# INTERGENERATIONAL TRANSFERS AND THE ACCUMULATION OF WEALTH*

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**ABSTRACT**

This paper provides evidence on the role of intergenerational transfers in the accumulation of net worth and on differences in transfers between blacks and whites. To address these issues, we use the 1983-86 Survey of Consumer Finances, which contains detailed information on households' gifts to and from other households, trusts, life insurance, and net worth.

Unlike previous analyses, we distinguish between intended transfers (for example, gifts to other households) and possibly unintended transfers (bequests). In calculations similar to those of Kotlikoff and Summers (1981), we estimate that intended transfers account for at least 20% of net worth, and possibly substantially more. Thus, a significant portion of wealth accumulation cannot be explained by life-cycle motives. Previous analyses cannot make this claim because they focus on bequests, which are consistent with either life-cycle saving or bequest motives.

We also show that differences in transfers between blacks and whites are large relative to differences in net worth among those groups. This finding is consistent with transfers playing an important role in accounting for previously unexplained wealth differentials between blacks and whites.

# Intergenerational Transfers and the Accumulation of Wealth

## I. Introduction

The role of intergenerational transfers in economic activity has received a large amount of attention in recent years. Nevertheless, no consensus has been reached concerning either the magnitude of such transfers in the American economy or the importance of transfers for economic inequality.[1] In this paper, we reexamine these issues making use of the 1983-86 Survey of Consumer Finances (SCF). The SCF contains uniquely detailed household information on transfers to other households, college expenses paid by parents, inheritances, trusts, life insurance, and bequeathable net worth.

We first examine the relative importance of life-cycle saving and intergenerational transfers as alternative sources of wealth accumulation. Kotlikoff and Summers (1981) estimate that intergenerational transfers are the immediate source of at least 80% of U.S. net worth. Modigliani (1988a, 1988b) estimates that transfers account for less than 20% of net worth. Several authors have provided intermediate estimates.

A major conceptual problem with this literature concerns the treatment of bequests (Kessler and Masson 1989). All previous studies of transfers treat bequests as departures from the life-cycle hypothesis. However, bequests are also consistent with life-cycle saving motives coupled with uncertain lifespan and imperfect annuity markets (Davies 1981, Abel 1985,

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[1] A third issue concerns the motivation for transfers. Alternatives include altruism, self-interested exchange, and accidental bequests. For example, see Abel (1985), Bernheim (1989), Bernheim, Schleifer, and Summers (1985), Cox (1987), Davies (1981), Hurd (1987, 1989), Kotlikoff and Spivak (1981), Menchik (1980, 1985) and Menchik and David (1983), and Tomes (1981).

Hurd 1989).

Our analysis circumvents this problem. Rather than estimate all components of life-cycle saving or intergenerational transfers, we focus on a subset of items, intended transfers, which are not envisioned by the life-cycle hypothesis. For example, intended transfers would include transfers to other living households, but would not include bequests. We are able to focus on intended transfers because of detailed data on transfers between households in the SCF.

Our results indicate that intended transfers are the immediate source of at least 20% of aggregate wealth. This figure understates the true importance of transfer wealth, since at least some bequests are likely to be intended (and for several other reasons described below). Thus, a significant share of wealth accumulation in the U.S cannot be explained by life-cycle motives, even when the life-cycle model is expanded to allow for bequests. Similar to most other studies using U.S. data, our estimates indicate that bequests account for an additional 15% of net worth.

In the second part of the paper, we explore differences in transfers between blacks and whites. Blau and Graham (1990) estimate models of wealth accumulation for young black and young white families. They show that 78% of the gap in wealth is unexplained, even after controlling for a variety of factors. They hypothesize that differences in intergenerational transfers explain the bulk of the difference; however, due to data limitations, they present little evidence in support of this view.

Data from the SCF show large differences in transfer activity between blacks and whites. We find that differences in lifetime transfers received between blacks and whites are large relative to differences in net worth between those groups. We also examine the determinants of transfer

behavior. We find no strong evidence that race, per se, has an effect on transfer decisions.

Section II describes the SCF and presents background information on transfers and related items. In Section III, we estimate the importance of intended transfers as a source of current net worth. Section IV examines the role of transfers in black/white wealth differentials. Section V is a short conclusion.

## II. Background Data on Transfers

This study uses data from the 1983-86 Survey of Consumer Finances (SCF), undertaken by the Federal Reserve Board in conjunction with several other federal agencies.[2] The survey contains interviews from a random sample of 3,824 U.S. households in 1983, along with a supplemental survey of 438 high-income households. The oversampling of high-income households is particularly useful because intergenerational transfers are concentrated among the wealthy.[3] In 1986, 2,822 of these households were reinterviewed, including 359 of the high-income sample. The SCF contains data on wealth, income, and demographic variables, and a variety of information on transfers.

In the 1986 wave, each household head was asked if he or she contributed $3000 or more to another household in 1983-85.[4] If so, the amount given and the relationship of the recipient household to the

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[2] See Avery, et al, 1984, for a description of the SCF.

[3] See Avery, Elliehausen and Kennickell (1988) for the description and importance of the high-income sample. Table 1 below shows that, with the high-income sample included, the SCF matches other aggregate figures for transfers and net worth fairly closely. We present most of our results below with and without the high-income sample.

[4] The SCF codebook states explicitly that alimony and child support were not to be included in the answer to this question.

respondent were elicited. Similar questions were asked about transfers received from other households. As shown below, the vast proportion of these inter vivos transfers occurred between parents and children. Since the SCF recorded the ages of all living parents and children of the respondent and spouse, the age pattern of transfers can be tracked closely. Respondents were also asked to report separately any college expenses they paid on behalf of children and any inheritances received in 1983-85.

In the 1983 wave, respondents reported holdings of trusts and whole and term life insurance, whether they expect to receive a sizable inheritance, and whether more than half of their wealth derived from major gifts and inheritances. Both waves collected detailed information on net worth.

The only other U.S. data set used previously to provide detailed information on inter vivos transfers is the President's Commission on Pension Policy (PCPP).[5] Relative to the PCPP, the advantages of the SCF include the more detailed asset information and the ability to track the age of both the recipient and source of transfers. The principal potential shortcoming of the SCF is the censoring from below of reported transfers at $3000 over the three year period. We return to this issue at several points in the analysis below.

Table 1 provides estimates of aggregate transfers and related variables from the SCF and from alternative sources.[6] The Appendix describes in detail the construction of the alternative estimates. The first two rows

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[5]Kurz (1984), Cox and Raines (1985), Cox (1987), Cox and Jakubson (1989), Cox (1990) and Chiswick and Cox (1988) use the PCPP to analyze transfers.

[6]All data presented in this section are weighted to represent the cross-section of the U. S. population in 1985, aged 25 and over. Younger households were excluded because this group is thought not be representative of the national sample. See Avery and Kennickell (1988).

TABLE 1

Estimated Net Worth and Transfer Flows

| Variable | SCF | Alternative Estimate | Source[1] |
|---|---|---|---|
| Net worth ($ billions) | | | |
| 1983 | 10,082 | 11,120 | Balance Sheets for the U. S. Economy, 1945-89. |
| 1986 | 11,930 | 12,891 | |
| Inter vivos transfers given, annual, 1983-85 ($ billions) | 42.0 | 65.6<br>61.6 | Kurz (1984), Cox and Raines (1985), adjusted |
| College expenses paid by parents, annual, 1983-85 ($ billions) | 32.5 | 32.3 | Kotlikoff and Summers (1981), adjusted |
| | | 34.9 | Kurz (1984), Cox and Raines (1985), adjusted |
| Trusts balances, 1983 ($ billions) | 308.9 | 309.3 | IRS (1975), adjusted |
| Life Insurance, 1983 | | | |
| Total ($ billions) | 3457 | 4965 | 1988 Life Insurance Fact Book, pp. 16-22. |
| % of HH with LI | 76.0 | 81.0 | |
| Average\|LI>0 ($) | 54,523 | 73,100 | |
| Inheritances received, annual, 1983-85 ($ billions) | 43.7 | 30.8 | Kurz (1984), and Cox Raines (1985), adjusted |

[1]Sources and calculations are described in detail in the Appendix.

show that the SCF underestimates aggregate net worth by about 10% in 1983 and 1986 when compared to Flow of Funds data. The SCF records transfers given to other households of $42 billion per year for 1983-85. This figure is about one-third smaller than the analogous figure in the PCPP. The censoring from below of the SCF data may account for this discrepancy.

