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Interfamily Transfers and Income Redistribution

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13.1 Introduction

The issue of resource transfers among families and across generations has stimulated much concern among economists in recent years. Intergenerational and interfamily transfers have been investigated in a variety of contexts. One important line of research has been concerned with the connection between bequests and inequality in earnings or lifetime wealth. Menchik (1980) finds that bequests are equally shared among family members. In contrast, using a different data set, Tomes (1981) finds evidence that bequests perform a compensatory role; *ceteris paribus*, inheritances received tend to be inversely related to income. Though the bequest motive appears to be strong for those in upper-income strata (Menchik and David 1983), the scope for significant redistribution of economic welfare through bequests for the majority of individuals is limited, since the average inheritance received is small (Blinder 1973; Menchik 1980).

Another mechanism for income redistribution is *inter vivos* transfers. Because of data limitations, however, these transfers have received less attention in the literature compared to bequests. Parsons (1975) analyzes the connection between parental characteristics and schooling behavior but did not have access to direct measures of family support for students. Adams (1980) explores a similar problem and is forced to use educational attainment as a proxy for *inter vivos* transfers received. Lampman and Smeeding (1982), using fragmentary data culled from a variety of sources, investigate trends in interfamily transfers, finding evidence of a declining trend in such transfers relative to government transfers over the past thirty years.

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In this chapter we investigate a new data set that contains information for a variety of inter vivos transfers as well as bequests. We focus primarily on an analysis of inter vivos transfer behavior. The chapter is divided into three sections. In the first section, a descriptive overview of the interfamily transfer data is presented. In the second section, a life-cycle model of interfamily transfers is developed to analyze inter vivos transfer behavior among families. In the final section some implications of the model are tested using the interfamily transfer data.

13.1.1 Interfamily Transfers—A Descriptive Overview

Data for intergenerational transfers come from the President's Commission on Pension Policy (PCPP)—Household Survey. The main objective of the commission was to obtain information about retirement income and the effects of retirement income on saving. The data set contains information about the components of household balance sheets, income from various sources, pension information, and demographic data. In addition, survey respondents were asked to report on various types of interfamily transfers. (Kurz 1984 complements this study.)

The PCPP survey obtained data for 4,605 families. The sample was designed to be a representative cross-section of the U.S. population. (See the appendix for more information about respondent selection.) The survey information used in this paper was collected in August 1979, generally covering the first eight months of that year.

Information about interfamily transfers was gathered in the following way. Respondents were asked if they received any contributions toward their expenses from anyone outside of their immediate family. The immediate family is defined as parents and any children under the age of eighteen living at the same address. Survey respondents are the heads of each family unit, where the head of each family unit is defined as the individual most familiar with family finances. Respondents aged eighteen and over who are living at the same address were treated as separate family units. The respondents were first asked to report any payments received in the past month for mortgages, utility bills, property taxes or property insurance, or food. The families were then asked to report on an additional set of transfers received from January 1979 through August 1979. These transfers included: bill payments (such as medical or legal fees) not reported in the monthly categories above; contributions toward the purchase of durable goods; transfers for education; trust funds; stocks and bonds; gifts of durable goods or property; the value of use of goods or property; cash; inheritances; and miscellaneous transfers received. Then the respondents were asked to report any transfers given to individuals outside the immediate family unit from January 1979 through August 1979. The categories for transfers given match the categories for eight-month transfers received (except that no information was obtained for be-

quests given). For the “monthly” items, however (i.e., mortgages, utilities, taxes and insurance, and food), households were only asked to report receipts and not transfers given. (A facsimile of the type of question dealing with interfamily transfers is presented in the appendix.)

Further, survey respondents were asked to identify the source of transfers received and the recipient of transfers given according to generation. Transfers received were classified according to three different family generations: older, younger, and equal. Transfers received from friends were put into the “equal” category. Transfers given were classified in the same way as transfers received.

The interfamily transfer data offer a unique opportunity to examine many different types of private transfers between family units, but the data are limited in a variety of ways. First, about a quarter of all households surveyed contained more than one family unit, and there are many implicit transfers that could take place in shared living arrangements that would not be picked up in the interfamily transfer data. Members of two-family units living under the same roof could exchange a variety of services, such as home production activities (e.g., housework, baby-sitting, and running errands). Second, transfers to individuals under the age of eighteen are not recorded in the survey, because the survey only considers transfers among adults (those aged eighteen and over). Third, since only transfers between family units are counted, interspousal transfers are omitted from the analysis below.

The survey also contains a variety of information about assets, property income, income from government transfers, and earnings. Household balance sheet components are broken down according to a variety of types of assets (e.g., value of savings deposits, jewelry) and different types of liabilities (e.g., mortgage debt, debts owed to other families). The survey contains data for nonlabor income from many different sources (e.g., food stamps, private pensions, stock dividends). Families were asked to report earnings for the first eight months of 1979, weekly hours worked, and other work-related information such as years of employment. The PCPP survey contains a variety of demographic data including number of children, marital status, and education.

Of the 4,605 families surveyed, 727 (15.8 percent) reported that they gave one or more transfers to other family units during the first eight months of 1979 (see table 13.1).¹ The number of households receiving a transfer during that period was 840 (18.4 percent). There were 472 monthly transfers received (for food, mortgages, insurance, and utilities) and 610

1. The actual number of family units that reported giving transfers was 728. One of the givers reported giving an extremely large cash gift (over \$200,000), and the value of this gift appeared inconsistent with the related earnings and asset information for this case. This outlier was removed from the sample.

Table 13.1 Families Giving and Receiving One or More Interfamily Transfers

| | Number | Proportion of Sample |
|------------------------------------|--------|----------------------|
| | | (<i>N</i> = 4,605) |
| Families giving | 727 | 15.8% |
| Families receiving | 840 | 18.3 |
| 1. Monthly | 472 | 10.2 |
| 2. Eight-month period | 610 | 13.5 |
| 3. Both (1) and (2) | 241 | 5.2 |
| Families both giving and receiving | 196 | 4.3 |

transfers received for bills, education, gifts, etc., during the first eight months of 1979.

The distribution of interfamily transfers is highly skewed (table 13.2). Among households giving transfers, those in the ninetieth percentile and above—in terms of the size of the transfer given—account for over half of all transfer dollars given. Among households receiving transfers, the size distribution of transfers is also highly unequal. The distribution pattern for transfers received is similar to that of transfers given.

The distribution of transfers given by type of transfer is presented in table 13.3.² The largest category in terms of total transfer dollars is transfers given for the payment of bills (25.4 percent). Bills could include payments for a variety of expenditures such as medical care or food, but a further breakdown of this category is not available in the data set. Expenditures for college education account for 16.8 percent of all transfer dollars, and the average transfer amount among givers (annualized) is \$2,292. Note that the transfer categories in table 13.3 cover both investment-related expenditures (e.g., education, durables) and consumption goods (e.g., use of property).

The types of transfers received in the first eight months of 1979 are presented in table 13.4, and monthly transfers received are presented in table 13.5. The items in table 13.4 for transfers received match those in table 13.3 for transfers given, except that table 13.4 includes bequests and the types of bills reported in tables 13.3 and 13.4 do not match.³ The largest component of total transfers received is bequests, but bequests in dollar terms account for only a quarter of all transfers received. The data in table 13.4 indicate that most of the interfamily income redistribution occurs through inter vivos transfers, rather than through bequests.

2. The transfer amounts reported in tables 13.3 and 13.4 are annualized figures. Because the eight-month survey period excludes the holiday season, however, the annualized figures may not reflect true annual figures for certain transfer categories, such as cash gifts.

3. In table 13.3 households were asked to report all transfers given for the payment of bills. In table 13.4 households were asked to report receipts of transfers for the payment of bills except for those covered under the monthly categories, which were reported separately.

Table 13.2 Size Distribution of Transfers

| Percentile | Percentage of Total Transfer Dollars Given | Percentage of Total Transfer Dollars Received, Eight-Month Categories | Percentage of Total Transfer Dollars Received, Monthly Categories |
|-----------------|--|---|---|
| 95th and above | 37.7 | 38.5 | 46.5 |
| 90th and above | 54.4 | 52.7 | 56.5 |
| Upper quartile | 78.4 | 75.0 | 73.1 |
| Second quartile | 15.1 | 17.0 | 15.9 |
| Third quartile | 5.3 | 6.4 | 7.8 |
| Lowest quartile | 1.2 | 1.7 | 3.1 |
| Sample size | 727 | 610 | 472 |

Table 13.3 Distribution of Transfer Dollars, by Type of Transfer Given (annualized figures, 1979 dollars)

| Transfer Category | Proportion Giving Transfers | Average Transfer Amount per Giver | Distribution of Transfer Dollars |
|-----------------------|-----------------------------|-----------------------------------|----------------------------------|
| 1. Bill payments | 6.2% | \$1,344 | 25.4% |
| 2. Durables | 1.5 | 1,023 | 4.7 |
| 3. College education | 2.4 | 2,292 | 16.8 |
| 4. Trust funds | 0.2 | 2,067 | 1.2 |
| 5. Securities | 0.1 | 5,717 | 2.3 |
| 6. Durables (in kind) | 1.7 | 2,059 | 10.7 |
| 7. Use of property | 4.4 | 1,284 | 17.2 |
| 8. Cash | 3.3 | 1,211 | 12.2 |
| 9. Other | 3.6 | 864 | 9.5 |
| TOTAL | 15.8 | 2,081 | 100.0 |

