Inheritances and Bequests

James P. Smith*

April 1998

*Senior Economist, RAND. The paper was prepared for a conference in honor of Tom Juster held in Ann Arbor, Michigan in December 1996. This research was supported by grants from the National Institute of Aging and the NICHD. Excellent programming assistance was supplied by Iva Maclennan and David Rumpel. Charles Brown and Michael Hurd provided many useful comments.

Introduction

Important strides have been made in recent years in our understanding of the process of wealth accumulation (see Hurd(1990) for an excellent summary). Encouraged by improved data, theoretical models have focused on more fundamental hypotheses about why people save (Bernheim (1985) and Deaton (1992)). A good deal of the recent literature has attempted to test alternative theoretical models of asset accumulation, of which the life-cycle and bequest motives are the most prominent. While this literature has been growing very rapidly, many central questions remain unanswered. This paper will deal with one of them- the role of inheritances and bequests.

Data restrictions have severely limited our ability to provide informative tests about the role of bequests in shaping the existing extent of wealth inequality in the population as well as the relative importance of bequests as a motive for household savings. The transaction involved-an inheritance left after death- is an inherently difficult one to monitor and frequently escapes detection in traditional household surveys. Since the prospective donor has died, often following a long illness or an extended stay in a nursing home, many have long since attrited from the sample. Even if they were not attritors, the inheritance transaction may occur more than a year after the death of the last surviving spouse. Household surveys typically do not include any post-death interviews with relatives.

Because of these difficulties, most empirical research on inheritances have relied instead principally on estate records (David and Menchik (1985)). While valuable, estate data provide only a limited picture. Many inheritances are below the estate tax thresholds and so do not appear in official estate records.[1] High estate taxation also gives incentives to transfer financial resources to heirs in

other ways. The possibility of fraud in reporting through estate records also can not be dismissed. Finally, estate data can only describe realizations for those who are already deceased and are inherently less informative about the role of bequests for younger cohorts.

This paper uses data on planned bequests and actual inheritances received from the recently fielded Health and Retirement Survey (HRS) and Asset and Health Dynamics of the Oldest Old (AHEAD). Combined these two surveys span the mature and older ages in the life-cycle that are most relevant for bequest behavior. The availability of this data offers another important option to help us understand why so many households have little intention of bequeathing any financial inheritance while so many other American households leave so much.

1. Motives for Bequests

Outside the life-cycle approach, the savings motive that has received the most attention in the economics literature involves bequests (Abel, 1983; Bernheim, Shleifer, and Summers, 1985). The importance of bequests relative to life-cycle factors in accounting for aggregate household savings has been a source of considerable controversy. For example, Kotlikoff and Summers (1981) claim that 50-80 percent of personal wealth in the U.S. is bequeathed while Modigliani (1988) places that number around 20 percent. A number of possible motives for inter-generational bequests have received emphases in theoretical models, including altruistic caring for children, other relatives, or the community at large; strategic or gift exchange, and accidental or unintended bequests associated with the inherent uncertainty of life-spans.

Altruistic bequests have received the most prominent attention in

the work of Becker and his associates (1981)). The driving motive for financial transfers in the altruistic model is that parents care for their heirs (children, grandchildren, etc.). A central component of the Beckerian approach is that bequests may take the form of both human capital investments and/or financial transfers. With declining rates of return to human capital investments, families will initially specialize in these investments until their rate of return equals the interest rate. Only then does the family transfer financial resources through either inter-vivos transfers or bequests. The implication is that financial bequests will only kick in at higher income levels (Becker (1981)). This argument suggests that significant asset accumulation for the purpose of leaving bequests may only be operative at high incomes levels.

With strategic bequests (Bernheim, Shleifer and Summers (1985), Cox (1987)), transfers between the generations represent contingent payments that will be made, conditioned on the observed behavior of the other generation. For example, parents may use the prospect of future bequests to induce their children to provide assistance to them when they are old. This assistance can include companionship, visits from grandchildren, co-residence in a home, or financial support and time care for their parents if they become ill or infirmed. If such services are not rendered, there is an implicit threat to reduce or even eliminate the future bequest.

The final bequest motive centers on uncertainty associated with the date of death (Yaari (1965)). Individuals who are luckier than they had planned may be in the awkward situation of having completely depleted their assets with nothing left to live on. When the date of death is uncertain, people may accumulate more assets to protect against this contingency. Even without any explicit bequest motive, in

this uncertain world, individuals who die early may have positive assets level. We may label these remaining assets at death 'bequests' although it may be better understood as precautionary savings.

2.1. Measurement□Sources of Data

This research relies on two surveys fielded by the Institute of Survey Research at the University of Michigan- the Health and Retirement Survey (HRS) and the Assets and Health Dynamics of the Oldest Old (AHEAD). These data sets have measures of either planned bequests or actual received inheritances. HRS is a national sample of 7,600 households (12,654 individuals) with at least one person in the household 51-61 years old. At baseline, an in-home face-to-face interview was conducted in the fall of 1992 and winter of 1993. Given its focus on the pre-retirement years, the principal objective of HRS is to monitor economic transitions in work, income, and wealth, as well as changes in many dimensions of health status. The first follow-up of HRS respondents was fielded approximately two years after the baseline. The first two HRS waves are used in this research.