College expenses paid by parents were about $32.5 billion per year in the SCF, which is very close to estimates obtained by adjusting figures from Kotlikoff and Summers (1981) and from the PCPP. The SCF underestimates the value of 1983 term and whole life insurance holdings by about 30% compared to industry statistics. Most of the discrepancy is due to underreporting of insurance holdings among households that report having insurance. Trust balances in the SCF are very similar to estimated trust balances from IRS data.

Reported inheritances received in the SCF are $43.7 billion annually. An alternative estimate from the PCPP is $30.8 billion, but there appear to be problems with the PCPP data in this regard (see Kurz 1984).

Table 2 provides more detailed information on transfer categories in the SCF. Fewer than 10% of all households donated $3000 or more to another household in 1983-85. Among households that did give large gifts, the average gift over the three-year period was $16,202. The second line of Table 2 indicates that there may be substantial underreporting of transfers received.[7] This result arises frequently in surveys concerning transfers.[8]

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[7]Aggregate transfers given and received could also differ because givers value their gifts (in-kind) more than the recipients do or because transfers can be given to (received from) households that are not in the survey--e. g., households that die, households outside the U. S., people in jail, etc. However, none of these explanations seems likely to account for the magnitude of the difference in reported transfers given and received.

TABLE 2

Inter Vivos Transfers and Inheritances, 1983-85

| Transfer Category | Participation Rate | Average $ (participants) | Total $ (billions) | % in Top Net Worth Decile |
|---|---|---|---|---|
| Support Given ≥ $3000 | 9.4 % | 16,202 | 126.1 | 58.2 |
| Support Received ≥ $3000 | 5.3 % | 14,860 | 65.1 | 27.2 |
| College Expenses | 12.6 % | 9,373 | 97.4 | 42.8 |
| Inheritance Received | 3.7 % | 42,729 | 131.1 | 60.2 |

Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the U. S. population in 1985 aged 25 and over.

The extent of underreporting may be explained by censoring of the transfer variables at $3000. For example, suppose a parent gives $2500 to each of two children. The SCF would record the parent giving $5000, but would record each child receiving zero. Since over 80% of transfers to children are given by households with more than one child, the underreporting of transfers received is likely to be particularly severe in the SCF.

One out of eight families reports making expenditures for their children's college education. The average expenditure among those with positive amounts is $9373. Fewer than 4% of households received inheritances, but the average inheritance received is almost $43,000. Aggregate inheritances are roughly the size of reported transfers given to other households.

Table 3 shows that reported transfers are highly concentrated: the top 1% (10%) of transfers, by amount, account for more than 20% (50%) of total transfers given or received. Given the censoring of transfer amounts, the figures in Table 3 represent upper bounds on the concentration of transfers. Table 4 documents that most <u>inter vivos</u> transfers are given from older generations to younger generations. More than 75% of reported transfers are given by parents to their children. There are also sizable flows from children to parents and from grandparents to grandchildren. Tables 3 and 4 show that, although the level of transfers received appears to be underreported, the concentration and direction of transfers received match the corresponding features of support given fairly well.

Table 5 reports mean characteristics of the entire sample, givers,

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[8] See Cox and Raines (1985), Morgan (1984) or Modigliani (1988b). Kessler and Masson (1989, p. 148) note that "it is well known that such data suffer from recall bias and underreporting, especially in people's tendency to admit more easily that they have given than that they have received."

TABLE 3

The Size Distribution of Reported Transfers, 1983-85

| Percentile | % of Total Support Given | % of Total Support Received |
|---|---|---|
| 99th-100th | 23 | 22 |
| 95th-100th | 43 | 38 |
| 90th-100th | 56 | 52 |
| 75th-100th | 73 | 68 |

Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the U. S. population in 1985 aged 25 and over. Reported transfers are censored from below at $3000 over the 3-year sample period.

TABLE 4

Intergenerational Direction of Transfers, 1983-85

| Support Given to | % of Givers Who Give to[1] | Average Transfer\|≥3000 | % of Total Transfers Given |
|---|---|---|---|
| Children | 75.4 | 16,430 | 74.9 |
| Parents | 14.6 | 8,755 | 7.7 |
| Grandparents | 0.7 | 7,726 | 0.3 |
| Grandchildren | 11.8 | 16,272 | 11.8 |
| Other | 11.8 | 7,633 | 5.4 |

| Support Received From | % of Recipients Who Receive From[1] | Average Transfer\|≥3000 | % of Total Transfers Received |
|---|---|---|---|
| Children | 3.6 | 13,053 | 3.1 |
| Parents | 84.2 | 14,966 | 83.6 |
| Grandparents | 7.9 | 15,189 | 7.9 |
| Grandchildren | 1.0 | 6,175 | 0.4 |
| Other | 8.0 | 8,998 | 4.8 |

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Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the 1985 U. S. population aged 25 and over.

Notes:

[1] Households can give to (or receive from) more than one recipient (source). For households that do report more than one recipient (source), transfer dollars are allocated equally among the various recipients (sources).

TABLE 5

Mean Characteristics of Selected Groups

| Variable | Whole Sample | Givers | Recipients | Non-Participants |
|---|---|---|---|---|
| Sample Size | 2774 | 430 | 166 | 2204 |
| Age | 48.7 | 55.3 | 41.5 | 48.5 |
| Avg. Income, 1983-85 | 29,499 | 55,968 | 36,814 | 29,075 |
| Net Worth, 1985 | 144,393 | 498,902 | 221,556 | 102,654 |
| Education | 12.4 | 13.7 | 14.7 | 12.1 |
| Non-white | 0.180 | 0.075 | 0.058 | 0.198 |
| Female Head | 0.276 | 0.243 | 0.342 | 0.277 |
| Married | 0.595 | 0.588 | 0.516 | 0.600 |
| Have children | 0.851 | 0.874 | 0.785 | 0.853 |
| Child <=6 years old | 0.185 | 0.026 | 0.271 | 0.192 |
| Expect Inheritance | 0.146 | 0.201 | 0.388 | 0.126 |
| Half or more of wealth from gifts or inheritance | 0.068 | 0.091 | 0.171 | 0.060 |
| Buy First House, 1983-85 | 0.065 | 0.064 | 0.156 | 0.060 |

Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the 1985 U. S. population aged 25 and over.

recipients, and nonparticipants.[9] Givers are older than average, and have higher income, net worth, and educational levels. Recipients of major gifts are younger than average, and also have higher levels of income, net worth and education. In contrast, transfer recipients in the PCPP have lower income and net worth than average (Cox and Raines 1985). The difference may arise because the PCPP records all transfers, while the SCF records only major gifts (≥$3000 over 3 years).

Both givers and recipients in the SCF are more likely to be white. Recipients are less likely to have children, but more likely to have young children. Givers and recipients are both more likely to report that they have obtained at least half of their wealth from gifts and inheritances and more likely to expect to receive an inheritance. Recipients are more likely to have purchased a first home in 1983-85; the 15% of recipients that bought a first home accounted for 25% of all transfers received.

The age profile of transfers is summarized in Table 6. The probability that a household gives a major gift rises steadily as the head ages, peaking at 16% among 55-64 year olds. The average amount given, among donors, peaks in the 65 and over group. The probability of receiving a transfer peaks at 9% in the 35-44 age group. Households with heads aged 65 or older are extremely unlikely to receive large transfers.