Table 13.4 Distribution of Transfer Dollars, by Type of Transfer Received (annualized figures, 1979 dollars)

| | Proportion Receiving Transfer | Average Transfer Amount per Recipient | Distribution of Transfer Dollars |
|-----------------------|-------------------------------|---------------------------------------|----------------------------------|
| 1. Bill payments | 5.3% | \$ 1,048 | 16.3% |
| 2. Durables | 1.1 | 1,296 | 4.3 |
| 3. College education | 3.9 | 2,087 | 22.9 |
| 4. Trust funds | 0.1 | 3,155 | 1.0 |
| 5. Securities | 1.2 | 2,984 | 2.1 |
| 6. Durables (in kind) | 1.1 | 1,010 | 3.2 |
| 7. Use of property | 4.1 | 1,112 | 13.6 |
| 8. Cash | 2.4 | 1,217 | 8.5 |
| 9. Inheritance | 0.8 | 11,465 | 25.7 |
| 10. Other | 0.4 | 1,395 | 2.5 |
| TOTAL | 12.3 | 2,753 | 100.0 |

Table 13.5 Distribution of Transfer Dollars, by Type of Monthly Transfer Received (monthly 1979 dollars)

| Transfer | Proportion Receiving Transfer | Average Transfer Amount per Recipient | Distribution of Transfer Dollars |
|--------------|-------------------------------|---------------------------------------|----------------------------------|
| 1. Mortgages | 4.0% | \$267 | 37.9% |
| 2. Utilities | 3.7 | 62 | 8.3 |
| 3. Insurance | 0.6 | 420 | 8.8 |
| 4. Food | 7.7 | 163 | 44.9 |
| TOTAL | 10.2 | 272 | 100.0 |

A comparison of similar categories in tables 13.3 and 13.4 is useful in order to assess the consistency of the transfer data reported in the survey. There is some evidence that transfers received might be underreported relative to transfers given. Aggregate transfer amounts from tables 13.3 and 13.4 from transfer categories that match (durables, college education, trust funds, securities, durables in kind, use of property, and cash) reveal that reported transfers given exceed transfers received by 11 percent. In addition, the average value for durables in kind among givers is twice as high as the value for durables received (\$2,059 versus \$1,010). Givers may place a greater value on those transfers compared to recipients.⁴

The distribution of monthly transfers by type is presented in table 13.5. The average transfer amount among recipients was \$272, and most of the monthly transfers received were for food. It is not possible to determine whether or not the monthly transfers occurred on a regular basis during the first eight months of 1979.⁵ The transfers reported in table 13.5 apply to August 1979.

An interesting comparison can be made between public and private transfers for food. Data for the value of food stamps received are available in the PCPP data. There were 412 family units who reported receiving food stamps, and the average value of food stamps received for this group was \$581 over the first eight months of 1979. Dividing by 8 yields a monthly average food stamp figure of \$73. This figure is less than half of the \$163 private transfer average for food (table 13.5). It is difficult to compare these two figures because of differences in the time frame, however. The private food transfer amount applies to August 1979 only, and it

4. The reconciling of aggregate transfers received with transfers given may be affected by a sampling problem, however. We do not know whether or not students living in dormitories on college campuses were sampled in the household survey. An undersampling of this group would cause an underreporting of educational transfer receipts. This problem is mitigated by the fact that the survey took place during the month of August, when the number of students living in dormitories is expected to be low compared to the fall and spring months.

5. In table 13.2, six households (the ninety-ninth percentile and above) reported receiving monthly transfers of \$3,000 and above, and one household reported receiving a monthly transfer for mortgage payments of \$15,820. These large values are likely to be lump-sum payments such as transfers for a down payment on a house.

Table 13.6 Transfers Received, by Student Status

| Recipients | Number | Average Transfer Received for Education | Average Transfer Received for Noneducational Items ^a | Average Transfer Received Monthly ^b |
|-------------|--------|---|---|--|
| Students | 179 | \$2,087 | \$1,174 | \$ 92 |
| Nonstudents | 661 | 0 | 1,503 | 169 |

Notes: Student status is defined in the following way: An individual is designated as a student if he or she receives interfamily transfers for education. Otherwise the recipient is designated a nonstudent. Those designated as nonstudents may still be students (e.g., enrolled in public universities or scholarship recipients). The word *student* is used here as convenient shorthand for "recipient of interfamily transfers for education." Educational transfers received are annualized, 1979 dollars.

^aAll items in table 13.4 except item number 3 (annualized, 1979 dollars).

^bAll items in table 13.5.

is impossible to measure private food transfers that took place in the earlier months of that year. Forty-two individuals in the sample received both food stamps and private transfers for food.

The values of average transfers received by student status is presented in table 13.6. An individual is defined as a student if he or she received interfamily transfers for education. Those receiving transfers for education also received an average of \$1,174 for other items during the first eight months of 1979 and an average of \$92 in monthly transfers. The average transfer received among nonstudents is lower. Nonstudents received an average of \$1,503 in noneducational transfers and an average of \$169 in monthly transfers.

13.1.2 Directions of Transfers

Transfer data are available according to generation. It is possible to distinguish among transfers given to younger, older, or same generations. Similarly, it is possible to distinguish among transfers received from different generations. The directions of transfers are presented in table 13.7. The distributions show that, while most of the flow of transfers is from older to younger generations, a substantial number of interfamily transfers take place among households of the same generation. Measured in dollars, transfers given to younger generations account for almost two-thirds of total transfer dollars, while transfers given to members of the same generation account for 27 percent of total transfer dollars given. The flow of transfers from younger to older households is small. Such transfers account for 9 percent of total transfer dollars given. The breakdown of transfers received according to direction reveals the same pattern. Almost 70 percent of all interfamily transfer income received originated with families from an older generation. In contrast, less than 3

Table 13.7 **Directions of Transfers**

| A. Transfers Given (annualized, 1979 dollars) | | | | |
|---|---------------------------|------------|----------------------------|--------------------------------------|
| Generation Given to | Number of Transfers Given | Percentage | Average Amount of Transfer | Percentage of Total Transfer Dollars |
| Older | 161 | 18.9 | 841 | 8.9 |
| Same | 353 | 41.4 | 1,170 | 27.3 |
| Younger | 338 | 39.7 | 2,855 | 63.8 |
| TOTAL | 852 | 100.0 | 1,776 | 100.0 |

| B. Transfers Received (annualized, 1979 dollars) | | | | |
|--|------------------------------|------------|----------------------------|--------------------------------------|
| Generation Received from | Number of Transfers Received | Percentage | Average Amount of Transfer | Percentage of Total Transfer Dollars |
| Older | 387 | 56.7 | \$2,791 | 69.1 |
| Same | 245 | 35.9 | 1,811 | 28.4 |
| Younger | 50 | 7.3 | 799 | 2.6 |
| TOTAL | 682 | 100.0 | 2,293 | 100.0 |

| C. Transfers Received (monthly) | | | | |
|---------------------------------|------------------------------|------------|----------------------------|------------|
| Generation Received from | Number of Transfers Received | Percentage | Average Amount of Transfer | Percentage |
| Older | 275 | 55.4 | \$259 | 55.7 |
| Same | 157 | 31.7 | 264 | 32.4 |
| Younger | 64 | 12.9 | 237 | 11.9 |
| TOTAL | 496 | 100.0 | 259 | 100.00 |

Table 13.8 Transfers by Age of Family Unit Head

| A. Transfers Given | | |
|--------------------|-----------------------------|----------------------------|
| Age | Proportion Giving Transfers | Average Transfer per Giver |
| 18–21 | 10.7% | \$ 383 |
| 22–40 | 16.7 | 920 |
| 41–61 | 19.6 | 1,950 |
| 62+ | 12.2 | 2,259 |

| B. Transfers Received | | |
|-----------------------|--------------------------------|---------------------------------------|
| Age | Proportion Receiving Transfers | Average Transfer Amount per Recipient |
| 18–21 | 40.6% | \$1,283 |
| 22–40 | 19.7 | 1,590 |
| 41–61 | 10.3 | 1,461 |
| 62+ | 9.0 | 624 |

percent of transfers received (measured in dollars) originated from younger households.⁶

Another way to examine the flow of transfers between generations is to look at the age profiles of transfers (table 13.8). The proportion giving transfers rises and falls with age. Among those giving transfers, the transfer-age profile rises over the life cycle. The proportion receiving transfers falls with age, but the average transfer per recipient first rises and then falls with age. The elderly (aged sixty-two and over) receive less transfer income than any other age bracket.

13.1.3 Characteristics of Families in the Sample

Selected characteristics of families in the sample are presented in table 13.9 according to transfer status. Transfer status is divided into givers, recipients, and those who neither give nor receive transfers. For convenience, let us denote the last group as “others.” Because 196 families both gave and received a transfer, some recipients are included among the givers and some givers are included among the recipients.⁷

Earnings and asset levels among the transfer groups are ranked highest for givers and lowest for recipients. Average earnings among givers is

6. The amount of transfers received from members of a younger generation is less than half of the amount given to members of an older generation. This discrepancy may result from reporting bias. Older households may have been reluctant in some cases to report income received from younger families.

