0.001
Education	11.9	0.031	11.9	0.031	11.9	0.001
Number children	4.69	0.024	4.68	0.025	4.73	0.001
Poor health	0.11	0.003	0.15	0.004	0.08	0.001
Married	0.79	0.004	0.58	0.005	0.71	0.002
Unmarried female	0.18	0.004	0.35	0.005	0.25	0.001

* Number of observations differs for some variables due to missing values.
Sample is of children ages 18 years old or older in1992, who do not live with their parents in that year and who are observed in all waves of the survey. Financial variables are reported in 2008 dollars.

Table 2

Number[†] (and Percent) Receiving Transfers in Each Year Child Level

	Year 2 Status		
Year 1 Status	Received Transfer	No Transfer	Total
Transfer	4,950 (6.2)	5,968 (7.5)	10,918 (13.7)
No Transfer	5,667 (7.1)	62,950 (79.2)	68,617 (86.3)
Total	10,617 (13.4)	68,918 (86.7)	69,952 (100.0)

[†] The sample size differs from table 1 due to missing observations on transfer receipt in one of the two comparison waves and the lack of Year 2 measures for data from 2008.

Table 3

Relationship between Change in Income and Change in Transfers

	Change in transfer amount			
Change in Income	Decreased	No Change	Increase	Total[†]
Decreased				
number	1657	110	2901	3668
percent	45.2	3.0	51.8	100
Same				
number	1840	114	1872	4912
percent	48.4	3.3	48.3	100
Increased				
number	1179	63	992	3608
percent	52.4	3.2	44.3	100

[†] Rows may not sum to 100 due to rounding. The sample consists of children receiving a transfer in at least one of the two waves. Income changes are changes in reported income category (see text) and dollar value of transfers for this table only are in nominal terms—if real dollars are used there are only a couple of observations in the middle column with exactly equal transfers in both periods.

Table 4

Relationship between Transfers and Life course Events

Event	Experienced Event			Did not Experience Event		
	% received transfer	Amount > 0		% received transfer	Amount > 0	
		Mean	(std err)		Mean	(std err)
Attained 16 yrs school (n=712)	20.2	4,714	(665)	13.3	4,217	(97)
Married (n=4,198)	16.8	4,247	(271)	12.8	4,231	(101)
Bought a home (n=5,202)	16.5	4,692	(313)	13.7	3,995	(101)
Had a child (n=19,369)	14.5	5,758	(211)	13.4	4,236	(103)
Had a first child (n=2,682)	14.4	4,823	(518)	12.9	4,061	(114)
Lost job (n=4,011)	17.5	5,257	(425)	13.9	4,151	(102)
Marriage ended (n=3,335)	21.0	5,136	(408)	13.1	4,180	(99)
Lost home (n=3,172)	15.2	4,653	(463)	13.9	4,032	(99)
Any event (n=32,299)	15.6	5,384	(150)	13.4	3,793	(121)

Variables are defined as changes in status between two surveys. Married means that the child was reported as unmarried in one wave and married in the next. Marriage ended is the reverse; the child was married in one wave and in the next. Bought / lost a home and lost job are measured similarly.

Table 5
Equality of transfers by the number of children (conditional on at least one transfer)

	Number of Children in sample			
Measure of parental transfer	2	3	4	5 +
Number of observations	1000	714	488	254
Pct of families making a transfer at least once	74.7	78.2	70.1	65.1
Single year transfers (average of 9 reports)				
Exactly equal	15.9	4.4	1.7	4.9
Within 10 percent of mean	17.0	6.0	5.4	4.9
Within 20 percent of mean	19.7	6.2	5.6	5.0
Aggregated 1992-2008 real dollars				
Exactly equal	5.0	1.1	1.2	1.7
Within 10 percent of mean	14.2	2.3	1.5	1.7
Within 20 percent of mean	22.9	4.3	2.3	2.3
Aggregated 1992-2008 nominal dollars				
Exactly equal	6.0	1.4	1.2	1.7
Within 10 percent of mean	15.3	2.2	1.5	1.7
Within 20 percent of mean	23.2	3.7	2.3	2.3

Notes: Families are grouped by the number of children in the sample, not necessarily the number in the family. Children are missing from the sample if they were not at least 18 years old, living away from home in 1992 (excluding those temporarily away for school), and observed in all waves of the survey.

Table 6
Effects of Child's Characteristics on the Probability and Amount of a Transfer
(n=67,532)

	OLS		Family F.E.		Child F.E.	
	(1) Prob	(2) Amount	(3) Prob	(4) Amount	(5) Prob	(6) Amount
Child Variables						
Income ($10,000s)	-0.013***	-61.2***	-0.014***	-64.0***	-0.009***	-39.4***
	(0.001)	(14.7)	(0.001)	(10.1)	(0.001)	(11.7)
Years of Schooling	0.003***	26.7	-0.001	-25.8	-0.002	-10.6
	(0.001)	(18.3)	(0.001)	(16.6)	(0.002)	(35.1)
Married	-0.028***	-217***	-0.028***	-166.6***	-0.034***	-189**
	(0.004)	(58.5)	(0.003)	(62.3)	(0.004)	(79.8)
Own home	-0.023***	-28.3	-0.018***	-20.6	-0.007*	69.0
	(0.004)	(54.7)	(0.003)	(60.7)	(0.004)	(74.5)
Currently in school	0.079***	807***	0.060***	793***	0.060***	-751***
	(0.009)	(145)	(0.006)	(114)	(0.007)	(129)
Number of children	0.010***	27.7	0.010***	50.5**	-0.001	-28.1
	(0.001)	(18.7)	(0.001)	(20.0)	(0.002)	(32.5)
Male	-0.011***	-30.6	-0.017***	-85.5		
	(0.004)	(59.0)	(0.003)	(54.4)		
Nonwhite	-0.018***	-143***				
	(0.005)	(45.5)				
Mean dependent variable	0.139	966	0.139	966	0.139	966
R2	0.089	0.046	0.30	0.20	0.39	0.27

Robust standard errors in parentheses. OLS regressions also include a dummy variable denoting that the parent could not report the child's income, dummy variables for each survey year, and the following characteristics of the parents: head's age, marital status, education, ethnicity, income, wealth, either parent in poor health, and number of children.
*** p<0.01, ** p<0.05, * p<0.1

Table 7
OLS Estimates of the Probability and Amount of a Transfer
With lagged income (n=46,738)

	OLS		Family Fixed Effect		Child Fixed Effect	
	Prob	Amount	Prob	Amount	Prob	Amount
Income Measure						
Midpoint	-0.011***	-46.7***	-0.012***	-55.8***	-0.008***	-30.4**
	(0.001)	(20.6)	(0.001)	(12.8)	(0.001)	(15.2)
Lagged Income	-0.005***	-34.8**	-0.006***	-27.8**	-0.002***	-8.1
	(0.001)	(15.8)	(0.001)	(12.3)	(0.001)	(14.9)
Mean dependent variable	0.15	1043	0.15	1043	0.15	1043
R2	0.09	0.05	0.32	0.23	0.44	0.31

Robust standard errors in parentheses. The number of observations is reduced relative to table 6 because of missing observations on lagged income. All regressions control for the complete set of child characteristics contained in table 6 and where identified for the parental characteristics. *** p<0.01, ** p<0.05, * p<0.1