In summary, the SCF appears to provide a valuable new source of information on intergenerational transfers. The tables show that SCF data are broadly consistent with data from the PCPP and other sources. Where differences do occur (for example, aggregate transfers given), the censoring of the transfer variable biases the SCF estimates in predictable directions.

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[9]About 1% of the sample reported both giving and receiving gifts.

TABLE 6

Age Profiles of Transfers Given and Received

| Age of Household Head, 1985 | Prob (Give) | Avg. given\| ≥ $3000 |
|---|---|---|
| 25-34 | .043 | 7509 |
| 35-44 | .066 | 9812 |
| 45-54 | .099 | 9612 |
| 55-65 | .162 | 13276 |
| 65+ | .133 | 29971 |
| | **Prob (Receive)** | **Avg. received\| ≥$3000** |
| 25-34 | .065 | 9887 |
| 35-44 | .090 | 10146 |
| 45-54 | .037 | 9710 |
| 55-64 | .048 | 42618 |
| 65+ | .014 | 16761 |

Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the 1985 U. S. population aged 25 and over.

By providing detailed data on both assets and transfers and tracking the age pattern of transfers, the SCF permits the analysis of issues for which the relevant data were not previously available. In the following sections, we analyze two of these issues.

## III. Life-Cycle Saving versus Intergenerational Transfers

The life-cycle model (LCM) of saving (Modigliani and Brumberg 1954, Ando and Modigliani 1963) states that households save in order to provide for their own consumption later in life. Thus, the LCM can encompass saving for retirement (so-called "hump" saving), as well as precautionary saving against uncertain health, income, lifespan or other risks.[10] A fundamental implication of the LCM as stated by Modigliani (1988, p. 16) is that

> the bulk of wealth might be acquired not by intergenerational transfers, but instead be accumulated from scratch by each generation, to be consumed eventually by the end of life.

Thus, a key implication of the model is that planned, or intended, transfers will account for a negligible share of wealth held at any point in time.

Kotlikoff and Summers (1981), however, estimate that life-cycle saving motives explain only a very small portion of actual saving behavior. Estimates provided by other authors vary widely and are discussed below.

In this section, we reexamine the question of the relative importance of life-cycle saving and intergenerational transfers as sources of current net worth. This is an important task because a variety of topics--for example, the effects of government debt or social insurance programs,

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[10] There is growing evidence that precautionary saving is an important component of aggregate saving and thus must be allowed for in calculations of life-cycle and transfer wealth. See Kotlikoff (1989) and Levin (1989) for saving against health risk, Skinner (1988), Engen (1989) and Kimball and Mankiw (1989) for saving against income risk, and Davies (1981), Hurd (1989), and Engen (1991) for the effects of mortality risk.

dynamic tax incidence, and the long-run distribution of wealth--are affected by this issue.[11]

Our analysis differs from previous work in several ways. First, using the SCF, we employ detailed information on inter vivos transfers that was unavailable to previous researchers. Second, most previous studies focus on the magnitude of bequests as indicative of the importance of inter-generational transfers. However, as mentioned above, it is possible to have "accidental" bequests--due to uncertain lifespan and incomplete annuity markets--without bequest motives (Davies 1981, Abel 1985). The extent to which actual bequests are intended or accidental remains a controversial issue.[12] Kessler and Masson (1989) conclude that "it is virtually impossible to distinguish life-cycle vs. bequest saving" because of unintended bequests. As explained below, we resolve this problem by excluding bequests from our estimates of intended transfers.

(a) Methodology

Several methods have been employed by previous researchers. A number of surveys (including the SCF) ask respondents about the percentage of wealth held that is due to bequests (and sometimes gifts). Modigliani (1988b) shows that papers using such data indicate that transfers account for less than 20% of wealth. (See also Hurd and Mundaca 1988.) These estimates focus almost exclusively on wealth received through bequests.

An alternative approach focuses on simulation models. These models typically specify the distribution of income, wealth, inheritances, and

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[11] Discussion of these effects may be found, for example, in Kotlikoff and Summers (1981), Bernheim, Schleifer, and Summers (1985), Cox (1987), and Kotlikoff (1988).

[12] See Hurd (1987, 1989) and Bernheim (1989) for opposing views concerning the extent to which bequests are intended.

other factors, and have generated widely varying estimates of the importance of transfer wealth (Davies 1982, Masson 1986, Laitner 1990, Lord and Rangazas 1991).

Kotlikoff and Summers (1981) provide direct estimates of life-cycle wealth, defined as the accumulated net surpluses of labor income over consumption, where accumulation occurs at the after-tax real interest rate. They employ cross-section data on earnings and consumption along with a variety of demographic data and estimate that at most 20% (and under some sets of assumptions less than 0%) of aggregate wealth can be attributed to life-cycle wealth accumulation.[13] However, this approach depends on a large number of assumptions about family structure, ages when families are formed, age of death, age of retirement, stability of age-earnings and age-consumption profiles over time, relative wages, and other variables. In addition, the estimates are very sensitive to the treatment of durables (Blinder 1988, Modigliani 1988a).

In this paper, we estimate transfer wealth directly. This approach, which was developed by Kotlikoff and Summers (1981), calculates an annual flow of transfers that is then converted to a stock of transfer wealth using steady-state assumptions. Formally, in a steady-state economy, the stock of current wealth that was obtained from transfers can be expressed as

$$(1) \qquad T = t \frac{e^{(r-n)(D-I)}}{r-n} \left(1 - e^{(n-r)(G-I)}\right),$$

where t is the annual flow of transfers, r is the interest rate, n is the

[13] In other work estimating life-cycle wealth directly, White (1978) and Darby (1979) reach conclusions similar to Kotlikoff and Summers (1981), Ando and Kennickell (1987) find that life-cycle saving can account for between 60% and 85% of wealth, and Modigliani (1988a, 1988b) adjusts the estimates presented by Kotlikoff and Summers and concludes that 80% of net worth can be explained by life-cycle saving.

rate of growth of population plus productivity, and D, G, and I are the ages when the representative individual dies, gives a transfer, and receives a transfer, respectively. Equation (1) shows the stock of transfer wealth as a function of the annual flow, discount rates, and the ages at which transfers and death occur.[14]

Several issues arise in implementing this approach. First, transfers are likely to be severely underreported. Kotlikoff and Summers note that items such as low-interest loans or positions in family businesses represent gifts but would be unlikely to be reported. These problems were exacerbated in their study by the absence of any micro data set with detailed information on inter vivos transfers. Although the SCF contains detailed information on cash transfers, it is likely that transfers are still underreported because of the absence of information on loans, positions in family businesses, or gifts-in-kind, and because the SCF only records transfers for households that gave $3000 or more over 1983-85.

Second, (1) assumes that the ratio of transfer flows to income has remained constant. However, the ratio appears to have fallen over time. Lampman and Smeeding (1983) present evidence that transfer flows have fallen slightly in relation to income since 1929. Ando and Kennickell (1987) estimate that the share of life-cycle wealth in aggregate wealth rose fairly steadily to 75% from 60% between 1960 and 1980. Hurd and Mundaca (1989) compare answers to survey questions about the importance of gifts and inheritances in the 1962 Survey of Financial Characteristics of Consumers

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[14]To illustrate, Kotlikoff and Summers calculate that in 1974 t = $45.4 billion, where t includes bequests of net worth and life insurance, trust contributions, and college expenses paid by parents. Setting D=55, G=45, and I=15 (all in years above 18), r=.045 and n=.035 yields transfer wealth of $1755 billion, or about 45% of 1974 net worth of $3884 billion.

and the 1983 SCF. They conclude (p. 753) "if anything, the general impression...is that saving from earnings has become more important" in the 1983 survey. If in fact the ratio of transfers to income has actually fallen over time, analyses assuming the ratio has remained constant at current levels will understate the importance of accumulated transfers.