7. If families are divided according to net transfer status—that is, transfers given net of transfers received being positive, negative, or zero—the characteristics of the families in these groups are similar to the figures reported in table 13.9.

Table 13.9 Selected Characteristics of Families by Interfamily Transfer Status

| | Givers | Recipients | Nongivers and Nonrecipients |
|-------------------------------------|--------|------------|-----------------------------|
| Age | 41.1 | 32.8 | 42.6 |
| Percent married, spouse present | 59.7 | 26.2 | 49.0 |
| Percent with children | | | |
| aged 18 or under | 40.9 | 27.0 | 35.9 |
| Years of schooling | 12.9 | 12.8 | 11.8 |
| Years of schooling, spouse | 12.5 | 12.7 | 11.7 |
| Percent multiearner | 38.2 | 15.0 | 24.5 |
| Percent female headed | 31.0 | 50.7 | 37.9 |
| Earnings | 32,067 | 16,816 | 19,976 |
| Percent with earnings | 89.8 | 84.5 | 70.0 |
| Financial income | 2,216 | 900 | 980 |
| Percent with financial income | 72.5 | 59.2 | 48.9 |
| Retirement income | 1,145 | 625 | 1,180 |
| Percent with retirement income | 17.2 | 16.2 | 23.4 |
| Public transfer income ^a | 434 | 697 | 561 |
| Percent with public transfer income | 19.0 | 30.7 | 21.6 |
| Value of financial assets | 28,417 | 11,372 | 14,654 |
| Value of tangible assets | 59,650 | 22,168 | 32,850 |
| Value of expected inheritance | 13,092 | 12,003 | 3,998 |
| Mortgage debt, home | 8,797 | 4,218 | 6,204 |
| Mortgage debt, other properties | 1,999 | 435 | 1,080 |
| Debts owed to other families | 517 | 225 | 136 |
| <i>N</i> | 727 | 840 | 3,249 |

^aIncludes income from private disability plans, alimony, and child support.

twice as high as average earnings among recipients. The average value of assets among givers (financial plus tangible wealth) is almost three times as high for givers compared to recipients, and the average value of assets for givers is almost double that of "others." Average income among "others" is higher than that of recipients, although a larger proportion of recipients have positive earnings (84 percent versus 70 percent). A greater proportion of "others" are retired compared to either of the other two groups. The proportion receiving public transfer income is highest among recipients and lowest among givers.

Recipients tend to be younger than other households, and relatively fewer of them are married. Average education levels for both recipients and givers, however, are higher compared to "others." In addition, the average value of expected inheritance reported among givers and recipients was three times higher compared to that reported among "others."

13.1.4 Transfers and Relative Income Inequality

Table 13.9 shows that average income is higher among households that give transfers compared to nongivers/nonrecipients, and that the average

Table 13.10 Income Inequality before and after Transfers

| Sample | | 1979 Income Inequality ^a | | N |
|-----------------------------|--------------|-------------------------------------|---------------------------|-------|
| | | Labor Income | Total Income ^b | |
| 1. Givers | pretransfer | .55 | .56 | 640 |
| | posttransfer | .52 | .55 | |
| 2. Recipients | pretransfer | .70 | .60 | 700 |
| | posttransfer | .49 | .47 | |
| 3. (1) and (2) | pretransfer | .71 | .69 | 1,169 |
| | posttransfer | .56 | .56 | |
| 4. All earners ^c | pretransfer | .58 | .55 | 3,396 |
| | posttransfer | .52 | .51 | |

^aIncome inequality is measured by the variance of the natural logarithm of income.

^bTotal income is equal to labor income plus financial income, government transfer income, retirement income, plus the rental value of owner-occupied housing, minus federal, state, and local taxes.

^cThe sample is restricted to those families with \$100 or more in labor earnings. If the sample is expanded to include those with less than \$100 in labor earnings, the qualitative results reported in table 13.9 are still obtained but the absolute changes in variances are larger.

income of households that receive transfers is lower than either of these groups. The next issue to be explored is the effects of interfamily transfers on the distribution of income.

The measure of relative income inequality used here is the variance of the natural logarithm of income. Inequality measures for different subsamples are given in table 13.10. Two measures of income are used. The first is labor income. The second is total income, which includes financial income, income from government and other transfer programs, retirement income, and imputed rental income from owner-occupied housing,⁸ and subtracts federal, state, and local taxes. Posttransfer income is defined as income minus transfers given plus transfers received. An income flow was imputed from bequests received.⁹ The sample is restricted to those families having \$100 or more in labor earnings.

Measured relative inequality declines when net interfamily transfers are added to income. For all households in the sample in table 13.10, the vari-

8. The income flow from owner-occupied housing is calculated by multiplying the value of housing in 1979 dollars by the ratio of aggregate rental income to the aggregate value of the U.S. housing stock (3.94 percent). Data are from the *Washington University Macroeconomic Model of the U.S. Economy* 1984.

9. The income from bequests was calculated by multiplying the bequest amount by the average nominal rate of return from financial assets in 1979 (7.54 percent). The average rate of return was calculated by dividing aggregate U.S. income flows from financial assets by the value of the aggregate U.S. stock of financial assets (*Washington University Macroeconomic Model of the U.S. Economy* 1984). No attempt was made to impute income flows from other transfers, although possibly some other transfers (such as gifts of durables) would be more appropriately treated as additions to the stock of wealth as opposed to income flows.

ance of the log of total income falls from .55 to .51 after interfamily transfers are taken into account. The decline in measured income inequality for the entire sample of earners is small, but for certain subgroups the narrowing of relative income inequality due to transfers is larger. For the group of recipients, for example, the variance of the log of labor income declines from 0.70 to 0.49 after net interfamily transfers are added. Among recipients the expanded measure of total income (which includes government transfer payments and subtracts taxes) is distributed more equally compared to labor income (with variances of 0.60 and 0.70 respectively). Once interfamily transfers are taken into account, measured income dispersion declines further to 0.47. These calculations suggest that both government tax and transfer programs and interfamily transfers play a role in narrowing relative income inequality.

13.2 A Life-Cycle Model of Intergenerational Transfers

The model to be presented is aimed at capturing the basic dynamics of life-cycle transfers across generations or across families within generations where altruism exists. The model assumes no uncertainty, and bequests are assumed to be zero (all transfers are inter vivos). The model also makes no distinction between transfers that subsidize consumption of the recipients and those that reflect human capital investments.

The model assumes a pattern of overlapping generations as follows. Each representative person in the model proceeds through two distinct life-cycle phases of length L —the “child” phase followed by the “parent” phase. The child phase ends when the parent dies and a new child is born; these two events occur simultaneously. Thus, a lifetime lasts for $2L$ years and successive generations overlap for L years. The key distinction between the child and the parent generations is that the child is assumed to be liquidity constrained whereas the parent is not. The child’s current consumption in each time period is constrained to equal the sum of own earnings and transfers received from the parents. The parent, on the other hand, has access to capital markets. Altruism is introduced into the model by assuming that parent and child seek to maximize the time preference discounted value of joint utility over the L years in which the two generations overlap.

The basic model may be stated formally as follows: Indexing child variables by 1 and parent variables by 2, joint utility in year t , $U(t)$, is assumed to equal the weighted sum of the logs of consumption of the child and the parent, $C_1(t)$ and $C_2(t)$ respectively.

$$(1) \quad U(t) = \beta \ln(C_1(t)) + \ln(C_2(t)),$$

where β is a nonnegative parameter reflecting the weight given to consumption of the child relative to that of the parent. The budget constraint facing the child is given by

$$(2) \quad E_1(t) + T(t) = C_1(t),$$

while that confronting the parent is

$$(3) \quad \dot{A} = rA(t) + E_2(t) - T(t) - C_2(t),$$

where E denotes earnings, T denotes net transfers received from the parent, $A(t)$ is the stock of the parent's earning assets (the dot over A denotes the time derivative of A), and r is the rate of interest. Maximizing the present value of utility over the L -year generational horizon, subject to the constraints posed by equations (2) and (3), then involves finding the optimal solution values for the following Hamiltonian function:

$$(4) \quad H = [\beta \ln C_1(t) + \ln C_2(t)]e^{-\rho t} \\ + \lambda_1(t)[E_1(t) + T(t) - C_1(t)] \\ + \lambda_2(t)[rA(t) + E_2(t) - T(t) - C_2(t)],$$

where ρ denotes the subjective rate-of-time discount, and earnings of both child and parent are assumed exogenously determined.