Its companion survey--AHEAD--includes 6,052 households (8,204 individuals) with at least one person aged 70 and over in 1994. All sampled households with age-eligible respondents under age 80 were obtained from the HRS area probability screen. To guard against under-representation of the extremely disabled in an household screen, AHEAD added a supplemental sample of respondents aged eighty and above from the HCFA Medicare enrollment file in the same PSUs as the area probability screen. A baseline AHEAD interview was conducted using computer-assisted telephone techniques for those respondents 70-79 while in-person interviews were used for respondents aged 80+. Given its older age span, AHEAD's objectives shift toward a key concern in

its age group: the relationship between changes in physical and cognitive health in old age and dis-savings and asset decline. In both HRS and AHEAD, blacks, hispanics and residents of Florida were over sampled at a rate of two to one. Baseline response rates were 82 percent in HRS and 81 percent in AHEAD. Only the baseline AHEAD survey was available for this research.

In addition to their information on bequests and inheritances, an important advantage of both surveys is that they all contain high quality wealth modules (Smith (1995, 1997)). In both HRS and AHEAD, a very comprehensive and detailed set of questions were asked to measure household wealth. In addition to housing equity, assets were separated into the following eleven categories; other real estate; vehicles; business equity; IRA or Keogh; stocks or mutual funds; checking savings or money market funds; CD's, government savings bonds or treasury bills; other bonds; other assets; and other debt.

2.2. Measurement- Measurement of Bequests and Inheritances

Clues about the relative importance of a bequest motive can be obtained either by looking backward at the value of inheritances received by the current generation or by looking forward at this generation's planned amount of bequests. Both HRS and AHEAD include subjective probability measures of planned bequests. For example, HRS respondents were asked during the baseline interview what importance they place on leaving an inheritance to their heirs. The possible responses ranged from very important to not at all. A quite different set of questions were used in AHEAD to uncover expectations about future financial inheritances. Each AHEAD respondent was asked a sequence of three questions, all of which relied on subjective probabilities. The first question involved ranking on a scale of 0 to

100 the probability that you or your spouse will leave a financial inheritance. With this scale, 0 indicates that there was no chance of any bequest while 100 implied that it was absolutely certain that they would leave an inheritance. The two follow-up questions used an identical scale for the probability that the inheritance would exceed $10,000 or $100,000 in value.[2] Each spouse was asked these questions independently so that within family comparisons are possible.

The second round of HRS switched to the AHEAD question format. The principal difference is that the initial HRS question probed the probability of leaving a bequest of at least $10,000 so that there exists no HRS counterpart to the AHEAD question on the probability of leaving any inheritance at all.[3] Using the same type of probability scale, HRS Wave 2 also asked respondents the chances that they would receive an inheritance within the next ten years with a follow-up question on how large they anticipated that inheritance would be.

In household surveys, questions are asked and answers given, but the precise meaning of either is not always clear. Regarding bequests, respondents in both surveys were asked whether they and their spouse or partner will leave an inheritance above a certain threshold. While the survey intent and this wording would imply that assets left to one spouse after the death of the other spouse should not count as part of the inheritance, we can not be certain that all respondents understood this. Respondents were also told to include property and other valuable items as well as money so that the transfer of housing and other tangible assets would seem to be part of any inheritance. Respondents were not asked only to count transfers that were part of their estates. The frequency of 'yes' responses implies that they probably understood this intent.

Even with these caveats, it is still not transparent how

respondents interpret these probabilities scales. One interpretation is that these subjective probabilities measure preference *intentions* of what respondents want to bequeath. Another view is that these probabilities index respondents' *expectations* of what will actually occur. This may seem a subtle difference, but it gets to the heart of theoretical controversies about the very existence of a bequest motive. For example, respondents may know that their precautionary accumulations due to uncertain life may, in an expected value sense, result in positive assets at the time of their death which their heirs would receive. An *expectations* interpretation would view these answers as summaries of what respondents think will happen- a summary of the interactions of preferences, income, incentives and other constraints. In this paper, while the term intentions to describe these scales, I am agnostic about which interpretation is appropriate.

In addition to these questions on planned bequests, HRS also contains information on the actual value of pass inheritances received. As part of the baseline interview, HRS respondents were asked whether they or their spouse had received inheritances or trusts, or other transfers totalling $10,000 or more from relatives, or $10,000 or more as a beneficiary of a life insurance settlement. They were also asked to report the date on which these inheritances or transfers were received. To value all transfers in the same units, all values were first placed into 1992 dollars. In addition, a three percent real rate of return was assumed so that all dollar values could be expressed in an equivalent 1992 unit. There were no questions in AHEAD about the value of inheritances received.

Tables 1 and 2 list the distribution of responses to the subjective probability of leaving a financial inheritance arrayed by gender, ethnicity, and race. Table 1 provides these probabilities for

leaving any bequest at all (AHEAD only) while Table 2 displays the subjective probabilities for the $10,000 and $100,000 thresholds. Large fractions of respondents in both surveys state that either there is no chance they will leave any inheritance, or that, at best, the amount of any inheritance is likely to be small.[4] For example, about one-third of all AHEAD respondents claim that there is no chance of a bequest larger than $10,000 and almost half of them state that the odds of bequeathing at least that amount are at best fifty-fifty. These odds are considerably larger in the HRS sample where roughly only one in every six respondents report no chance of a bequest greater than $10,000 and two-thirds of HRS respondents put the odds at greater than fifty-fifty.

Not surprisingly, subjective probabilities decline significantly when we raise the bequest threshold to $100,000. The fraction of respondents who are absolutely certain that they will not leave an inheritance worth that amount is two-thirds in AHEAD and more than forty percent in HRS. In contrast in both surveys, only one in five respondents are certain that they will bequeath at least $100,000.

These large numbers of respondents who express little intention of leaving inheritances, especially of reasonable large amounts, is consistent with the common view that financial bequests are not particularly relevant for many American households, whether viewed either as donors or recipients. However, these numbers should not make us ignore the significant fraction of respondents who fully intend to leave financial bequests, often of a considerable amount. The fraction of middle-aged households (51-61 years old in HRS) who say that they will bequeath a significant amount is not trivial. For example, only one in every six HRS respondents report no chance of a bequest greater than $10,000, and three quarters assess the odds at three to one or

more that they will leave at least $10,000.