Third, Kotlikoff and Summers (1981) and Modigliani (1988b) estimate (1) for a representative household and thus obscure all heterogeneity in transfer behavior. However, heterogeneity across households in levels of transfers given is widely recognized to be a key element in understanding the importance of transfers.[15] As shown above, the vast majority of households give less than $3000, yet aggregate transfer flows are large.

In addition, (1) requires that the age pattern of transfers be identical across households. Kotlikoff (1988, p. 45) notes that

> it is not clear what choice of these three ages [D, G, and I] best approximates reality. The appropriate choice of these ages depends on one's assumption about the steady state interest and growth rate of the economy...

However, the ages when transfers are actually given and received are clearly empirical questions, not analytical ones, and may also vary across households.

These considerations highlight two distinct advantages of the SCF data: the ability to examine transfers on a household basis, rather than being forced to rely on the representative agent framework, and the ability to track the actual age pattern of transfers. In our analysis, we estimate (1) for each household, using the appropriate transfer and age data, and aggregate across households. These estimates will understate the true value

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[15] For example, see the discussions in Hurd 1987, p. 308, and Kotlikoff and Summers 1981, p. 730.

of transfer wealth due to underreporting of transfers, the steady state assumption, and the truncation of transfer amounts discussed in section II.

The data to estimate (1) are taken from a variety of sources. Kotlikoff and Summers estimate historical averages of r and n of .045 and .035, respectively. We use r-n=.01 as our central estimate.

The age of the household head (G) is taken from the SCF. To estimate D, we use 1983 life expectancy tables and control for the sex, age, and race of the household head (U. S. Bureau of the Census, 1984, p. 70). For transfers given to children, I is the average age of all children 18 or over. If there are no children 18 or older, I equals the age of the oldest child. For gifts to grandchildren, I is assumed to be the child's age less 25. For transfers given to parents, I is the average age of all living parents of the respondent and spouse. For gifts to grandparents, I is the parents' age plus 25.

We define intended transfers (t) as support given to other households,[16] trust accumulations, and bequests of life insurance to children. Both Kotlikoff and Summers (1981, 1988) and Modigliani (1988a, 1988b) include life insurance and trusts. Intended transfers thus differs from "transfers" defined by Kotlikoff and Summers and Modigliani in that we include transfers to related households (for which they did not have data) and we exclude all bequests. We present separate estimates of college expenses paid by

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[16]Although transfers to other households can represent a from of precautionary saving (see Kotlikoff and Spivak (1981) for example), we do not consider such transfers as part of life-cycle saving because the LCM as commonly formulated ignores inter-household transactions. Intended transfers need not be motivated by altruism.

parents, which Kotlikoff and Summers include but Modigliani excludes,[17] and of bequests.

To calculate inter vivos transfer flows, we divide the annual flow of transfers given equally among each group to which the household reports that it gave funds.[18] The groups are children, parents, grandchildren, grandparents, siblings and friends.

Life insurance flows to children are calculated as $t_{INS}$ = F*KID*PCT *pr(die), where F is the face value of term and whole life insurance policies held by the household, KID is an indicator for whether the family has children, and PCT represents the percentage of the proceeds that accrue to children or other distant-in-age relatives. We assume that if the head is married when he dies, children obtain 25% of the face value; if the head is single, children receive 75%.[19] The probability that the household head will die during the next year is given by pr(die) and taken from 1983 life

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[17]College expenses are clearly intended. Modigliani (1988a) argues that they should not be counted against the life-cycle model because college students are still--in his view--mainly dependents. Kotlikoff (1988) argues that the fungibility of money implies that what matters is the value of resources transferred rather than the form the resources take. Thus, if cash transfers to a 21 year old count as transfers, then educational payments to that same 21 year old should also count.

[18]In principle, we could use transfers received or transfers given, but not both. However, due to the suspected underreporting of transfers received and to remain consistent with the variable describing college support given, we use transfers given in calculating the flow.

[19]These figures are based on Davies (1982) who surveys both British and American sources and finds that allocating 25% (100%) to children when the head is married (single) is appropriate. We reduce the 100% to 75% to reduce further the likelihood that we overestimate insurance flows. Also see Bradford (1986, p. 171), who calculates that only about 5% of the gross value of large estates in 1983 were given to charity.

tables, controlling for age, sex, and race.[20]

Trust holdings are reported separately in the 1983 wave only. To estimate flows through new contributions to trusts we calculate $t_{TRUST}$ = TRUST83*q*KID, where TRUST83 is the 1983 trust balance, and q, new trust contributions as a percentage of trust balances, is set at 5%.[21] College expenses are taken from the SCF. Annual bequest flows to children are given by $t_{BEQ}$ = NW*PCT*pr(die), where NW is the household's bequeathable net worth.

(b) Results

Estimates of (1) are presented in Table 7. Annual flows of intended transfers are estimated to be about $55 billion. Converting the flow to a stock (with r-n=.01) yields transfer wealth of $2233 billion. Thus, our basic estimate is that intended transfers are the source of 20% of aggregate net worth reported in the SCF. Inter vivos transfers comprise the majority of intended transfers. To ensure that the estimates were not being unduly influenced by the behavior of the very wealthy, we estimated Table 6 without the high-income sample. In this case (not shown), intended transfers equalled about 17% of net worth.

Most previous studies using U.S. data estimate that "transfers" account for 10-20% of net worth (Modigliani 1988a, p. 24). These studies focus almost exclusively on bequests and employ only fragmentary data on inter vivos transfers. Thus, our estimate that bequests account for 15% of

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[20] U. S. Bureau of the Census, 1984, p. 70. For individuals over 85 death rates are taken from the 1988 Life Insurance Fact Book, p. 113. All figures from the latter source are reduced by a small, uniform percentage in order to equate the death rates for 85 year olds in the two sources.

[21] This figure is based on the annual growth rate of new trusts created from 1960-1974, IRS (1973, p. 46) and IRS (1977, p. 24). The cumulative growth rate was 5.68%.

TABLE 7

Intergenerational Transfers as a Source of Capital Accumulation

| Transfer Category | Annual Flow ($ billions) | Stock of Transfer Wealth ($ billions) (r-n=0.01) |
|---|---|---|
| Support Given to: | | |
| Children | 30.34 | 1258.9 |
| Parents | 3.13 | -100.5 |
| Grandparents | 0.06 | -3.8 |
| Grandchildren | 4.68 | 391.3 |
| Trusts | 11.98 | 504.5 |
| Life Insurance | 5.45 | 182.8 |
| Totals | | |
| Intended Transfers | 55.64 | 2233.3 |
| College Payments | 32.49 | 1369.2 |
| Bequests | 46.94 | 1718.9 |
| As a % of net worth[1] | | |
| Intended Transfers | 0.51 | 20.3 |
| College Expenses | 0.29 | 12.4 |
| Bequests | 0.43 | 15.6 |

Source: Authors' calculations from the 1983-86 Survey of Consumer Finances.

Notes:

[1] Aggregate net worth is set at $11007 billion, the average of its value from the survey in 1983 ($10084 billion) and in 1986 ($11930 billion).

wealth accumulation is consistent with previous work.

However, because bequests may not be intended, it is unclear whether the earlier studies have uncovered any evidence against life-cycle wealth accumulation. More specifically, these models only provide evidence against a no-bequest life-cycle model. In contrast, our results indicate that even a life-cycle model that allows for bequests cannot account for at least 20% of private wealth accumulation.

We emphasize that several factors make our estimate a lower bound for intended transfers: (i) underreporting, (ii) steady-state assumptions, (iii) the exclusion of all bequests when presumably at least some are intended, and (iv) the censoring of the transfer data at $3000. It is difficult to gauge the quantitative importance of the first two effects.[22] Concerning the third effect, if we include bequests (to be comparable to other studies), transfer wealth is at least 35% of net worth. This figure is higher than any previous study for the U. S. (except Kotlikoff and Summers), and is closer to the estimates surveyed in Kessler and Masson (1989) for European countries.