The assumption that bequests from the parent to the child equal zero implies that the parent exhausts all assets accumulated over the L adult years in which the liquidity constraint is not binding. Alternatively, the asset exhaustion condition states that the discounted value of parent consumption plus the discounted value of net transfers equal the discounted value of adult earnings over the L -year horizon:

$$(5) \quad \int_0^L C_2(t)e^{-\rho t} dt + \int_0^L T(t)e^{-\rho t} dt = \int_0^L E_2(t)e^{-\rho t} dt.$$

The assumption of exogenously determined earnings for both parent and child plus the asset exhaustion condition mean that the control problem posed by equation (4) reduces to solving for the optimal time path of two control variables: parent's consumption and net transfers. First-order conditions for the solution of the Hamiltonian reveal what is intuitively clear; net transfers are adjusted over time so as to maintain a proportional relationship between consumption by the child and consumption by the parent, as follows:

$$(6) \quad C_1(t) = \beta C_2(t).$$

Equation (6) defines the essence of altruism in the present model. It does not depend on the particular time paths of (exogenous) parent and child earnings. It implies that intergenerational transfers will increase income and consumption equality across generations so long as β is closer to 1.0 than the ratio of E_1 to E_2 . To solve for the precise time path of net transfers, it is necessary to specify the time paths of child and parent earnings. We assume that these grow at constant rates g_1 and g_2 respectively:

$$(7) \quad E_1(t) = E_1(O)e^{g_1 t}.$$

$$(8) \quad E_2(t) = E_2(O)e^{g_2(L+t)}.$$

Defining W_1 and W_2 as the present value of these earnings streams,

$$W_i = \int_0^L E_i(t)e^{-rt} dt, \quad i = 1, 2.$$

The expression for net transfers can be written as follows:

$$(9) \quad T(t) = \frac{\beta}{1 + \beta} \rho [W_1 + W_2] \frac{e^{(r-\rho)t}}{(1 - e^{-\rho L})} - E_1(0)e^{\beta t}.$$

Equation (9) implies the following partial derivative effects on transfers:

$$(10) \quad T = T(W_1, W_2, E_1, t, r, \rho, \beta).$$

(+) (+) (-) (?) (+) (?) (+)

The sign below each of the arguments in equation (10) represents the sign of the partial derivative of transfers with respect to that argument.

Some discussion of the above results is in order. First, note that equation (9) suggests that transfers from the older (parent) generation to the younger (child) generation will typically be positive; they can only become negative (i.e., transfers go on balance from the child to the parent) if child earnings are relatively large and joint utility favors parent consumption (a low value for β). This result can be seen from expression (10) in which the current level of child earnings, E_1 , is inversely related to the level of current transfers while the weighting parameter, β , is positively related to the level of transfers. Also clear is the positive influence of parent's wealth, W_2 , on transfers to the child. Less obvious is the result seen in expressions (9) and (10) that the present discounted value of child's wealth, W_1 , also increases transfers. This result becomes plausible when it is recognized that child's earnings are held constant and that the child is liquidity constrained. In such a circumstance any factor that produces a higher level of child's wealth, other than a higher level of current income for the child, can only lead to greater consumption if transfers increase. What is interesting in the present model is the unambiguous nature of this prediction.

The influence of the passage of time on transfers (holding E_1 constant) depends upon the values of ρ and r . A rate-of-time preference greater than the interest rate leads to reduced transfers over time, while a relatively low discount rate produces the opposite result.

The influence of increases in earnings growth rates on wealth is positive, while a rise in the rate of interest causes a decline in wealth. Through wealth effects, then, a rise in the rate of interest is associated with a decline in transfers. Holding wealth levels constant, a rise in the rate of interest implies steeper consumption profiles and therefore higher transfers (equation 10). A rise in the subjective rate-of-time preference could either raise or lower the level of transfers. Ignoring the finite life correction ($L = +\infty$), from equation (9), the effect of a change in the rate-of-time preference on transfers is given by

$$(11) \quad \frac{\partial T}{\partial \rho} = \frac{\beta}{1 + \beta} [W_1 + W_2] e^{(r - \rho)t} (1 - \rho t).$$

The effect of a rise in the subjective rate-of-time preference is positive if $\rho t < 1$, and negative if $\rho t > 1$. An increase in the subjective rate-of-time preference tilts the time profile of consumption (and therefore transfers) towards greater levels of consumption early in the life cycle and smaller levels of consumption later on in the life cycle.

Note that in this model the weighting parameter for child's consumption is assumed to be constant over time. If, instead, this parameter were to vary over time, the transfer profile would vary accordingly. A plausible generalization would be an increasing time profile as children become more efficient in consuming relative to parents over time. This modification would steepen the time profile of transfers.

Finally, while the above model poses the problem of transfers from older to younger generations, it can be applied to interfamily transfers among members of the same generation. The only behavioral assumptions that are necessary are (1) that altruism exists among families and (2) that one family is liquidity constrained and the other is not.

Although fairly simple in its structure, the model presented above provides a number of unambiguous predictions concerning the life-cycle determinants of interfamily transfers.

13.3 Empirical Implementation

13.3.1 Organization of the Data

The PCPP survey data will be used to test some implications of the interfamily transfer model. There are three types of observations in the data set. The first is the household, which is defined as a group of persons living at the same address. The 1979 survey covered 3,440 households. The households were then broken down into 4,605 family units. A family unit contains a head, his or her spouse, and children under the age of eighteen who live at home. All other individuals were considered as members of separate family units. Suppose, for example, a household is made up of a husband, wife, two children aged sixteen and twenty-one, and a grandparent. This household would be recorded as three separate family units: a primary family unit consisting of the husband, wife, and sixteen-year-old child, and two secondary units (the twenty-one-year-old and the grandparent). A household consisting of two unrelated individuals would be divided into two family units. The third unit of observation is the person. Demographic and work-related information was collected for each person age eighteen or over. In the above example, the primary family unit would consist of two persons, the husband and wife.

The structure of the data set is summarized below:

| | |
|-------------------------------|-------|
| Households | 3,440 |
| Multifamily-unit households | 846 |
| Single-family-unit households | 2,594 |
| Family units | 4,605 |
| Primary family units | 3,440 |
| Secondary family units | 1,165 |
| Persons | 6,578 |

The basic unit of observation used in the estimations below is the family unit. An interfamily transfer takes place if income or gifts in kind are transferred from one family unit to another. Thus, for example, a cash transfer from father to twenty-year-old son living at the same address, for example, would be recorded as an interfamily transfer. Transfers given by one family unit to an individual outside the sample or received from an individual outside the sample would also be recorded as an interfamily transfer.

For those family units that are sharing a residence with other family units, there may be many transfers in kind that will not be recorded as interfamily transfers. Respondents were asked to report the value of free usage of goods—property or services received from or given to other family units—but it is unclear whether the typical respondent would include the rental value of housing in a shared living arrangement as “use of property” because respondents were not explicitly asked about housing. Similarly, respondents were asked to report cash contributions toward food consumed, but not the value of meals given or received.

It is not possible, in general, to determine the exact source of a transfer received or the exact destination of transfers given. Individuals giving transfers were asked only to identify the generation of the recipient, and all recipients were asked only to identify the generation of the giver. Secondary family units can be matched to their primary counterparts to construct complete households, but a matching of sources and destinations of transfers is not possible.

Despite the lack of information about sources and destinations of interfamily transfers, some evidence shows that much of the *interfamily* transfers reported might also be *intrahousehold* transfers. Those households containing more than one-family units (multifamily-unit households) represent 25 percent of all households in the sample (846 of the 3,440 households). These multifamily-unit households account for 53 percent of the dollar amount of total transfer dollars reported given and 61 percent of total transfer dollars received.¹⁰

10. These percentages were calculated in the following way: Transfer dollars reported given, aggregated over all family units in the PCPP survey, amounted to \$1,008,927 (not annualized). Transfer dollars given, aggregated over all family units that belong to multifamily-unit households equaled \$532,196 (not annualized). The latter aggregate is 53 percent of the former. The aggregate for transfers received among all family units in the sample is \$902,233 (not annualized, and monthly transfer amounts are added to eight-month items). The equiv-

13.3.2 Interfamily Transfers

First, the behavior of all givers and all recipients will be analyzed separately. Then, results from a matched subsample of secondary and primary family units will be presented. The matched subsample will be examined in order to determine whether characteristics of primary family units are associated with transfers received by secondary units. Definitions of variables that will be used in the estimations are given in table 13.11.

The theoretical section above relates transfers to the lifetime wealth of givers and recipients and the income of recipients. The empirical specification below suffers from two limitations, which preclude the estimation of a transfer function that is precisely analogous to that derived in the model. First, donors and recipients of transfers cannot be matched. Second, since cross-sectional data are used, the lifetime wealth of individuals in the file cannot be measured. Instead, components of a family unit's balance sheet are used as indicators of the wealth of the family unit. Education levels should also be correlated with lifetime wealth.

Both the giver and recipient equations are represented as Tobit models.¹¹ For givers the dependent variable is equal to gross transfers given (*TRAN*). In equation (12) the variable *TRAN* is equal to zero for all observations for which a transfer was not given. Among the 4,605 family units, 727 gave interfamily transfers. The Tobit equation for givers is specified as follows:

$$\begin{aligned}
 (12) \quad TRAN &= a_0 + a_1 HEDUC + a_2 SPEDUC + a_3 AGE \\
 &+ a_4 (AGE)^2 + a_5 FEMALE + a_6 KIDS \\
 &+ a_7 MARRIED + a_8 DUAL + a_9 INCOME \\
 &+ a_{10} FINC + a_{11} RETINC + a_{12} WELFINC \\
 &+ a_{13} FINASST + a_{14} TANASST \\
 &+ a_{15} INHEREXP + a_{16} MORTDEBT \\
 &+ a_{17} DEBTTO + a_{18} MORTOTHR - u_1 \\
 &= \alpha X - u_1, & \text{if } \alpha X - u_1 > 0, \\
 TRAN &= 0, & \text{if } \alpha X - u_1 \leq 0.
 \end{aligned}$$

alent figure for all family units that belong to multiunit households is \$552,993. The latter figure is 62 percent of the former.