Similarly, when the bequest threshold is raised to $100,000, one in five HRS respondents are certain that they will bequeath at least $100,000 and forty-three percent of them give at least even odds for that event. As demonstrated below, these HRS numbers on planned bequests are high relative to what these households have received in financial inheritances from their parents, but also relative to what older cohorts (AHEAD) say they intend to leave to their heirs. For example, when the same questions were given to the AHEAD cohort (respondents at least 70 years old), only one in four said that the odds were at least even that an inheritance of at least $100,000 would be left. Such comparisons suggest that there may be important secular trends with the likelihood of receiving or giving financial inheritances rising across generations.

While the behavioral motive that underlie these bequest intentions certainly can not be read from these responses, this data suggest that bequest motives may exist for a sizable proportion of the American population. Moreover, the population who express bequest intentions are the same people who have been engaged in significant amounts of wealth accumulation.

Tables 1 and 2 also document sharp gender, race, and ethnic differences in the subjective probabilities of leaving bequests. In either survey, men report much higher probabilities of leaving financial inheritances than women do. To illustrate first with the HRS sample (households largely in their fifties), 52 percent of men compared to only 42 percent of women are certain that they will leave an inheritance that exceeds $10,000. The size of this gender disparity may actually grow with age since 35 percent of women compared to 52 percent of men in the AHEAD sample report certain prospects of

bequests greater than $10,000.

There are many possible reasons for this gender difference in bequest intentions. First, there may be gender differences in reporting. To cite one example, some respondents may have misunderstood the question and counted as part of inheritances money left to last surviving spouse. Second, preferences for bequests may differ between the sexes. While most of the existing literature argues either for gender neutrality or that women favor their children more than men do (Thomas (1994)), inheritances may be the exception to the rule. In many species, there is evidence of a strong male concern in preserving their genetic heritage.

Third, any attempt to isolate parental preferences must first provide adequate control for the quite different amounts of economic resources men and women sometimes possess. One reason for these disparate resources lies in the greater frequency of divorce and separation among women. The lower income and wealth associated with divorce and separation may impinge on a woman's ability to leave much when she dies. A better sample in which to talk about gender differences in bequest preferences involves only married couples, a subject to which we return below.

Race and ethnic differences in bequest intentions are also large. Only three in every ten AHEAD white respondents gave a zero probability that they will leave an inheritance over $10,000 compared to more than two-thirds of the two minority households in that sample. Similarly, roughly nine in ten older minority households are absolutely certain that their bequests will not exceed $100,000, while one in five older white households are just as certain that it will be above that amount. These racial and ethnic differences in intended bequests are equally large in the HRS sample. A question that we will

address below in our multi-variate analysis is the extent to which such racial or ethnic differences simply reflects the much lower levels of household wealth and income of minority households.

2.3. Bequest Expectations of Married Households

An unusual aspect of these subjective probability questions on bequests is that the same questions were asked of both spouses in married families. In addition to any gender differences in how these questions are interpreted or how accurately they are answered, spouses may not agree about how many resources and in what form they should bequeath to their heirs. To obtain some insight into this question, Table 3 displays the joint distribution of responses in married families.[5]

While there exists considerable overlap in spouses' answers, the overlap is far from perfect. Because respondent answers are concentrated at the endpoints of these scales, the extent of gender similarity is adequately summarized by the fraction of cases in which husbands and wives both gave the same endpoint 0 or 100 response. For example, 46 percent of AHEAD spouses gave the same extreme endpoint response to the $10,000 compared to 34 percent of husbands and wives in HRS households. Similarly, 54 percent of AHEAD and 33 percent of HRS households gave the identical 0 or 100 response when the bequest threshold was raised to $100,000. This narrower gender difference in AHEAD could reflect either a convergence in spousal preferences with age or a reduction in uncertainty about what will happen as the time for bequest realizations grows nearer.

\Insert Table 3about here.\

Although in most cases the discrepancy between spouses is not large, this is not always the case. When the husband states that he is

certain that the family will leave an inheritance of $100,000, one in six of HRS wives and one in five of AHEAD wives state that there is a zero probability of such an event. These large discrepancies between spouses in their answers suggests the possibility of considerable measurement error in responses. Such measurement error is understandable if respondents have not as yet focused much on these matters. Some respondents may be unfamiliar or uncomfortable with the notion of probability scales, even to the point of confusing or switching the meaning of the endpoints. However, unless there exists a systematic gender bias in reporting, measurement error would not explain gender differences.

Even in married families, men still express a higher intention of leaving inheritances than women do. To clarify this point, Table 4 reduces responses to a simple 'yes' or 'no'. This reduction is accomplished by assigning a 'yes' to anyone with a probability higher than .5 and splitting the 50-50 responses between the yes's and no'.

In both surveys and among married families as well as among all respondents, men are more likely than women to report that the family will leave a financial inheritance above either threshold amount. For example, 39 percent of AHEAD husbands reply 'yes' to leaving a financial inheritance in excess of $100,000 compared to about 32 percent of their wives. The magnitude of the gender discrepancy is smaller among married families (especially in AHEAD), suggesting that economic resources are one reason why these gender differences emerge. But the fact that a gender difference remains in married families indicates that differing marital statuses (and the quite different wealth accompanying them) are not sufficient to account for gender differences in bequests intentions.