Finally, the role of censoring the transfer data is also potentially important. As shown in the Appendix, the PCPP estimate of non-educational inter vivos transfers is roughly 150% as large as the SCF estimate. If the difference is due to the censoring of the SCF data, then an additional 7% of wealth may be attributable to intended transfers. In any case, it should be clear that the 20% estimate understates the true importance of transfer

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[22]However, the extent of underreporting may be fairly large. Data from the PCPP indicate that one-third of all non-educational inter vivos transfers consisted of "durables (in kind)" or "use of property." In both cases, the PCPP specifically asked questions about these items (Cox and Raines 1985, Table 13.3).

wealth.

Table 8 reports the results of sensitivity analysis for changes in the definition of transfers and the level of r-n.[23] The estimates of transfer wealth rise with the estimate of r-n. Using the Kotlikoff and Summers (1981) definition and r-n=0.01 yields an estimate of transfer wealth accounting for 34% of wealth accumulation. This is lower than the 45% reported in footnote 14, primarily because our estimates of bequests are substantially lower than in Kotlikoff and Summers (1981). The transfer definition used by Modigliani (1988a, 1988b) results in a consistently higher estimate of transfer wealth than that generated by using intended transfers.

The evidence presented above is consistent with a growing body of research that suggests that life-cycle saving motives omit an important component of capital accumulation. Bernheim, Schleifer, and Summers (1985), Cox (1987), and Kotlikoff (1988) provide extensive discussions of data patterns that appear to be inconsistent with the life-cycle hypothesis. Hayashi, Ando, and Ferris (1988) provide corroborating evidence for Japan.

One caveat to our results concerns the possible historical uniqueness of the sample period. For example, due to the increase in housing prices in the late 1970s and mid-1980s, the elderly may have been better off and the young worse off than they otherwise would have been. In addition, in 1981

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[23] Modigliani (1988) argues that interest on transfers should count as part of life-cycle wealth rather than transfer wealth; that is, that r should equal 0. This argument, however, is disputed by virtually every other researcher on this topic, including Kotlikoff and Summers, Blinder (1988), Kessler (1989), and Darby (1979). Indeed, Modigliani (1988a, p. 40) may be his own most convincing critic on this issue: "One would normally view the life saving of a household as the difference between the value of bequests left and received" (emphasis added). By noting that the value of a bequest depends on when it was given, we conclude that the interest should be included as transfer wealth.

TABLE 8

Sensitivity Analysis:

Intergenerational Transfers as a Source of Capital Accumulation

| Transfer Definition[1] | r-n 0.00 | 0.01 | 0.02 |
|---|---|---|---|
| Intended Transfers | 14.2% | 20.3% | 29.5% |
| Kotlikoff and Summers (1981) | 25.8% | 34.3% | 46.8% |
| Modigliani (1988a) | 17.7% | 21.9% | 27.5% |
| Modigliani (1988a) + *Inter vivos* transfers[2] | 27.4% | 35.9% | 48.1% |
| All transfer components | 35.5% | 48.3% | 67.5% |

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Source: Authors' calculations from the 1983-86 Survey of Consumer Finances.

Notes:

[1]Transfer definitions are given by the following table

| Transfer Category | Intended Transfers | Kotlikoff and Summers (1981) | Modigliani (1988a) |
|---|---|---|---|
| *Inter vivos* gifts | yes | no | no |
| Trusts | yes | yes | yes |
| Life Insurance | yes | yes | yes |
| Bequests | no | yes | yes |
| College Expenses | no | yes | no |

[2]This is equivalent to intended transfers plus bequests.

the limit on annual tax-free inter vivos gifts was raised to $10,000 from $3,000. Both factors could have induced additional, historically atypical, transfers that are reflected in the SCF. Ultimately, determining whether the sample period is historically unique can only be resolved through further empirical analysis, which will require new data sets covering other time periods.

Nevertheless, several points can be noted. In 1983-86 only 25% of all transfers received in the SCF were given to households that bought their first home in that period. Suppose that all of these transfers were due to the elderly compensating the young for the rise in house prices and that, consequently, we excluded these transfers in our calculations. Intended transfers would still account for about 17.5% of net worth.[24]

Regarding the increase in allowable tax-free giving, it is important to note several other changes in the tax system that occurred in 1981.[25] The maximum estate tax rate was reduced to 50% from 70%. The exemption on estate value was raised to $600,000 from $175,625. The marital deduction in estates was extended without limit. All of these changes reduce the costs of bequeathing wealth relative to making inter vivos transfers. In addition, the overall income tax rate was reduced to 50% from 70%. This reduces the tax benefits of giving inter vivos gifts or bequests. Thus, the net effect of all of the changes introduced in 1981 on the desirability of inter vivos giving is uncertain.

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[24] In general, to the extent that the elderly choose to either spend their windfalls or save them (for either precautionary or strategic reasons) rather than transfer them immediately to children, there would be no increase in reported intended transfers.

[25] Pechman (1987) and Bernheim (1987) provide excellent discussions of the changes in gift and estate taxes in recent years.

The tax-sensitivity of inter vivos giving is also uncertain. Both Pechman (1987) and Bernheim (1987) emphasize the importance of non-tax factors in making estate and gift decisions. Bernheim (1987) has shown that the percentage of estate given to spouses is sensitive to the change in marital deductions. However, there is no direct evidence on how inter vivos giving is affected by taxes.

Finally, Ando and Kennickell (1987) estimate that the importance of transfer wealth declined fairly steadily from 1960 to 1975, but rose by about 5% points from 1975 to 1980. However, the 1980 estimates of transfer wealth were still smaller than all estimates of transfer wealth for 1960 to 1974. Hurd and Mundaca (1988) conclude that the importance of transfer wealth declined from 1963 to 1983. Thus, there is no direct evidence that the house price increases of the late 1970s and the tax law changes in 1981 have had the effect of raising transfers above historical levels. Nevertheless, this is clearly an important issue and would merit further research.

## IV. Intergenerational Transfers and Black/White Wealth Differentials

Blau and Graham (1990) use the National Longitudinal Survey of Young Men and Women (NLSY) to show that young (24-34 year old) black families held wealth equal to about 18% of that of young white families in the late 1970's. They estimate wealth as a function of age, income, permanent income, and other characteristics separately by race and marital status. Decomposing the black/white wealth gap by using the mean levels of explanatory variables for whites and the estimated coefficients for blacks leaves approximately 78% of the wealth gap unexplained for married couples

and for singles.[26] After noting that the gap cannot be explained by differences in saving rates, wage growth rates, or previous realized rates of return, Blau and Graham hypothesize that the unexplained gap is due to differences in intergenerational transfers. However, due to data limitations, they present only fragmentary evidence in support of this view.

Summary data from the SCF in Table 9 show large differences in economic characteristics and in transfers for whites and blacks. Blacks hold approximately 17% as much wealth as whites, receive 47% as much income, and average about two fewer years of formal education. Black households are more likely to be single and headed by a female. The probabilities of giving or receiving $3000 or more are roughly 3.5 times higher for whites than for blacks. Even among those who gave or received, transfers were higher for whites than blacks. No black in the sample reported receiving an inheritance in 1983-85. Black families are also much less likely to expect an inheritance or to report having received more than half of their wealth through gifts and inheritances.

The data in Table 9 raise at least two issues: First, are the differences in transfers quantitatively important relative to differences in wealth, as hypothesized by Blau and Graham? Second, what causes the differences in transfers? Specifically, what is the role of race, _per se_, in explaining transfer behavior? We explore these questions in turn.[27]

To measure the magnitude of transfers relative to wealth, we define "transfers received" as _inter vivos_ transfers received plus inheritances

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[26] In replications of their methodology using the SCF but covering households aged 25-64, we find that 72% of the wealth gap remains unexplained for married couples, and 35% for singles.

[27] However, in examining these issues, the relatively small number of blacks in the sample should be kept in mind.