11. The Tobit model can be considered as a restricted version of a more general model in which the decision to give a transfer and the transfer amount are determined separately (see Heckman 1979). Suppose, for example, that the decision to give a transfer is determined by a positive value for the latent variable T_1 , where $T_1 = \beta_1 X_1 - u_1$, and the transfer amount is determined by $T_2 = \beta_2 X_2 - u_2$. The Tobit specification amounts to the restriction that $u_1 = u_2$, $X_1 = X_2$, and $\beta_1 = \beta_2$. Alternatively, the process could be modeled as a two-stage procedure in which the decision to give is estimated by probit and the transfer amounts are estimated using Heckman's procedure for correcting censoring bias. This procedure was implemented using the same vector X in both the probit and the transfer equation. The instrument for the selection correction (inverse Mills ratio) was highly collinear with the other regressors in the transfer equations, resulting in unstable estimates. The two-equation model is tractable only if certain variables are excluded from the transfer amount equation. Rather than impose these restrictions, we instead impose the restriction that $\beta_1 = \beta_2$.

Table 13.11 Definitions of Variables

| Mnemonic | Variable |
|-------------------------|--|
| <i>HEDUC</i> | Years of education, head. |
| <i>SPEDUC</i> | Years of education, spouse. |
| <i>AGE</i> , $(AGE)^2$ | Age of head, age of head squared. |
| $(HEDUC) \times (AGE)$ | Interaction between years of education of head and age of head. |
| $(SPEDUC) \times (AGE)$ | Interaction between years of education of spouse and age of spouse. |
| <i>FEMALE</i> | Dummy variable = 1 if sex of head is female. |
| <i>KIDS</i> | Number of children under the age of eighteen in family unit. |
| <i>MARRIED</i> | Dummy variable = 1 if head is married. |
| <i>DUAL</i> | Dummy variable = 1 if dual-earner family unit (i.e., positive wage rates for both head and spouse). |
| <i>INCOME</i> | Total labor income of family unit, first eight months of 1979, measured in 1979 dollars. |
| <i>HWAGE</i> | Hourly wage rate, head of the family unit, 1979. |
| <i>SWAGE</i> | Hourly wage rate of spouse, 1979. |
| <i>FINC</i> | Income from financial assets of the family unit, first eight months of 1979, measured in 1979 dollars. |
| <i>RETINC</i> | Public and private retirement income of the family unit, first eight months of 1979, measured in 1979 dollars. |
| <i>WELFINC</i> | Income from government transfer payments plus private disability payments, alimony, and child support, first eight months of 1979, measured in 1979 dollars. |
| <i>FINASST</i> | Value of stock of financial assets of the family unit, measured in 1979 dollars. |
| <i>TANASST</i> | Value of stock of tangible assets of the family unit measured in 1979 dollars. |
| <i>INHEREXP</i> | Value of expected inheritance, undiscounted, 1979 dollars. |
| <i>MORTDEBT</i> | Stock of outstanding mortgage debt for home, 1979 dollars. |
| <i>DEBTO</i> | Stock of outstanding debts owed to other family members, 1979 dollars. |
| <i>MORTOTHR</i> | Stock of outstanding mortgage debt for properties other than home, 1979 dollars. |
| <i>TRAN</i> | Interfamily transfers given, first eight months of 1979, measured in 1979 dollars. |
| <i>TRANREC</i> | Interfamily transfers received first eight months of 1979, including monthly items, measured in 1979 dollars. Inter vivos transfers only. Bequests are excluded. |
| <i>TOTASST</i> | Total assets; the sum of financial and tangible assets. |

The Tobit estimates of equation (12) are presented in table 13.12. Transfers given are positively related to the family unit head's education, labor and retirement income, and assets. The income elasticity of transfers given, evaluated at mean argument values among givers, is 0.82. The elasticity of transfers given with respect to financial and tangible assets (evaluated at giver means) is .16 and .19 respectively. Note that the esti-

Table 13.12 Tobit Estimates, Transfers Given (*TRAN*)

| Variable | Coefficient | t-statistic |
|--------------------------|-------------|-------------|
| <i>INTERCEPT</i> | -8880.10 | -11.96 |
| <i>HEDUC</i> | 198.65 | 5.47 |
| <i>SPEDUC</i> | -18.88 | -0.36 |
| <i>AGE</i> | 69.46 | 2.20 |
| <i>(AGE)²</i> | -0.56 | -1.63 |
| <i>FEMALE</i> | -142.60 | -0.73 |
| <i>KIDS</i> | -163.78 | -1.85 |
| <i>MARRIED</i> | -104.56 | -0.16 |
| <i>DUAL</i> | 288.48 | 0.96 |
| <i>INCOME</i> | 0.053 | 7.51 |
| <i>FINC</i> | -0.028 | -1.45 |
| <i>RETINC</i> | 0.057 | 2.00 |
| <i>WELFINC</i> | -0.072 | -0.92 |
| <i>FINASST</i> | 0.0077 | 5.47 |
| <i>TANASST</i> | 0.0045 | 4.56 |
| <i>INHEREXP</i> | 0.0035 | 2.70 |
| <i>MORTDEBT</i> | -0.0139 | -2.13 |
| <i>DEBTTO</i> | 0.0515 | 2.01 |
| <i>MORTOTHR</i> | -0.0101 | -1.29 |
| Limits | | 3878 |
| Nonlimits | | 727 |
| <i>ln L</i> | | -8029 |

mated coefficient for financial income is negative and significant at the margin of the .10 level. At reasonable values for the rate of return on financial assets the estimated net impact of an increase in financial wealth is positive, but a higher rate of return on financial assets is associated with a decrease in transfers given. The effect of an increase in expected inheritance (*INHEREXP*) on transfers given is positive, but the elasticity of transfers given with respect to *INHEREXP* evaluated among givers is small. A 10 percent increase in *INHEREXP* is associated with a 0.3 percent increase in transfers given. The two liability measures, *MORTDEBT* and *MORTOTHR*, enter the Tobit equation with negative signs, and the coefficient for *MORTDEBT* is significant at the .05 level. The positive coefficient for *DEBTTO*—the stock of outstanding debt owed to other family members—suggests that some of the transfers given might be repayments for past transfers received.

Gross transfers given increase at a decreasing rate over most of the life cycle. The difference, for example, between predicted transfers given at age fifty and transfers given at age forty is \$191. The age profile of transfers given peaks at age sixty-two. Beyond age sixty-two the effect of age on transfers given is negative. The age variable captures the effects of some important omitted variables in the transfer equation. None of the characteristics of recipients or potential recipients are included in the

equation for transfers given. The estimated age profile of transfers suggests that as households age, the scope for giving continually widens until the family unit head approaches retirement age.

The level of education of the head of the family unit is an important determinant of transfers. An additional year of education for the head adds an estimated \$199 to gross transfers given. Since educational transfers are included among the various categories of transfers given, education in part may proxy the desire of more educated households to make transfers in the form of human capital investment. Higher levels of education should in addition be associated with increased lifetime wealth, however. If households making educational transfers are deleted from the sample, education is still positively related to transfers given (estimated equation not reported). An additional year of head's education raises noneducational transfers given by \$170. The education level of the spouse enters the transfer equation (table 13.12) with a negative sign, but is statistically insignificant.

Finally, the dummy variables for marital status (*MARRIED*), sex of family unit head (*FEMALE*), and multi-earner status (*DUAL*) are each statistically insignificant in the estimated equation for gross transfers given. An increase in the number of children under age eighteen in the family unit is associated with a decline in transfers given to other family units.

13.3.3 Transfers Received

The value of all inter vivos transfers received¹² is expressed as

$$\begin{aligned}
 (13) \quad \text{TRANREC} &= b_0 + b_1 \text{HEDUC} + b_2 \text{SPEDUC} \\
 &+ b_3 ((\text{HEDUC}) \times (\text{AGE}) + b_4 (\text{SPEDUC}) \times (\text{AGE}) \\
 &+ b_5 \text{AGE} \\
 &+ b_6 \text{FEMALE} + b_7 \text{KIDS} + b_8 \text{MARRIED} \\
 &+ b_9 \text{INCOME} + b_{10} \text{FINC} + b_{11} \text{RETINC} \\
 &+ b_{12} \text{WELFINC} + b_{13} \text{FINASST} + b_{14} \text{TANASST} \\
 &+ b_{15} \text{INHEREXP} + b_{16} \text{MORTDEBT} + b_{17} \text{DEBTTO} \\
 &+ b_{18} \text{MORTOTHR} - u_2 \\
 &= \beta Y - u_2, && \text{if } \beta Y - u_2 > 0, \\
 \text{TRANREC} &= 0, && \text{if } \beta Y - u_2 \leq 0.
 \end{aligned}$$

Estimates of equation (13) are presented in the first column of table 13.13. Of particular interest are the coefficients for the income variables—*INCOME*, *FINC*, *RETINC*, and *WELFINC*. The coefficient on labor income (*INCOME*) is negative and statistically significant at the .05 level. The elasticity of transfers received (evaluated at recipient argument

12. Bequests are excluded, and transfers from the monthly categories are included along with those of the eight-month categories. No attempt is made to put the monthly and eight-month transfers on an equivalent time scale.