3-1 Correlates of Bequest Preferences: SES

What factors account for the enormous variation in expected bequests in these samples? A natural place to start is that the less well-to-do simply have less income or wealth to devote to bequests. We know that households save at quite different rates and that the poor save at much lower rates than the affluent. A partial explanation for higher savings rates among the wealthy may be that they are the only households engaged in significant asset accumulation to leave to their heirs. To depict the relation between economic status and intended bequests, Tables 5 and 6 plot mean and median subjective bequest probabilities by deciles of household wealth and income. To complete this portrait, Table 7 lists the fraction of individuals who assign a zero probability to a bequest event.

Bequest probabilities rise rapidly across either the income or wealth distribution. For example, the median household in the highest income or wealth decile in either survey is virtually certain that they will leave an inheritance of more than one hundred grand. In contrast, the median household in the lowest decile is just as certain that they will leave no inheritance at all.

These sharp bequest-SES gradients are not surprising. First, within decile levels of income and especially wealth increase sharply in the upper third of these distribution, a reflection of the extreme positive skew to these distributions. Second, theoretical reasoning also points to a possible non-linearity in this function. As mentioned above, inter-generational bequests take the form of human capital investments as well as financial transfers. With declining rates of return to human capital investments, families initially specialize in these investments in their children so that financial bequests will only appear at higher income levels (Becker (1981)).

While there is a quite systematic positive relation of expected bequests across all dimensions of SES, there also exists considerable heterogeneity in these intentions, even among households with similar amounts of economic resources. For example, while most households in the top wealth decile state that they will leave large bequests, among those in the top wealth decile, one in twenty AHEAD households are absolutely certain that they will not leave an inheritance that exceeds only $10,000. Similarly, among those in the median wealth decile, 41 percent of HRS households state that there is no chance at all of bequeathing $100,000 while 11 percent of those households in the same decile say that it is certain that they will do so. Some of this heterogeneity is due to measurement error in these subjective probabilities. But some of this variation is no doubt real and parallels the extreme variation in savings behavior in the population. While economic resources are likely to be an important reason why households differ in their bequest behaviors, variation among similarly situated households in intended bequests may be large.

3.2. Correlates of Bequest Preferences: Health and Bequests

One factor that has received little emphasis in economic modelling of bequests involves the health of respondents. Table 8, which arrays mean and median subjective bequest probabilities by the self-reported current health of respondents, documents that differences in planned bequests by health status can be enormous. For example, more than half AHEAD respondents in poor health report that they are absolutely certain that will not leave an inheritance larger than $10,000. At the same time, more than half of households in excellent health in the same survey are absolutely certain that they will leave such an inheritance. An almost identical pattern describes

the bequest- health relation among the younger HRS respondents.

Health may be associated with bequests for many reasons. First, a non-trivial portion of current wealth (from which the future bequest emanates) may be a consequence of current and past health conditions of household members (Smith-Kington (1997)). Poor health could deplete wealth through several mechanisms. Individuals in poorer health are less able to work, and if they do work, they typically will work fewer hours. This work effect directly reduces income and savings, and eventually the ability to bequeath.

Even among people with the same current household wealth, health status may be associated with the prospects and amount of future bequests. Especially within the age range in the HRS sample, poorer health may still reduce current and future period labor supply, earnings and savings. Controlling for current wealth, this adjustment through labor supply and earnings is less relevant for respondents in the AHEAD sample. In either sample, households with a person in poor health face higher current and future medical expenses which may deplete their ability to save. Counteracting this effect, current poor health may lower life-expectancy which would tend to leave larger resources available for heirs. Health may also affect the marginal utility of consumption. If the marginal utility of consumption increases with health, then individuals will want to consume more in periods when they are healthier (Lillard and Weiss (1993)).

3.3. Inheritances Received

Since they link generations, inheritances received and desired bequests represent a continuum and may exhibit similar patterns. In addition to questions about future bequests, HRS also contains

information on the actual value of passed inheritances received. HRS respondents were asked in the baseline interview whether they or their spouse had received inheritances or trusts, other transfers totalling $10,000 or more from relatives, or $10,000 or more as a beneficiary of a life insurance settlement. They were also asked the date on which these inheritances or transfers were received.[6]

Table 9 lists HRS prevalence rates of these inheritances alongside the mean and median value among recipients. When viewed in their role as recipients, inheritances have not yet been of much consequence for most HRS households. The typical HRS household reports no financial inheritances in any form, although some have received a great deal. Only 30% of households in their fifties received any financial inheritance with a mean transfer of $44,000 across all households and almost $150,000 among recipients. Only three (one) percent of all HRS households were given inheritances worth more than $292,000 ($625,000). While almost one in three white households report a financial inheritance, only 10% of minority households have received any inheritances. The amount of these inheritances are quite unevenly distributed. Among recipients, the mean inheritance is close to $150,000, three times its median level.

These low levels of inheritances imply that the large amount of wealth inequality among HRS households is primarily not a consequence of financial wealth being transmitted across generations with the poor unable to give and the well to do insuring that their heirs remain at the top through financial inheritances. To see this more concretely, Table 10 shows the extent of wealth inequality if we subtract out that part of current wealth that flowed from past financial inheritances.

While the two columns in Table 10 are certainly not identical, our perception of the extent of wealth inequality is largely the same

when the direct effect of financial inheritances are removed. If wealth dispersion is not due to financial inheritances, then all we have left are persistent inter-personal differences in rates of return and people saving at different rates from their income.