TABLE 9

Comparison of Selected Mean Characteristics of Blacks and Whites

| Variable | Whites | Blacks |
|---|---|---|
| Sample Size | 2453 | 258 |
| Age | 49.0 | 49.4 |
| Income | 32,262 | 15,184 |
| Net Worth | 168,075 | 28,557 |
| Education | 12.7 | 10.8 |
| Female head | 0.255 | 0.409 |
| Married | 0.615 | 0.461 |
| Prob(give transfer) | 0.106 | 0.029 |
| Prob(receive transfer) | 0.061 | 0.019 |
| Prob(receive inheritance) | 0.045 | 0.000 |
| Amount given\|≥$3000 | 16,861 | 9,158 |
| Amount received\|≥$3000 | 15,005 | 11,768 |
| Amount inherited\|≥0 | 42,984 | -- |
| Expect an inheritance | 0.164 | 0.051 |
| Half or more of wealth from gifts or inheritance | 0.076 | 0.014 |

Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the U. S. population aged 25 and over.

received.[28] Following Blau and Graham, we divide the sample into four groups based on race and marital status. For each group, we calculate average transfers received by household heads of each age between 25 and 62. (To adjust for long-term trends in income and transfers, we allow a 2% per year cohort effect, based on findings by Jianakoplos, Menchik, and Irvine (1989).) We then allow the value of transfers received at each age to grow at a specified rate of return. Finally, we add together the value of transfers received at each age to yield an estimate of the value of transfers received by each type of household by the age of 62. That is, for each type of household, accumulated transfers received by age 62 are

$$\sum_{a=25}^{62} \frac{t_a(1+r)^{62-a}}{(1+c)^{62-a}},$$

where $t_a$ is transfers received at age a, c is the cohort effect (0 or 2%), and r is the interest rate (3% or 5%, bracketing the estimates provided by Kotlikoff and Summers). Table 10 compares differences in the accumulated transfers received by age 62 to differences in net worth in each group among 60-64 year olds.

The second row in Table 10 shows that white married couples receive approximately $59,000 more than black married couples in accumulated transfers by the age of 62, if r=3% and cohort effects are ignored. This value is 20% of the difference in mean wealth for the two groups. Raising the interest rate on transfers to 5% raises the difference in transfers to 27% of the difference in net worth. Introducing cohort effects reduces the figures to 15% and 20%, respectively. Removing the high-income sample

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[28] We include inheritances here, even though they may not be intended transfers, because any inheritance raises the wealth of the recipient.

TABLE 10

Accumulated Transfers and Net Worth, 25-62 Year Olds

| | Married | | | Single | | |
|---|---|---|---|---|---|---|
| | Black | White | ΔT/ΔNW | Black | White | ΔT/ΔNW |
| **Entire Sample** | | | | | | |
| Mean net worth, 60-64 year olds | 43,883 | 338,475 | --- | 18,554 | 137,005 | --- |
| Value of transfers received by age 62 | | | | | | |
| (a) r=3%, c=0% | 2,291 | 61,471 | .201 | 11,482 | 85,222 | .622 |
| (b) r=5%, c=0% | 3,498 | 85,235 | .277 | 19,642 | 139,070 | 1.008 |
| (c) r=3%, c=2% | 1,482 | 46,147 | .152 | 6,807 | 54,374 | .401 |
| (d) r=5%, c=2% | 2,262 | 60,922 | .200 | 11,305 | 84,056 | .614 |
| **Without the High-Income Sample**[1] | | | | | | |
| Mean net worth, 60-64 year olds | 43,883 | 236,053 | --- | 18,554 | 85,061 | --- |
| Value of transfers received by age 62 | | | | | | |
| (a) r=3%, c=0% | 2,291 | 59,029 | .295 | 11,482 | 84,063 | 1.091 |
| (b) r=5%, c=0% | 3,498 | 81,977 | .408 | 19,642 | 137,283 | 1.769 |
| (c) r=3%, c=2% | 1,482 | 44,314 | .222 | 6,807 | 53,709 | .807 |
| (d) r=5%, c=2% | 2,262 | 58,501 | .293 | 11,305 | 82,914 | 1.076 |

Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the U. S. population aged 25 and over.

Note:

[1]Estimates for blacks do not change following the exclusion of the high-income sample because no black household that is in the high-income sample is both younger than 64 and the recipient of a transfer.

raises these figures by about half. Focusing on the four estimates that incorporate cohort effects, differences in transfers received are between 15% and 30% of the difference in net worth.

Among singles, the differences in transfer behavior are even larger. For example, the four cases with cohort effects indicate that differences in transfers range between 40% and 107% of the difference in net worth. Table 10 thus shows that differences in transfers between blacks and whites are substantial over the life-cycle and equal significant portions of the differences in accumulated net worth.

Table 11 presents similar results focusing on 25-34 year olds, roughly the age group analyzed by Blau and Graham. Transfers account for between 12% and 15% of the differences in net worth for married couples in this age group. For singles, the figure rises to 60%-84%. Recall that Blau and Graham found that 78% of the wealth differential was unexplained after correcting for the influence of observable variables. Thus, for young singles, transfer differences are as large as the unexplained wealth differential. For couples, however, differences in transfers account for less than a fifth of the unexplained wealth differentials.

Several aspects of the results in Tables 10 and 11 merit comment. First, the sample of blacks in the SCF is relatively small. Second, recall that transfers received are typically underreported and, in the SCF, are truncated from below at $3000. Ignoring truncation for the moment, if both blacks and whites underreport transfers received by the same percentage, the figures in Tables 10 and 11 would understate the differences in transfers over the life-cycle. The effect of truncation on transfer differences is ambiguous. If the average transfer received among households that received between $2999 and zero (inclusive) were equal for blacks and whites,

TABLE 11

Accumulated Transfers and Net Worth, 25-34 Year Olds

| | Married | | | Single | | |
|---|---|---|---|---|---|---|
| | Black | White | ΔT/ΔNW | Black | White | ΔT/ΔNW |
| Entire Sample[1] | | | | | | |
| Mean net worth, 25-34 year olds | 16,197 | 60,205 | --- | 7,324 | 28,976 | --- |
| Value of transfers received by age 34 | | | | | | |
| (a) r=3%, c=0% | 0 | 6,009 | .137 | 2,161 | 17,628 | .714 |
| (b) r=5%, c=0% | 0 | 6,568 | .149 | 2,490 | 20,674 | .840 |
| (c) r=3%, c=2% | 0 | 5,497 | .125 | 1,868 | 14,983 | .606 |
| (d) r=5%, c=2% | 0 | 5,994 | .136 | 2,152 | 17,545 | .711 |

Source: 1983-86 Survey of Consumer Finances. Data are weighted to reflect a cross-section of the U. S. population aged 25 and over.

Notes: [1]No household head aged 25-34 was in the high-income sample.

truncation would cause an overstatement of the transfer differences. However, the overstatement is likely to be extremely small.[29] However, if the average transfers received among households that received between $2999 and zero is higher among whites than blacks, truncation could imply that Tables 10 and 11 understate the true differences in transfers. At the very least, the data in Tables 10 and 11 are consistent with Blau and Graham's hypothesis and provide important evidence on the quantitative differences in transfers between blacks and whites.

We examine the second issue, the importance of race per se in determining transfer behavior, from two perspectives. Returning to the methodology of section III, we estimate that intended transfers account for 17.4% of net worth for blacks and 20.8% for whites. Estimated bequests account for 22.6% for blacks, 15.5% for whites. These findings do not suggest that transfers are less important in wealth accumulation for blacks than for whites.[30]

Several previous authors provide formal estimates of the determinants of transfer behavior. Kurz (1984), Cox (1987), Chiswick and Cox (1988), and Cox (1990) find that blacks are less likely to give or receive transfers than whites, controlling for other observable variables. However, race does not enter significantly in explaining transfer levels.