Table 13.13 Tobit Estimates, Transfers Received (TRANREC)

| Variable | Transfers Received | | Noneducational Transfers Received | |
|-------------------------|--------------------|---------------|-----------------------------------|---------------|
| | Coefficient (1) | t-stat (2) | Coefficient (3) | t-stat (4) |
| <i>INTERCEPT</i> | -6207.80 | -8.94 | -4200.62 | -6.67 |
| <i>HEDUC</i> | 445.80 | 8.21 | 251.57 | 5.08 |
| <i>(HEDUC) × (AGE)</i> | -7.43 | -6.55 | -4.42 | -4.28 |
| <i>SPEDUC</i> | 119.08 | 2.59 | 109.30 | 2.59 |
| <i>(SPEDUC) × (AGE)</i> | -0.25 | -0.46 | -0.44 | -0.87 |
| <i>AGE</i> | 45.86 | 3.48 | 21.05 | 1.75 |
| <i>FEMALE</i> | 492.32 | 3.79 | 461.49 | 3.82 |
| <i>KIDS</i> | -105.07 | -1.58 | -62.04 | -1.04 |
| <i>MARRIED</i> | -1943.09 | -3.50 | -1820.06 | 3.62 |
| <i>INCOME</i> | -0.014 | -2.17 | — | — |
| <i>HWAGE</i> | — | — | -8.74 | -0.59 |
| <i>SWAGE</i> | — | — | 2.51 | 0.13 |
| <i>FINC</i> | 0.035 | 2.10 | 0.036 | 2.38 |
| <i>RETINC</i> | 0.039 | 1.50 | 0.022 | 0.95 |
| <i>WELFINC</i> | 0.100 | 2.26 | 0.090 | 2.13 |
| <i>FINASST</i> | -0.0004 | -0.63 | -0.0020 | -1.22 |
| <i>TANASST</i> | 0.0005 | 0.51 | 0.0006 | 0.70 |
| <i>INHEREXP</i> | 0.0023 | 2.43 | 0.0021 | 2.47 |
| <i>MORTDEBT</i> | -0.0075 | -1.36 | -0.0061 | -1.22 |
| <i>DEBTO</i> | 0.0067 | 0.30 | 0.0085 | 0.44 |
| <i>MORTOTHR</i> | -0.0023 | -1.96 | -0.0196 | -1.92 |
| Limits | | 3785 | | 3846 |
| Nonlimits | | 840 | | 759 |
| <i>ln L</i> | | -8668 | | -8002 |

means) is $-.14$. The estimate of the *INCOME* coefficient offers some support for the hypothesis that one of the functions of interfamily transfers is to redistribute resources towards family units with low-income levels. Taken at face value, the estimate appears to concur with the findings of Tomes (1981) for inheritance data.

The estimate for the coefficient on income should be regarded with some caution, however. First, the variable *TRANREC* contains transfers received for education, and these transfers are used to subsidize investment in human capital, rather than current consumption. Average earnings among those receiving transfers for education are lower than those of other recipients, so the negative income coefficient is in part picking up the relationship between proportions of time devoted to investment in human capital and transfers received for education. Second, if transfers received cause an increase in the demand for leisure, then the negative coefficient for income could in part reflect work disincentives associated with

transfer receipts.¹³ Each of these problems is addressed in an alternative specification of the equation for transfers received in which (1) educational transfers received are subtracted from *TRANREC*, and (2) wage rates for head and spouse (*HWAGE* and *SWAGE*) are substituted for family-unit income. The results are reported in the second column of table 13.13. The coefficient for *HWAGE* is of anticipated sign, but is not statistically significant.

A further finding associated with the connection between transfer receipts and income is the positive signs of estimated coefficients for other sources of income in the transfer equation. This finding is contrary to the theoretical prediction of the model. The other sources of income—financial income (*FINC*), retirement income (*RETINC*), and transfer income from public and private sources (*WELFINC*)¹⁴—are each positively associated with interfamily transfers received. One possible reason why financial income is positively related to transfers received is that some transfers (e.g., securities, cash) would be expected to produce financial income. The positive coefficient for *RETINC* suggests that retirement status is associated with increases in transfers received.

The coefficient of *WELFINC* is difficult to sign a priori in this single equation specification. Though *WELFINC* represents current income flows that the theoretical model predicts would “crowd out” interfamily transfers, the variable also acts as a surrogate for a host of other effects that are not measured in the data set. Eligibility for income from disability plans or food stamps implies that the family unit may be experiencing some financial distress that is not measured by other variables included in the equation.

The amount of transfers received rises with education. While education levels can be interpreted in part as indicators of lifetime earnings of individuals, the relationship between education levels and transfers received is more complex in the estimated equations. Most importantly, educational transfers are included among transfers received in the first column of table 13.13. To deal with the problem of spurious correlation between transfers received and education levels, years of education was interacted with age. Further, educational transfers were deleted from transfers received in the equation presented in the second column of table 13.13.

The estimates of the effects of education on noneducational transfers received indicate a \$1,006 difference between predicted noneducational transfers for a family unit headed by a thirty-year-old college graduate as opposed to a thirty-year-old high school graduate. The same calculation

13. Tomes 1981 raises this issue, but finds no evidence of work disincentive effects due to inheritance.

14. The variable *WELFINC* includes AFDC and other public assistance income, food stamps, Supplementary Social Security Income, as well as income from private disability plans, alimony and child support, and other conditional transfer income.

using spouse's education indicates a predicted difference in noneducational transfers received of \$437.

Estimated transfers decline with age. The age effect of noneducational transfers evaluated at twelve years of schooling is estimated at $-\$32.35$ for each additional year.¹⁵ The dummy for marital status indicates that estimated interfamily transfers received are much smaller for married individuals. Interfamily transfers are primarily targeted at family units in which the head is not married.

Estimated transfer receipts are higher for family units headed by females. Female status raises estimated transfers by almost \$500 (table 13.13, cols. 1 and 2).

The influence of the asset variables (*FINASST*, *TANASST*) on transfers received is negligible; the coefficient for *FINASST* is of expected sign but not statistically significant. Family units that expect larger inheritances receive more inter vivos transfers. The causality may run the other way, however, if family units use current values of inter vivos transfers to gauge the expected value of their inheritance.

In sum, the estimates offer some support for the theoretical model above. Inter vivos transfers are targeted towards young, unmarried family units. Controlling for other factors that influence transfers, female-headed family units receive higher transfer amounts. The evidence is far from conclusive, however. Most importantly, the impacts of changes in wage rates on the level of noneducational transfers received are not statistically different from zero.

13.3.4 Primary and Secondary Family Units

A quarter of the 4,605 family units are secondary family units. Information for each secondary family unit can be matched with information from its primary counterpart. Aside from the matching aspects of the sample of secondary family units, these family units are different from the others because they are living in the same dwelling with a primary family unit. The purpose of this section is twofold. First, transfers received will be analyzed in the matched sample, where information is given both about primary and secondary units. Transfers received by secondary units will be expressed as a function of the characteristics of secondary units and the characteristics of the primary units with which they are matched. Second, an equation for transfers received will be estimated among the sample of all primary units, and this equation will be compared with the equation for the secondary units.

The Tobit equations for transfers received for each family-unit type are presented in table 13.14. Transfers received are limited to noneducational