The information available on intended bequests and inheritances actually received can be examined together. Using once again for simplicity of exposition the same simple separation of responses into yes or no used in Table 4, Table 11 compares HRS and AHEAD respondents. Given the roughly 25 year difference in ages in the two samples, the AHEAD respondents can be thought of as representing the parents of the HRS respondents. With this generation lag, the expectations of bequests have risen about 50 percent. This will certainly understate the secular growth in bequests as the AHEAD sample represent only the survivors from their generations. Since mortality is strongly correlated with wealth, average bequest intentions in AHEAD overstate the prevalence of bequests for those over age 70. This bias also appears when we compare bequest intentions in AHEAD with the actual receipts in HRS which are only 30 percent. While some of this difference reflects understandable discrepancies between givers and receivers, the AHEAD prevalence rates are too high (because of mortality selection). The HRS prevalence on receipts are also too low since the process is not over and many of these HRS respondents will receive inheritances in the future. Respondents were asked in Wave 2 whether they had received any inheritances between the waves and whether they anticipated that they would receive an inheritance over the next ten years. If these responses are added to baseline inheritances already received 42 percent of HRS respondents will eventually receive inheritances.

4.1. Multivariate Models of Bequests

In this section, data descriptive models of respondents' subjective probabilities of leaving bequests are summarized. Using both HRS and AHEAD, the two subjective probability scales estimated are the probability of leaving a bequest in excess of $10,000 and $100,000. Because these subjective scales are bounded by 0 and 100 with many observations at the endpoints, the models were estimated by a two-limit Tobit model. The empirical models include a number of generic variables that correspond to the theoretical discussion above; birth cohort, the number of heirs, health status, level of economic resources, medical costs, and retirement income replacement rates. Table 12 presents our estimates for the probability of leaving an inheritance greater than $10,000 while Table 13 lists estimates obtained when the inheritance threshold was raised to $100,000.

All models include a set of categorical variables indexing birth cohort of respondents. As with any cross-sectional survey, stratifying sample respondents based on their cohort (age) lends itself to both life-cycle and across-cohort interpretations. On the one hand, bequests should be generally higher among younger cohorts who will have higher levels of life-time economic resources.[7] The pure aging or life-cycle effect is more difficult to predict a priori. First, there is a question of the impact of mortality selection. Especially in AHEAD, as age increases, the survey samples only the more relatively robust, healthy and wealthy survivors of the original birth cohort. In fact, one reason for their later than normal demise is that these respondents may be more forward looking in many aspects of their lives. Consequently, the sample of survivors who appear in AHEAD may be more likely to have an operative bequest motive, imparting a positive age gradient to these subjective probabilities. The impact of

this mortality selection bias is probably less severe among those in the HRS sample age range.

A more subtle question is what happens to the likelihood of a bequest as a person ages. As respondents become older and closer to the point at which such decisions must finalized, they may think about bequests more seriously and their plans may become less vague. The direct implication of this lower uncertainty is that the fraction of endpoint responses (e.g., respondents certain one way or the other) may increase with age. Older respondents with less time left may have less need for precautionary savings due to uncertain life. Consequently, a larger fraction of their remaining wealth may be slotted for bequests.

The birth cohort dummies in these models indicate an asymmetric relation of age to the subjective probabilities of leaving inheritances. In the HRS age range, intentions to leave inheritances are somewhat stronger among more recent cohorts (younger sample members). In contrast, there exists a strong positive age gradient in the AHEAD sample with older individuals reporting higher probabilities of leaving inheritances. Since bequest intentions are much higher in HRS than in AHEAD[8], the evidence of a secular drift towards more inheritances is powerful. The estimated pattern of cohort dummies within the HRS sample is also evidence of rising prevalence rates for leaving bequests over time. In contrast, the cohort gradient estimated in AHEAD may be strongly influenced by mortality selection as the older sampled survivors are those with a stronger bequest motive compared to the original members of their birth cohort. In addition, a lower need for precautionary savings at very old ages implies that a larger fraction of wealth may be bequeathed.

The presence of children have been used in prior research to

decipher the importance of a bequest motive (Hurd (1990)). This argument begins with the premise that a bequest motive should be stronger for those with children compared to childless households. Using the original Retirement History Survey (RHS), Hurd (1987) provided such a test by comparing non-housing wealth changes of retired individuals and couples with and without children. Hurd argues that if households with children have a stronger bequest motive, their wealth profiles should be flatter (e.g., they will dis-save less) than households without children. Indeed, if the stronger assumption is made that childless couples have no bequest motive, Hurd's comparison provides a test of whether there exists an operative bequest motive at all. Based on a series of tests using the RHS, Hurd could not find any statistically significant difference in wealth profiles of households stratified by whether or not they had children.

Our models provide similar contrasts using the subjective probability scales in HRS and AHEAD. The results obtained are quite different in the two samples. For respondents in the HRS age range, the presence of children is associated with a greater expressed intent to bequeath an inheritance above either threshold. However, this intent weakens as the number of children born increases. In contrast, bequest motives in the AHEAD sample appear similar between households with a few children or none at all, but large family sizes lower the expectation of leaving an inheritance in the AHEAD sample.

One question that has motivated the inclusion of children in bequests models is whether comparisons between childless couples and those with children can be used to deduce whether there is an operative bequest motive. The absence of quantitatively strong effects of children in models such as those summarized in Tables 12 and 13 have led some researchers to conclude that there is not. Table 14

takes a closer look at this issue by listing mean subjective probabilities of leaving bequests by whether kids exist within selected wealth deciles. Similar to the results obtained from the multi-variate models, there are no large difference between those with and without children. However, what is striking about Table 14 is not the absence of this difference, but the strong intent to leave bequests among childless households. It would appear that childless households can not be assumed to have little bequest motive. Instead, they may simply leave their bequests to others; charities, nieces, nephews or other relatives, and institutions and causes that they favor. This result turns the original question on its head by asking why childless individuals plan on leaving so many bequests.