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[29]For example, suppose the average transfer received among households that received between zero and $2999 was $1000 for both blacks and whites. Table 9 shows that 98.1% of black families received $2999 or less, so average transfers received would rise by $981 for blacks. Since 93.9% of white families received $2999 or less, average transfers received for whites would rise by $939. The $52 difference ($17 per year) would reduce the difference in lifetime transfers received between blacks and whites in Table 10 by only $1175 (in the case where r=3% and c=0).

[30]Parental expenditure on children's college education accounts for 35.7% of net worth for blacks and 11.6% for whites.

Table 12 reports reduced form estimates of transfers received from parents and grandparents.[31] The specification is chosen to match other studies as closely as possible.[32] The tobit model in column (1) shows that transfers received decline with recipient's age, but rise with the recipient's net worth and education. Recipient income is negatively, but insignificantly associated with transfers received. The race indicator enters negatively and insignificantly.

Two-stage estimates are presented next.[33] The probit estimates in column (2) mirror those of the tobit: recipient's age, net worth, and education are statistically significant. Race is again statistically insignificant. Column (3) presents estimates of the transfer level, adjusted for selection bias. As is often the case, however, the second stage estimates are not particularly informative (see Kurz 1984). No variable is even remotely statistically significant.

The insignificance of the coefficient on race is robust to several alternative specifications not reported in the Table. Introducing a black-age interaction causes the coefficient on race to change sign, and reduces the t-statistic. The interaction term enters positively and

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[31]Appendix Table A1 provides means and related data for the variables used in Tables 12 and 13.

[32]The high-income sample is excluded, but Appendix Tables A2 and A3 show that the estimates in Tables 12 and 13 do not change substantially when the high-income sample is included. We exclude households if the head is 24 or younger, if there are no living parents, and (in order to focus on black/white issues) if the household head is Hispanic, Asian American or Native American.

[33]We estimate two-stage models because Cox (1987) shows that, holding parental resources constant, recipient income (or total resources) should be negatively related to the likelihood of obtaining a transfer, but could be positively associated with the level of transfer received (for example, in a bargaining model). Tobit models cannot capture both of these effects simultaneously.

TABLE 12

Analysis of Transfers Received

| | Tobit | | Transfer Received (Probit) | | Amount Received (Adjusted OLS) | |
|---|---|---|---|---|---|---|
| Variable[1] | Coeff. | t-stat | Coeff. | t-stat | Coeff. | t-stat |
| AGE | -91,896.2 | (2.39) | -2.467 | (3.83) | -1,838,570 | (0.16) |
| INCOME | -2,665.4 | (0.18) | -.065 | (0.26) | -59,633 | (0.15) |
| NET WORTH | 11,820.6 | (2.00) | .217 | (2.22) | 176,440 | (0.19) |
| EDUCATION | 96,075.7 | (5.29) | 1.764 | (6.43) | 1,457,370 | (0.18) |
| BLACK | -21,898.8 | (1.37) | -.374 | (1.46) | -328,024 | (0.19) |
| FEMALE | -494.3 | (.04) | .015 | (0.74) | -1,844 | (0.01) |
| MARRIED | 3,850.6 | (0.36) | .052 | (0.30) | 41,885 | (0.15) |
| INV MILLS | - | - | - | - | 998,014 | (0.19) |
| CONSTANT | -197,117.0 | (6.18) | -3.117 | (6.80) | -3,324,330 | (0.19) |
| OBSERVATIONS | 1,586 | - | 1,586 | | 91 | |
| Log Likelihood | -1,319.9 | | -308.4 | | -1,096.7 | |

[1]All variables refer to the transfer recipient.

insignificantly, in contrast to Chiswick and Cox (1988).[34] Including indicator variables for expecting an inheritance, receiving more than half of wealth via transfers, living in a central city, or living in the south generally reduced the size and significance of coefficients on race.[35]

Table 13 reports estimates of transfers given to children and grandchildren.[36] The tobit estimates show that transfers given rise with donor's age, income, net worth, and education. Blacks appear to give less than observationally equivalent whites, although the effect is only marginally statistically significant. Female headed households and married couples give smaller amounts than single males. These results are in close accord with Cox and Raines (1985).

The decision to give a transfer is estimated in column (2). The pattern and significance of coefficients roughly parallels the tobit estimates. Race is again marginally significant. The level of transfers given is estimated in column (3). Only donor's net worth appears to exert a significant effect on transfers given.

In summary, the estimates in Tables 12 and 13 show a consistently

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[34]The difference in results may have occurred because we do not include households with heads aged 24 or younger. These households are more likely to be attending school than older households and transfer patterns may vary depending on whether the recipient household is a student. For preliminary evidence in this regard, see Zhou (1991).

[35]Cox (1987) uses mean survey-block income as a proxy for parental wealth. The SCF reports both median and mean county income; each had very low t-statistics and negligible effects on other estimates. Cox (1990) and Cox and Jappelli (1990) show that transfers tend to be targeted toward borrowing constrained households. Holding other variables constant, our probit estimates indicate that the likelihood of receiving a transfer rises with education and net worth and falls with age, all consistent with the liquidity constraint hypothesis.

[36]We exclude the high-income sample, households aged 24 or under, those with no children, and Hispanics, Asian Americans and Native Americans.

TABLE 13

Analysis of Transfers Given

| | Tobit | | Transfer Given (Probit) | | Amount Given (Adjusted OLS) | |
|---|---|---|---|---|---|---|
| Variable[1] | Coeff. | t-stat | Coeff. | t-stat | Coeff. | t-stat |
| AGE | 109,396 | (7.46) | 2.521 | (8.06) | 179,021 | (0.65) |
| INCOME | 11,353.6 | (2.04) | .299 | (2.30) | 4,807 | (0.14) |
| NET WORTH | 16,095.1 | (4.69) | .219 | (2.55) | 46,619 | (2.16) |
| EDUCATION | 34,806.4 | (4.79) | .842 | (5.14) | 54,974 | (0.58) |
| BLACK | -13,184.4 | (1.59) | -.307 | (1.65) | -22,694 | (0.59) |
| FEMALE | -13,185.1 | (1.79) | -.409 | (2.39) | -19,697 | (0.43) |
| MARRIED | -18,942.6 | (2.78) | -.447 | (2.86) | -35,328 | (0.73) |
| INV MILLS | - | - | - | - | 77,594 | (0.58) |
| CONSTANT | -153,916.1 | (9.21) | -3.54 | (10.65) | -280,318 | (0.58) |
| OBSERVATIONS | 2,014 | | 2014 | | 164 | |
| Log Likelihood | -2,269.8 | | -494.4 | | -1,932.0 | |

[1] All variables refer to the transfer donor.

negative, but marginally statistically significant effect of being black on transfer participation (the probits) and an unstable and wholly statistically insignificant effect on transfer levels. In contrast, age, net worth, and education are significant determinants of transfer participation, and net worth is the only variable to capture significant variation in transfer levels. Age, of course, cannot explain differences in transfer activities among blacks and whites, since the age distributions of the two groups are similar. The results suggest, however, that differences in net worth and education (or other unobservable differences that are correlated with these factors) play important roles in explaining the differences in transfers across race. In summary, we find no compelling evidence that race per se has important effects on transfer behavior.

## V. Conclusion

This paper makes use of a data set with detailed information on inter vivos transfers and related items, and provides direct evidence on a number of issues relating to intergenerational transfers.

Our emphasis on intended transfers avoids several problems faced by earlier studies of transfers and capital accumulation. We show that measured intended transfers account for 20% of net worth, indicating that a significant share of wealth is accumulated in a manner outside the life-cycle model even if bequests are incorporated into that framework. We also discuss why the true figure is likely to be higher than 20%. For example, bequests, which may be intended, account for an additional 15% of net worth.

Differences between blacks and whites in transfers received over the life-cycle are large relative to differences in net worth between these groups. However, our evidence does not support the notion that race, per se, exerts an independent effect on transfer activity.