15. A parabolic age profile was estimated, but the second-order term was not significantly different from zero.

Table 13.14 Tobit Estimates, Noneducational Transfers Received

| Variable | Secondary Family Units | | | | Primary Family Units | |
|------------------|------------------------|---------------|--------------------|---------------|----------------------|---------------|
| | Coefficient (1) | t-stat (2) | Coefficient (3) | t-stat (4) | Coefficient (5) | t-stat (6) |
| <i>INTERCEPT</i> | -2584.40 | -4.17 | -1499.12 | -3.13 | -3302.44 | -6.43 |
| <i>HEDUC</i> | 10.63 | 0.31 | 55.86 | 1.73 | 121.30 | 4.03 |
| <i>AGE</i> | -31.52 | -4.95 | -30.50 | -4.85 | -27.01 | -5.14 |
| <i>FEMALE</i> | 452.11 | 3.08 | 405.98 | 2.75 | 606.43 | 3.42 |
| <i>MARRIED</i> | -451.69 | -0.92 | -477.08 | -0.98 | -582.98 | -2.93 |
| <i>INCOME</i> | 0.026 | 2.11 | 0.021 | 1.71 | -0.012 | -1.72 |
| <i>FINC</i> | 0.140 | 3.33 | 0.126 | 3.16 | 0.011 | 0.30 |
| <i>RETINC</i> | 0.195 | 2.01 | 0.182 | 1.87 | 0.019 | 1.03 |
| <i>WELFINC</i> | 0.073 | 1.45 | 0.061 | 1.19 | 0.090 | 1.60 |
| <i>TOTASST</i> | -0.0014 | -0.51 | -0.0004 | -0.16 | -0.0003 | -0.33 |
| <i>HEDUCP</i> | 81.38 | 2.72 | | | | |
| <i>AGEP</i> | 11.94 | 2.01 | | | | |
| <i>INCOMEP</i> | 0.007 | 1.26 | | | | |
| <i>FINCP</i> | -0.029 | -1.09 | | | | |
| <i>RETINCP</i> | -0.105 | -2.10 | | | | |
| <i>WELFINCP</i> | -0.012 | -0.19 | | | | |
| <i>TOTASSTP</i> | 0.0008 | 1.04 | | | | |
| <i>N</i> | | 1165 | | 1165 | | 3440 |
| Limits | | 832 | | 832 | | 3014 |
| Nonlimits | | 333 | | 333 | | 426 |
| <i>ln L</i> | | -3315 | | -3327 | | -4667 |

transfers in order to avoid the possibility of a spurious relationship between educational transfers and recipients' income, as noted above. The equations that are estimated are simplified variants of equation (13). The equation for transfers received among secondary units, including characteristics of their primary-unit members, is presented in columns (1) and (2) of table 13.14. The variables for primary units are denoted by the suffix *P*. The variable *HEDUCP*, for example, denotes years of education for the head of the primary family unit for which there is also a secondary unit present.

When the sample is restricted to secondary family units, *INCOME* is estimated to have a positive effect on transfers received. This finding is contrary to the predictions of the model. Actual transfers received by individuals in the same household may include services in kind that are not recorded in the transfer items measured in the PCPP data. If so, then there may be greater scope for mismeasurement of actual transfers received among secondary family units compared to primary family units.¹⁶

In columns (3) and (4) of table 13.14, transfers received by secondary units are estimated when characteristics of their associated primary units are permitted to vary. The reason for this experiment is that primary family units may be a source of many transfers received by their secondary counterparts. If this is true we can assess the possible "omitted variable bias" that may affect the recipient equations when characteristics of donors are not available. The estimated coefficients are similar, except that the coefficient for education for the secondary family unit is much larger when primary-unit variables are omitted from the equation. The estimated effects of own-education levels on transfers received in the previous section (table 13.13) may therefore in part be picking up the effects of donors' education on transfers.

The estimated equation for transfers received among primary households is presented in columns (5) and (6) of table 13.14. There are three major differences between the sample of primary family units and secondary family units with respect to transfers received. First, the proportion of recipients among secondary family units is much larger than among primary family units (29 percent versus 12 percent). Second, labor income among primary units is inversely related to transfers received. The elasticity of noneducational transfers received with respect to income (evaluated at recipient means) is equal to -0.2 , and the estimated income coefficient is significant at the 0.1 level. Finally, the influence of education on transfers received is larger for primary units compared to secondary units.

The estimates of transfers received in the sample of primary family units tend to confirm the predictions of the theoretical model. If we inter-

16. In addition, a Tobit equation was estimated in which recipients were redefined as those receiving transfers in excess of transfers they gave. In this specification, the effect of income on these net transfers received is not significantly different from zero.

pret years of education as an indicator of lifetime wealth, the positive relationship between transfer receipts and education combined with the inverse relationship between income and transfer receipts indicate that, among primary family units, interfamily transfers serve a compensatory function that increases with lifetime wealth.

13.3.5 Conclusion

In this study we have attempted to gain understanding of the disposition of inter vivos transfers by means of data that measure a variety of such transfers. While the data set offers a unique opportunity to explore this aspect of economic behavior, the data have significant limitations that need to be emphasized. First, the data do not permit matching of transfer givers with transfer recipients. Second, while the theory is cast in terms of lifetime wealth, we are forced to use crude proxies for wealth in the empirical implementation.

Despite these limitations, the data provide qualified support for a model of interfamily transfers characterized by altruism in consumption. Inter vivos transfers tend to originate in older, high-income family units and are primarily targeted towards younger, single individuals. A positive female-male differential exists with respect to transfers. Interfamily transfers tend to narrow relative income inequality.

The data, however, do not provide the theoretical model with an entirely clean bill of health. Financial income is positively related to transfers received, and evidence for the relationship between earnings and transfers received is mixed. Indeed, the model predicts a dollar-for-dollar inverse relationship between income and transfers, and this hypothesis is clearly rejected by the data.

Despite some of the limitations of this study, we tentatively conclude that the direct examination of inter vivos transfers afforded by the PCPP data reinforces a solicitous view of the role of these transfers. This initial exploration generally supports the view that such interfamily transfers are substantial, altruistic, and egalitarian in direction.

Appendix

Interfamily Transfer Data

The PCPP survey respondents were asked questions about interfamily transfers in the following way. First, the respondents were reminded about the definition of the family unit. The person taking the survey began the section on interfamily transfers with the following statement: "Now I would like to talk about contributions toward your family expenses from someone other than a member of your family. Remember

that your family only includes you [and if appropriate], your husband/wife, and any children under eighteen-years-old who usually live at home.”

Second, individuals were asked to report monthly transfers received (four categories), transfers received over the previous eight months (ten categories), and transfers given over the previous eight months (nine categories). An example of a question about monthly transfer receipts taken from the survey is the following: “Has anyone outside your family made contributions toward your mortgage payments or rent in the past month?” The respondent was then asked to report the number of people from whom he/she received such transfers, the relationship of the donors to him/her (e.g., father, sister), and the amounts contributed by each person. For recipients with multiple donors, the direction of the transfer is determined by the generation of the donor who gives the most.

An example of a question dealing with eight-month transfers received is the following: “Since January 1, 1979 has your family received any contributions toward college education expenses from anyone outside your family?” The survey was taken in August 1979, so this question covers an eight-month period. The respondent was then asked to report generations of donors and transfer amounts in the same way as was done with monthly categories.

Finally, the survey respondents were asked to report on transfers given. An example of a survey question for transfers given is the following: “Since January 1, 1979 has your family contributed to bill payments for such things as medical, dental and legal fees, vacations, clothes, and so on, to anyone outside your family?” Donors were asked to report the number of recipients, the relationship of each recipient to them, and the transfer amounts given.

Other data sets dealing with inter vivos interfamily transfers of income exist (see, for example, Lampman and Smeeding 1983). Differences in variable definitions and organization exist between the PCPP data set and others, however, so that ad hoc comparisons between the PCPP data set and others would not be very illuminating. The ultimate reliability of the interfamily transfers depends on the accuracy with which family units responded to the survey and their level of understanding of the survey questions. While this is a problem that affects most other data sets based on household surveys, the problem of survey response error is likely to be particularly acute for the PCPP survey. Survey respondents may be likely to overestimate their generosity and underestimate their dependence on other family units. The average value reported for durables given, for example, was much higher than the average value reported for durables received (tables 13.3 and 13.4). In addition, the PCPP survey was time consuming and complex. Respondents were asked a long list of questions dealing with their balance sheets, pension programs, earnings, other in-

come, and demographic information. These observations suggest that the data for interfamily transfers in the PCPP survey must be interpreted with care.

Respondent Selection

Sampling and interviews were conducted by Market Facts, Incorporated. Stanford Research Institute (SRI) created the data tapes from the survey results. An original random sample of 6,384 dwelling units was selected, and this sample was designed to reflect a cross-section of the U.S. population. Of the 6,384 dwelling units, 829 (13 percent) were either vacant or not accessible. Of the remaining 5,555 dwelling units, 1,974 (35.5 percent) refused to participate in the survey. The remaining dwelling units contained data for 3,581 primary units and 1,172 secondary units. A portion of these units were judged by Market Facts to be unusable, leaving a final sample of 4,605 family units (3,440 primary family units and 1,165 secondary family units).

Imputations

Some of the values for interfamily transfers were imputed by SRI. Of the 728 family units reporting that they gave an interfamily transfer, 64 were unable to report the amount given for one or more transfer categories. Amounts given were imputed by SRI from a regression on income and demographic variables for those reporting amounts given (estimated equation not available in the documentation). Of the 840 family units reporting that they received an interfamily transfer, 141 were unable to report amounts received for one or more of the transfer categories. SRI imputed amounts received for these observations by using the same imputation method for amounts given.

In addition, a portion of the families indicating asset holdings in various categories did not report values for those assets. Of the 2,812 families reporting that they had balances in savings accounts, for example, 185 did not report the value of these assets. SRI imputed values for these variables using methods similar to those used for imputing interfamily transfers. However, SRI also included a wealth variable in the data set (*WEALTHQ*) which was constructed only from nonimputed values for assets.