Still, it seems puzzling that, even allowing that childless households have bequest motives, that this motive appears as strong as the bequest intention in households with children. Some resolution of this puzzle may flow from recognizing that financial transfers through inheritances are only part of the total inter-generational transfer. In particular, human capital transfers such as the education of children can be substantial. For many families, human capital is by far the dominant form of transfer to their children. Since childless couples have little margin for such human capital transfers, our result that childless and households with children plan the similar amounts of financial transfers is consistent with much large total inter-generational transfers among households with children. The negative effect of very large number of children especially in the AHEAD sample may indicate that the total amount of human capital transfers in these large families leaves little room remaining for financial transfers.

There exists a strong gradient of these planned bequests with all

alternative SES measures. In all samples, college graduates plan to leave more than high school graduates who in turn have bequests intentions that exceed those who did not graduate from high school. Similarly, the intent to bequeath typically rises with either household income or wealth, albeit in a highly non-linear fashion. The income and wealth estimates in these tables are obtained from linear splines with nodes at terciles of income and wealth. Paralleling the patterns described in the descriptive cross-tabs earlier, estimated income and wealth coefficients decay quickly as we move up the SES scale. For example, the estimated slopes of planned bequests are thirty times smaller in the upper third of the income distribution compared to the lower third.

In addition to variables measuring current income and wealth, two additional SES variables are included in the HRS model. These variables measure the fraction of current household income that will eventually be replaced with two types of annuities- pensions and social security.[9] Presumably, the larger the fraction of current income that will be replaced by annuities, the less the household has to use their assets to finance their retirement consumption. Consequently, high replacement rates should be positively associated with intended bequests.

The empirical estimates in Tables 12 and 13 support this interpretation. At the low $10,000 threshold, both pension and social security income substitute in favor of higher intended inheritances. Given the progressivity of social security benefit structure, social security annuities are unimportant when the threshold is raised to $100,000. Even at this relatively high inheritance threshold, a higher level of pensions annuities relative to current income still encourage bequests.

Even after controlling for the other co-variates in these models, there remain quantitatively large and statistically significant demographic differences in planned bequests. In particular, blacks respondents are much less likely to plan on a bequest of any amount even after accounting for their current level of economic resources.

A persistent result from all models is that women are far less likely than men to report that they anticipate leaving inheritances. This finding is particularly intriguing since it also exists when the model is estimated only over married spouse present households. Since a couple typically jointly leaves bequests, at first blush, one would think that this relationship should be symmetric.

There are many reasons for this anomaly, many of which rely on the fact that husband's death typically precedes his wife's. When answering this question, men may be including their wife's recipiency of assets at the time of his death as a bequest even though the intent of the question was clearly otherwise. Second, men may have a lower estimate (relative to his wife) of the yearly consumption flow and health costs expenditures his wife may incur in the years after his death. Given that men typically die first, assets at the time of the husbands' death will eventually be divided between the remaining lifetime consumption of the wife and the amount of assets left for a legacy. While assets have been jointly accumulated by husbands and wives, men may see the financial worth of the family as more of a direct consequence of their past earnings. More so than their spouses, they may believe that their principal link to their heirs is a financial one.

Finally, men are known to be more knowledgeable about household assets. Their inferior knowledge may lead women to systematically understate household wealth, especially if its true size has not been

fully revealed by their husbands. Whatever the reasons for this gender discrepancy, the question remains which partner is a more accurate predictor of what the actual level of inheritances will eventually be.

In simple one way comparisons, current health status was strongly correlated with bequests intentions in both surveys. When the complete set of co-variates are included in these models, however, current health remains a significant correlate of intended bequests only in the HRS sample. Among individuals in their fifties, those in excellent health plan on significantly higher bequests to their heirs than do those respondents whose current health is not as good. However, this strong relationship actually disappears by the time respondents are over age 70. This sharp difference between the two samples may indicate that the health through earnings mechanism may be an central pathway underlying this relationship. In the age span covered by the HRS sample (e.g., respondents in their fifties), poorer health reduces future labor supply and earnings lowering the resources available for inheritances. This causal pathway is much less relevant in the AHEAD age range.

The models in Table 12 and 13 experimented with a number of health cost variables obtaining quite mixed results. Current out of pocket medical costs have no systematic effect on intended bequests. The principal health cost variable that has a statistically significant effect on intended bequests is the subjective probability scale of whether medical expenses will use up all of your family's saving during the next five years. These estimates imply that an increase in this subjective probability reduces planned bequests.

A persistent, finding in all models is that a higher subjective probability of living to a future age actually increases intended bequests. Almost any standard life-cycle model would suggest the

opposite. For any given amount of wealth, greater life expectancies imply longer periods over which assets will have to be used (and depleted) to order to sustain consumption. This longer period of depletion would then imply fewer remaining assets to bequeath. One possible explanation for the anomaly concerns the way respondents answer subjective probability questions. Those respondents who are optimists by nature may give high probabilities to both questions on life expectancy and the probability of leaving bequests.

Conclusions

This paper examined intentions to leave bequests to heirs as well as the past receipt of financial inheritances from parents. The bequest intentions were derived from new subjective probability scales used in the HRS and AHEAD surveys. While many people do not intend to bequeath, a significant and growing fraction of Americans appear to be accumulating assets in part to leave to their heirs.

Among other things, these bequests appear to be closely related to the health of respondents. Our results may indicate that health shocks and bequests may be close substitutes. Individuals may plan on leaving non-trivial sums to their heirs. However, if they experience episodes of poor health with high out-of-pocket expenses that often accompany those episodes, they use dollars that would have gone to their heirs instead of significantly lowering their own consumption.

REFERENCES

Abel, Andrew B. 1983. Bequests and Social Security with uncertain lifetimes," American Economic Review 75:777-791.

Becker, Gary S. 1981. Treatise on the Family. Cambridge, MA: Harvard University Press.