## APPENDIX

This appendix describes the construction of alternative estimates of net worth and aggregate transfer flows reported in Table 1.

Net worth: Figures are taken from the Federal Reserve Board's (FRB) Balance Sheets of the U. S. Economy, 1945-89, (pp. 5-6). Because the SCF measures wealth at the time of the surveys, mid-1983 and mid-1986, the FRB figures are averages of end-of-year figures for 1982 and 1983 and for 1985 and 1986.

Transfers Given: Kurz (1984, p. 6) calculates that annual transfers (other than inheritances and transfers within the household) in the PCPP in 1979 were "about $63 billion." Cox and Raines (1985, Table 13.4) show that of total transfers including inheritances, college expenses accounted for 22.9% and inheritances accounted for 25.7%. This implies that non-educational transfers are 69.2% (=1-.229/(1-.257)) of inter vivos transfers and equalled $43.6 billion in 1979. We assume that the ratio of transfers to income (or net worth) was constant from 1979 to 1984. Adjusting $43.6 billion for the rise in income (or net worth) from 1979 to 1984 (see Economic Report of the President (ERP), 1990, Table C-1, and Balance Sheets for the U. S. Economy, 1945-89, pp. 5-6) yields an estimate of 1984 transfer flows of $65.6 billion (or $61.6 billion).

College Expenses: Kotlikoff and Summers (1981, p. 729) estimate that parental contributions were $10.3 billion in 1974. Adjusting this figure by the rise in aggregate tuition and fees paid from 1974 to 1984 (Statistical

Abstract of the United States, 1990, no. 264, p. 157)[37] yields an estimate of $32.3 billion. An alternative estimate of $19.4 billion (30.8% of $63 billion) is based on the PCPP data for 1979. Adjusting for the rise in tuition and fees from 1979 to 1984 yields an estimate of $34.9 billion.

Trusts: According to the Internal Revenue Service (1977, p. 21), net income from trusts in 1974 (the most recent year for which we could find such data) was $10.295 billion. Assuming that trusts earned the Aaa bond rate of .0857 in 1974 (ERP, 1990, C-71) yields a balance of $124.1 billion. Adjusting this figure for the change in net worth between 1974 and 1983 yields an estimate of $309.3 billion in 1983 trust wealth.

Inheritances: Kurz (1984) reports that aggregate inheritances in the PCPP are $9.3 billion but states that this "appears low." Using the figures in Cox and Raines, aggregate inheritances would be .257 * $63 billion / (1-.257), or $21.8 billion. Adjusting this figure for the change in net worth from 1979 to 1984 yields an estimate of $30.8 billion. However, the PCPP inheritance data appear to be questionable.

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[37] Our 1974 estimate of tuition and fees paid is based on the 1975 figure reduced by the percentage change in the higher education price index for 1974-75 (no. 263, p.157) and the annualized percentage change in the number of students in college from 1972-75 (no. 254, p. 152).

TABLE A1

| Variable | Description | Reduction Factor[1] | Mean | Standard Deviation | Min | Max |
|---|---|---|---|---|---|---|
| | Variables Used In Estimating Transfers Received (Table 12)[2] | | | | | |
| AGE | Years | $10^2$ | .4081 | .1075 | .2500 | .7800 |
| INCOME | Average Income ($), 1983-85 | $10^5$ | .3253 | .2505 | -.0004 | 3.000 |
| NET WORTH | Net worth ($), 1985 | $10^6$ | .1260 | .3612 | -.1969 | 9.638 |
| EDUCATION | Years | 10 | 1.3154 | .2504 | 0.00 | 1.700 |
| BLACK | = 1 if Head is Black | 1 | .1715 | .3770 | 0.00 | 1.0 |
| FEMALE | = 1 if Head is Female and Single | 1 | .0971 | .2961 | 0.00 | 1.0 |
| MARRIED | = 1 if Head is Married | 1 | .7257 | .4461 | 0.00 | 1.0 |
| | Variables Used in Estimating Transfers Given (Table 13)[3] | | | | | |
| AGE | Years | $10^2$ | .5028 | .1570 | .2500 | .9500 |
| INCOME | Average Income ($), 1983-85 | $10^5$ | .2949 | .2931 | -.0004 | 5.613 |
| NET WORTH | Net worth ($), 1985 | $10^6$ | .1447 | .3803 | -.1969 | 9.638 |
| EDUCATION | Years | 10 | 1.2314 | .2950 | .0000 | 1.700 |
| BLACK | = 1 if Head is Black | 1 | .2383 | .4261 | 0.0 | 1.0 |
| FEMALE | = 1 if Head is Female and Single | 1 | .1112 | .3144 | 0.0 | 1.0 |
| MARRIED | = 1 if Head is Married | 1 | .6991 | .4587 | 0.0 | 1.0 |

[1] Variables are scaled so that all standard errors are of the same order of magnitude.

[2] All variables in this panel refer to the recipient.

[3] All variables in this panel refer to the donor.

TABLE A2

Analysis of Transfers Received

(High Income Sample Included)

| | Tobit | | Transfer Received (Probit) | | Amount Received (Adjusted OLS) | |
|---|---|---|---|---|---|---|
| Variable[1] | Coeff. | t-stat | Coeff. | t-stat | Coeff. | t-stat |
| AGE | -55,328.9 | (1.72) | -1.659 | (3.35) | -1,079,870 | (0.13) |
| INCOME | -682.4 | (0.43) | .011 | (0.46) | -8,925 | (0.15) |
| NET WORTH | 1,003.6 | (1.41) | .013 | (1.20) | 11,148 | (0.17) |
| EDUCATION | 106,247.3 | (6.09) | 1.766 | (7.34) | 1,337,080 | (0.15) |
| BLACK | -27,707.7 | (1.61) | -.421 | (1.66) | -339,688 | (0.16) |
| FEMALE | -4,782.4 | (0.36) | -.031 | (0.16) | -38,738 | (0.16) |
| MARRIED | -1,003.4 | (0.10) | .008 | (0.05) | -2,201 | (0.01) |
| INV MILLS | - | - | - | - | 913,331 | (0.16) |
| CONSTANT | -226,905.4 | (7.34) | -3.34 | (8.40) | -3,204,780 | (0.16) |
| OBSERVATIONS | 1,802 | | 1,802 | | 117 | |
| Log Likelihood | -1,708.0 | | -391.7 | | -1,406.8 | |

[1]All variables refer to the transfer recipient.

TABLE A3

Analysis of Transfers Given

(High Income Sample Included)

| | Tobit | | Transfer Given (Probit) | | Amount Given (Adjusted OLS) | |
|---|---|---|---|---|---|---|
| Variable[1] | Coeff. | t-stat | Coeff. | t-stat | Coeff. | t-stat |
| AGE | 503,047.2 | (11.24) | 3.446 | (12.43) | -154,513 | (0.65) |
| INCOME | 10,890.6 | (5.21) | .0459 | (2.58) | 7,937 | (2.22) |
| NET WORTH | 5,751.1 | (6.09) | .0350 | (3.17) | 2,500 | (1.68) |
| EDUCATION | 171,679.3 | (8.03) | 1.285 | (9.35) | -102,416 | (1.06) |
| BLACK | -49,177.5 | (1.71) | -.337 | (1.84) | 31,896 | (0.58) |
| FEMALE | -47,297.2 | (1.95) | -.462 | (2.91) | 62,375 | (1.37) |
| MARRIED | -17,305.7 | (0.83) | -.264 | (1.93) | 43,943 | (1.39) |
| INV MILLS | - | - | - | - | -114,477 | (1.34) |
| CONSTANT | -687,593.7 | (13.63) | -4.529 | (15.49) | 381,266 | (1.01) |
| OBSERVATIONS | 2,347 | | 2,347 | | 323 | |
| Log Likelihood | -4,896.6 | | -720.9 | | -4,261.1 | |

[1]All variables refer to the transfer donor.

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