To check whether or not the results reported above were sensitive to these imputations, equations (12) and (13) were reestimated with two modifications. First, those observations with imputed values for interfamily transfers were deleted from the sample. Second, *WEALTHQ* was substituted for the asset and debt variables in the estimating equations. The results were similar to those reported in tables 13.12 and 13.13. In particular the elasticity of transfers given with respect to *WEALTHQ* (evaluated among givers) in the reestimated equation is .17. In comparison, estimated transfer elasticities with respect to *FINASST* and *TANASST*

from table 13.11 above are .16 and .19 respectively. In addition, income elasticities of transfers given and received in the reestimated equations were similar to those reported in tables 13.12 and 13.13, cols. (1) and (2). The estimated income elasticity of transfers given in the reestimated equation was 0.98 compared to 0.82 in the equation presented in table 13.12. The elasticity of transfers received with respect to income was -0.20 in the reestimated equation compared to -0.14 in the equation presented in table 13.13, cols. (1) and (2).

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Comment Paul L. Menchik

In recent years a number of economists have tried to find the determinants and economic effects of private transfers. In the past the focus has been on charitable contributions of time and money, and on bequests. Very lit-

tle work has been done on inter vivos transfers—gifts between living people—presumably due to the lack of data. The chapter by Cox and Raines, which focuses on this issue, is an especially useful start at filling this gap in the literature.

The chapter employs a sample from the President's Commission on Pension Policy—Household Survey of 4,605 respondents. Although the survey was plagued by problems of nonresponse (in 13 percent of the dwelling units selected a respondent could not be located, and in 35 percent of the remaining dwelling units no respondent would participate in the survey), this survey represents one of the few available data sets containing figures on inter vivos transfers. The chapter first presents some descriptive statistics about those who give and those who receive, then provides an analytical model of the process of transfer from (largely) parent to child, and finally offers some econometric results in support of the model. I will discuss the chapter in the same order.

The PCPP survey obtained data from 4,605 families concerning sources of income, savings, and public and private transfers—gifts as well as inheritance received. The survey period is the first eight months of 1979. Respondents were asked if they made or received any contributions toward their expenses from outside their immediate family, which is defined as parents and any children under the age of eighteen living at the same address. Unfortunately the only identification of the recipient (source) of the transfer (except for a very nonrandom subsample) is the generation of the party, whether older, younger, or equal. Also transfers to those under eighteen and transfers to spouses were not counted.

Over the eight-month survey period 15.8 percent of the families report giving and 18.3 percent report receiving one or more transfers. Of these people about one-quarter report *both* giving and receiving a transfer.

The size distribution of transfers is rather concentrated over this short period, i.e., over half the transfers received (and given) were received (or given) by the highest 10 percent in the recipient (or giver) distribution.

There is some evidence that transfers received might be underreported relative to transfers given (it is better to report giving than receiving)—a result also found by James Morgan (1984). It appears that while most transfers flow to younger generations, 27 percent go to the same generation and only 9 percent are given to older generations.

If we compare those who make a transfer with those who receive one we see the givers are older, wealthier, less likely to be female heads, more likely to have labor earnings, and more likely to have higher earnings over the eight-month survey period. Also, the group labeled “others” (nongivers and nonrecipients) are older than the recipients. “Others” are more likely to be retired and to have earnings slightly higher than the recipients and lower than givers. What struck me was that although the recipients were younger and had lower current earnings than the givers, they were more

like the givers than the “others” in several significant ways—years of schooling, expected inheritance, and percentage with financial income. Although the authors want to conclude that private transfers are egalitarian, the fact that the transfers go from the well schooled to the well schooled, from the wealthy to those expecting three times the inheritance of the “others” supports a different hypothesis. That is, transfers may go to those whose transitory income is low relative to life cycle and/or permanent income. That transfers are equalizing only in the narrow sense that they smooth instabilities out or allow consumption earlier in the life cycle than warranted by earnings alone (the way a well-functioning capital market would) is also an allowable inference from this evidence. Furthermore, that about one-fourth of those either giving or receiving did *both* supports the view of transfers as *instability* reducing as opposed to lifetime *inequality* reducing.

Using the variance of log income as a measure of inequality, the authors calculate the measure for those making a transfer, with the value of the transfer either added to or subtracted from income, then excluded. The measure is lower *post-* than it is *pretransfer*. Second, they compute the measure for recipients; once again the measure is lower (much lower) *post-* than *pretransfer*. Finally they compute the measure for all givers and recipients and for the entire sample including “others.” As before, the measure *post* implies less inequality than the measure *pre*. Although the authors interpret this to mean that transfers reduce relative income inequality, some comments are in order.

First, the authors deduct or add the asset value of the transfer from the flow of labor earnings (or total income), not from the flow equivalent. If one transfers an asset to another, does it make sense to call earnings—plus or minus the asset—*net* labor earnings? (This problem is avoided by using the flow equivalent of the transfer as was done for inheritance received.) This makes sense if the flow is permanent, but with so many people both making *and* receiving transfers, can this assumption be expected to hold? Second, since the income measure is based on transitory income (eight months), the transfers may equalize only in the sense that bank loans equalize, e.g., reducing instability not permanent inequality of income. Finally, the transfers may not reduce *lifetime* inequality but (as the model in the next section reveals) allow consumption earlier in the life cycle than current earnings allow. Hence transfers to those early in their life cycle may *appear* to equalize income because recipients are in their relatively lower earning years, but may do the contrary.

The authors present an optimal control model of an overlapping generation world. Each person has a child phase and then a parent phase, with parents and children coexisting in time. A joint utility function is maximized with *B*—the weight put on log child relative to log parent consumption during the half-life when they both are alive. This specification

of the utility function differs from the standard intergenerational model where the lifetime (not half-life) consumption or utility of parent and child is in the maximand.

The growth path of earnings is exogeneous, and, most critically, children can neither borrow nor lend. The behavior is referred to as “altruistic,” but this means only that joint utility maximization is pursued; a B of zero (which is allowed by the model) implies that children will starve for the benefit of their parents. Their model predicts that the ratio of child-to-parent consumption, at any point of time, is B . The comparative static results—equation (10)—predicts transfers positively related to the wealths of parents and children and negatively related to the child’s current earnings. However, wealth is defined as the discounted sum of earnings over the period. Hence for a given growth rate in earnings one cannot take the partial derivative of wealth, holding earnings constant; if one moves, the other must move as required by the identity defining wealth.

The point of the model, which is a valuable one, is that if children can neither borrow nor lend, i.e., are totally constrained by current earnings, their parents act as the bank allowing a child with growing earnings to consume more than current earnings warrant. Children are therefore able to get around this capital constraint by “banking” with their parents like a child actor might. Whether this severe constraint for children is of sufficient importance to explain all transfers is another matter. Note that the model differs from other “altruistic” models in the literature that base transfers on differences in lifetime (not half-life) resources or consumption between generations. Hence it is by no means clear that transfers equalize *lifetime* consumption, but rather half-life consumption. With secularly growing earnings this mechanism would likely dis-equalize lifetime income since parents would be transferring resources to a younger cohort that is poorer during the period of overlap, but richer than they over a lifetime accounting period.

The authors estimate Tobit models of transfers made and transfers received. They use the data set of 4,605 family units divided into primary and secondary, with (I think) the presence of the marital couple denoting primary and single individuals as secondary when all live at the same address. (It’s not clear what is done when two married couples live together.) A Tobit regression of transfers made is presented in table 13.11 as a function of eighteen variables. Transfers received is positively related to transitory income with an elasticity of .82. Martin David and I (Menchik and David 1983) found that the earnings elasticity of bequests made could not be represented by a constant, with a markedly higher elasticity at higher rather than lower income. I would like to see if, for example, using a spline function, the same is true for gifts.

They also find that gifts made vary directly with assets but, interestingly, are negatively related to financial income. This finding is consistent with a

strategy of giving away one's low yielding but greatly appreciated assets for tax purposes. Since the taxable basis is not stepped up for gifts, but is for bequests, it is certainly cheaper to give an appreciated asset rather than cash to someone in a lower tax bracket. Hence this behavior is consistent with tax avoidance. The results also show a positive and significant effect of education and age (up to age sixty-two) on transfers made.

Next they present, in table 13.12, regressions of both total transfers (excluding inheritance) received and noneducational transfers received. In the total equation, transitory income is used; in the second, wage rates are used as measures of the recipients' current position. First, years of education is a positive determinant of transfers received in both equations. Second, current income has a negative sign in the first equation which the authors claim supports an egalitarian view. (The authors note that since those currently attending school would have a low labor supply, this finding might be a spurious one.) In the second equation, noneducational transfers are regressed on wage rate not income. The sign is negative and insignificant for heads and positive and insignificant for spouses, which is counter to the model. It seems to me that the regressors were entered in a backwards fashion—that wage rate should be in the first and income in the second regression if the time cost of being a student is to be adjusted for. Transfers received rise with age and expected inheritance.

Finally, regressions for family units sharing living quarters are presented. The results are mixed on the sign of own income—positive for secondary units and negative for primary units.

The chapter is a start at filling an important gap in the literature. I would quibble with the authors' conclusion that the results supported an "altruistic, egalitarian" view of transfers. Transfers are made from and to well-educated people and (as in the model) can be used to get around an imperfect capital market, but may not be equalizing in a lifetime sense. Hence I would argue that the results more strongly support a "shock absorber" or "young Rockefeller" model rather than an equalizing or compensating one. Without data on lifetime earnings, their case cannot be made.

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