Bernheim, B. Douglas. 1987. The economic effects of social security: Toward a reconciliation of theory and measurement. Journal of Public Economics 33(3):273-304.

Bernheim, B. Douglas, Andrei Shleifer, and Lawrence H. Summers. 1985. The strategic bequest motive. Journal of Political Economy 93(6):1045-1076.

Cox, Donald. 1987. Motives for private income transfers. Journal of Political Economy 95:508-546.

David, Martin, and Paul L. Menchik. 1985. The effect of Social Security on lifetime wealth accumulation and bequests. Economica 52:421-434.

Deaton, Angus. 1992. Understanding consumption. Oxford, U.K.: Clarendon Press.

Hurd, Michael D. 1990. Research on the elderly: Economic status, retirement, and consumption and saving. The Journal of Economic Literature 28:565-637.

Hurd, Michael D. 1989. Mortality risk and bequests. Econometrica 57(4):779-813.

Hurd, Michael D. 1987. Savings of the elderly and desired bequests. American Economic Review 77:298-311.

Kotlikoff, Laurence J., and Summers. 1981. The role of intergenerational transfer in aggregate capital accumulation. Journal of Political Economy 89(4):706-732.

Modigliani, Franco. 1988. Life cycle, individual thrift, and the wealth of nations. American Economic Review 76(3):297-313.

Mulligan, Casey B. 1995. Economic and Biological Approaches to Inheritance: Some Evidence. Working paper.

Smith, James P. 1995. Racial and ethnic differences in wealth. Journal of Human Resources 30:S158-S183.

Smith, James P. 1997. Wealth inequality among older Americans. Journal of Gerontology, forthcoming.

Smith, James P., and Raynard Kington. (1997). Demographic and economic correlates of health in old age. Demography, February.

Thomas, Duncan. 1994. Like father, like son, or like mother, like daughter: Parental education and child health. Journal of Human Resources 29(4):950-989.

Yaari, Menahem E. (1965). Uncertain lifetime, life insurance, and the theory of the consumer. Review of Economic Studies 32:137-150.

Notes

[1] For example, Mulligan (1995) reports that only 5-10% of those who died past age 45 file estate tax returns. The current threshold at which estate taxes start is $600,000 for an individual and can be as high as $1,200,000 for a married couple.

[2] Respondents were not asked the second question on whether the amount would exceed $10,000 if they had previously said that the probability of leaving any inheritance was zero. Similarly, they were not asked the third question about the amount exceeding $100,000 if they either said that there was a zero chance of leaving any inheritance or a less than thirty-one percent chance of leaving more than $10,000.

[3] Respondents who reported that there was a zero probability of leaving an inheritance of $10,000 or more were not asked the follow-up question on leaving an inheritance totalling $100,000 or more.

[4] Apparently, a common characteristic of subjective probability questions is that responses tend to bunch at the 0, 50, and 100 values. This bunching is not unique to questions about inheritances. See Hurd (1996).

[5] Because the question on whether you would leave any inheritance was not asked in HRS, to conserve space the remaining tables in the paper are restricted to the two threshold questions about $10,000 or $100,000.

[6] To value all transfers in the same units, within each category, all values were first put into 1992 dollars. In addition, a three percent real rate of return was assumed so that all values could be expressed in an equivalent 1992 unit.

[7] While wealth is included in these models, the across-cohort

argument in the text still applies. To illustrate with a concrete example, in tables 11 and 12, we are comparing a 50 year old and 60 year old with the same wealth. Given rising wealth with age over this age-span, the 50 year old will have more wealth in ten years than the 60 year old has now.

[8] The strong mortality bias in the AHEAD sample suggests that raw differences in intentions actually understate the extent of cohort drift toward more bequests among younger cohorts.

[9] See Smith (1995) for a derivation.

Table 1
Probability of Leaving any Inheritance
(Percent Distribution in AHEAD)

Probability	All	Male	Female	White	Black	Hisp.
0	27	19	31	23	52	62
1-49	12	10	13	12	13	4
50	14	12	15	14	9	7
51-99	14	17	13	15	9	6
100	33	42	28	36	18	21

Table 2
Probability of Leaving an Inheritance of at Least
10,000 or $100,000

Probability	All	Male	Female	White	Black	Hisp.
> $10,000						
A. AHEAD						
0	34	24	40	29	66	71
1-49	6	6	7	6	7	2
50	8	6	8	8	6	3
51-99	11	12	10	12	5	5
100	41	52	35	45	17	20
B. HRS						
0	16	13	19	13	35	40
1-49	7	7	8	7	9	8
50	10	9	11	10	11	10
51-99	20	20	20	21	14	12
100	46	52	42	49	31	30
> $100,000						
A. AHEAD						
0	65	54	72	62	90	88
1-49	5	6	4	5	2	2
50	6	8	5	7	3	3
51-99	6	8	5	7	1	2
100	17	23	13	19	4	5
B. HRS						
0	43	37	48	39	66	67
1-49	15	16	14	15	13	10
50	10	10	9	10	6	6
51-99	13	14	12	14	6	7
100	20	23	17	22	9	11

Table 3

% of Married Men and Women Who Expect to Leave an Inheritance

	Women					
Men	0	1-49	50	51-99	100	All
> $10,000						
A. AHEAD						
0	13	1	2	2	3	21
1-49	2	1	1	1	1	6
50	1	1	2	1	1	7
51-99	1	1	2	4	5	14
100	4	3	3	9	33	53
ALL	22	8	9	17	44	
B. HRS						
0	5	1	1	1	2	11
1-49	2	1	1	1	2	6
50	1	1	1	2	3	9
51-99	2	2	3	6	8	21
100	3	3	5	11	29	53
ALL	13	8	11	22	45	
> $100,000						
A. AHEAD						
0	42	2	2	2	2	49
1-49	4	1	1	1	0	7
50	3	1	2	2	2	9
51-99	4	1	1	2	3	11
100	5	1	2	4	12	24
ALL	57	7	8	10	18	
B. HRS						
0	24	4	2	2	2	35
1-49	7	4	2	2	1	16
50	3	2	1	2	2	10
51-99	3	2	2	4	4	15
100	4	3	3	5	9	24
ALL	41	15	10	14	19	

Table 4
% Responding 'Yes' to Bequest Questions

	Married Families		All Respondents	
A. AHEAD	Men	Women	Men	Women
$10,000	70	68	67	49
$100,000	39	32	35	20
B. HRS				
$10,000	77	72	76	67
$100,000	44	39	42	33

Table 5

Mean Expectations of Leaving an Inheritance by Economic Deciles

Deciles: Highest to lowest	Any Inheritance		>$10,000		>&100,000	
	Income	Wealth	Income	Wealth	Income	Wealth
AHEAD						
10 th	83	85	88	90	67	75
9 th	73	77	79	83	49	56
8 th	67	72	71	77	35	44
7 th	62	65	67	71	29	34
6 th	55	63	57	65	19	18
5 th	51	53	52	56	18	10
4 th	45	43	42	40	13	7
3 rd	39	34	37	30	7	5
2 nd	26	18	20	13	4	2
1 st	18	8	14	4	3	1
HRS						
10 th	NA	NA	90	92	74	78
9 th	NA	NA	85	87	59	66
8 th	NA	NA	81	85	49	57
7 th	NA	NA	79	81	45	49
6 th	NA	NA	74	78	37	41
5 th	NA	NA	72	72	33	30
4 th	NA	NA	64	67	27	22
3 rd	NA	NA	60	56	24	14
2 nd	NA	NA	49	46	16	11
1 st	NA	NA	37	25	12	7

Table 6
Median Expectations of Leaving an Inheritance by Economic Deciles

Deciles: highest to lowest	Any Inheritance		>$10,000		>&100,000	
	Income	Wealth	Income	Wealth	Income	Wealth
AHEAD						
10 th	100	100	100	100	97	100
9 th	90	95	100	100	50	50
8 th	80	90	100	100	0	0
7 th	75	75	90	100	0	0
6 th	50	75	75	90	0	0
5 th	50	50	50	50	0	0
4 th	50	40	20	20	0	0
3 rd	20	15	0	0	0	0
2 nd	0	0	0	0	0	0
1 st	0	0	0	0	0	0
HRS						
10 th	NA	NA	100	100	93	100
9 th	NA	NA	100	100	75	80
8 th	NA	NA	100	100	50	60
7 th	NA	NA	100	100	50	50
6 th	NA	NA	90	98	20	30
5 th	NA	NA	90	90	10	10
4 th	NA	NA	80	80	0	0
3 rd	NA	NA	75	60	0	0
2 nd	NA	NA	50	50	0	0
1 st	NA	NA	5	0	0	0

Table 7
Fraction of Respondents with Zero Subjective Probabilities

Deciles: highest to lowest	Any Inheritance		>$10,000		>&100,000	
	Income	Wealth	Income	Wealth	Income	Wealth
AHEAD						
10 th	5	4	5	5	18	12
9 th	8	6	10	8	33	23
8 th	11	7	14	8	44	33
7 th	11	10	16	13	47	44
6 th	17	13	24	17	57	55
5 th	21	17	26	22	55	64
4 th	26	22	32	32	59	66
3 rd	30	32	38	42	66	70
2 nd	41	48	47	58	61	72
1 st	47	57	54	61	65	66
HRS						
10 th	NA	NA	2	1	8	7
9 th	NA	NA	4	4	17	13
8 th	NA	NA	6	4	23	18
7 th	NA	NA	7	4	29	25
6 th	NA	NA	9	7	37	32
5 th	NA	NA	10	10	41	41
4 th	NA	NA	16	14	50	53
3 rd	NA	NA	20	22	55	63
2 nd	NA	NA	32	30	64	69
1 st	NA	NA	45	55	74	77

Table 8
Expectations of Leaving an Inheritance by Health Status

	Any Inheritance	At Least $10,000	At Least $100,000
A. Means			
AHEAD			
Excellent	65	69	39
Very Good	63	65	34
Good	54	54	26
Fair	46	47	17
Poor	36	35	13
HRS			
Excellent	NA	80	39
Very Good	NA	75	34
Good	NA	66	26
Fair	NA	52	17
Poor	NA	40	13
B. Medians			
AHEAD			
Excellent	90	100	2
Very Good	75	95	0
Good	50	70	0
Fair	50	50	0
Poor	5	0	0
HRS			
Excellent	NA	100	50
Very Good	NA	99	30
Good	NA	80	10
Fair	NA	50	0
Poor	NA	10	0

Table 9
Value of Inheritances Received

	Percent Receiving	Recipient	
		Mean	Median
White	34	148,578	58,839
Black	11	85,598	42,478
Hispanic	10	105,707	43,917
All	30	144,517	57,451

Table 10

Effect of Inheritances on Household Wealth

	HRS Household Wealth	HRS Household Wealth Inheritances
95	843,598	780,641
90	504,278	469,378
70	193,152	179,143
50	97,506	89,739
30	39,563	33,919
20	16,352	10,969
10	923	923

Source: Smith (1995).

Table 11
Secular Trends in Bequest Intentions and Receipts

	Yes to Expected Bequest		Received Inheritance	
	$10,0000	$100,000		
AHEAD		56	26	NA
HRS		71	38	30