Tapping Assets in Retirement: Which Assets, How, and When?

James Poterba
MIT and NBER

Steven Venti
Dartmouth College and NBER

David A. Wise
Harvard University and NBER

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ABSTRACT

As growing numbers of households reach retirement age with assets in personal retirement accounts such as IRAs and 401(k)s, the pattern of withdrawals from these accounts will play an increasingly important role in determining the future course of personal retirement assets. In this paper, we use data from the Health and Retirement Study (HRS) and the Survey of Income and Program Participation (SIPP) to study the post-retirement evolution of personal retirement assets and of household financial assets more generally. We find that these assets tend to be conserved after retirement, particularly for individuals who are in stable household settings throughout the period when we observe them. For individuals in continuing two-person families, for example, personal retirement assets tend to increase at ages through 85, reflecting a withdrawal rate below the rate of return on these assets during our sample period. We find similar results for individuals who are single throughout the period we observe. Declines in assets tend to occur around the time of changes in family status.

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As recently as three decades ago, retirement saving in the United States was based heavily on employer-provided defined benefit plans. Benefits after retirement were typically received in the form of lifetime annuities. Today, personal retirement accounts—401(k), IRA, Keogh, and others plans—have become the primary form of saving for retirement. The Investment Company Institute (2008) reports that in 2007, private sector defined contribution assets totaled $9.2 trillion, compared with assets of $2.4 trillion in traditional private defined benefit plans. At the time of retirement, the participant in most defined contribution plans has sole control of the accumulated assets in these plans and must determine when to withdraw assets from the plans. To date, assets held in personal retirement accounts have rarely been annuitized, raising concern that some participants will draw down assets precipitously and run the danger of outliving their assets. In this paper, we consider the drawdown of assets in 401(k)-like plans. We are particularly interested in the extent to which these assets are used to support general consumption versus financial needs associated with shocks to family status or health care needs.

Our analysis is based on data from the Health and Retirement Study (HRS) and the Survey of Income and Program Participation (SIPP). Because the HRS survey does not allow a complete accounting of either 401(k) assets or withdrawals for persons no longer employed, we rely more heavily on the SIPP data to focus on the accumulation of retirement assets. We find that personal retirement assets tend to be conserved after retirement. Indeed, the personal account assets of continuing two-person families tend to increase at ages through 85, at least in our sample period. The retirement assets of continuing one-person families, although lower than the assets of continuing two-person families, also tend to increase throughout this age range. Personal retirement assets do decline, sometimes precipitously, when two-person families become one-person families through the death of a spouse, divorce, or separation. A striking feature of the data is the low level of assets accumulated by households who we can identify, as a result of our panel data, as approaching the time when they will transit from a two-person to a one-person household, relative to continuing two-person households. We find essentially the same pattern of drawdown when we consider total assets as we find for retirement assets.

While the way households tap retirement account assets at older ages is an active subject of research, and different data sets provide different pictures of withdrawal behavior, our appear to be consistent with a number of other sources of information on distributions from IRAs and other retirement plans. For example, Bryant (2008) reports that 2004 tax return data suggest that only 24 percent of taxpayers between the ages of 60 and 69 with IRAs took withdrawals, with the percentage rising to 93 percent for those over the age of 70. Holden and Schrass (2009) present data from the 2008 Investment Company Institute IRA Owners Survey suggesting that 60 percent of withdrawals from traditional IRAs in 2008 were made by households headed by someone over the age of 70. In addition, they report that many IRA-owning households do not plan to begin withdrawals from these accounts until they reach the age of 70 ½, the age at which required minimum distributions commence. Our results suggest relatively slow rates of withdrawal of assets in personal retirement accounts,

even once withdrawals commence. This provides some context for results such as those reported by Bershadker and Smith (2006), who study 2002 tax return data relating to IRA withdrawals. They find that 42 percent of IRA owners first "tap" their accounts for withdrawals within two years of retirement.

Our findings also appear to be consistent with earlier work that has considered the draw-down of home equity among retirement-age households. Venti and Wise (2001, 2004) report that home equity is rarely used to support general consumption in retirement, but that it is often used in the event of shocks to family status, like death of a spouse or entry into a nursing home. Megbolugbe, Sa-Aadu, and Shilling (1997) and Banks, Blundell, Oldfield and Smith (2007) found similar results. Davidoff (2007) concludes that households may preserve their home equity to finance potentially large health expenses, thus crowding out long-term care insurance.

This paper is divided into six sections. In the first section, we consider the proportion of personal retirement plan participants that make withdrawals at each age and the proportion of assets that are withdrawn at each age. In the next section, we consider how total assets—including financial assets and housing as well as retirement plan assets—change after retirement. We focus on how asset accumulation differs by family status—continuing two-person families, families that transition from two- to one-person families, and continuing one-person families.

Our analysis in the second section is related to a large number of papers on the evolution of wealth after retirement although our focus is on how the drawdown of wealth is related to changes in family status. Hurd (2002) finds that most components of the portfolios of the elderly grow after retirement. The exception, he notes, is that there is, on average, a decline in the probability of owning a home after age 80. In a recent paper, Hurd and Rohwedder (2008) consider the adequacy of resources after retirement, with a focus on consumption. They distinguish education groups and conclude that persons with low education may not be adequately prepared for retirement. Coile and Milligan (2006) find that holdings of housing and vehicles decline with age but holdings of financial assets increase. They also find that shocks, particularly widowhood, are a major source of asset drawdown, particularly for home ownership. However, their estimates do not reveal what the age profile of housing and vehicle ownership is in the absence of shocks to health and family status.

In the third section, we examine the change in reported balances in personal retirement accounts at various ages, but we disaggregate individuals by the nature of their family status at the start and end of the observation period. We distinguish those who are in continuing two-person households, those who are in single-person households at the start and end of the period, and those who experience shocks to household status during the observation interval. In this section, and in section four, we show that persons who experience a shock to family status at some time during the period we study had lower assets prior to the shock than persons who did not experience a shock to family status.

Our analysis in the first four sections is based on age-specific patterns of asset accumulation. In the fifth section, we organize the data by cohort and we compare our findings from the initial HRS cohort, the initial AHEAD cohort, and the SIPP. The results appear broadly consistent across the various data sets. There is a brief conclusion.

1. Withdrawal of Personal Retirement Account Assets

In this section the likelihood that the owners of personal accounts make a withdrawal at each age and the proportion of account balances that are withdrawn. In the next section we consider the accumulation of asset balances.

We rely primarily on data from the Survey of Income and Program Participation (SIPP). For comparison we also present partial data from the Health and Retirement Study for 2004. Unlike the SIPP data, however, the HRS provides reliable information only on balances and withdrawals from IRA and Keogh plans but not on 401(k) accounts, the most important component of personal retirement saving. A large proportion of IRA balances represent rollovers from 401(k) plans, however. The information on directly held 401(k) balances in the HRS is nevertheless incomplete for persons who are no longer employed; we do not use these data in our analysis.

We use data from the SIPP to calculate withdrawals from all personal retirement accounts. Respondents are asked to provide balances in IRA, Keogh, 401(k), and Thrift plans at six different points in time between 1997 and 2004. Respondents are also asked to provide the amount received from a draw on an IRA, Keogh, 401(k) or Thrift Plan in each month during the 1997 to 2004 period. We use the asset balance at the beginning of the year and withdrawals made in the subsequent 12 months to calculate the withdrawal rate. This procedure yields data on changes in asset balances, withdrawals, and withdrawal rates for three separate panels: for the years 1997 to 1998, 1998 to 1999, 1999 to 2000 from the 1996 panel of the SIPP; for 2001 to 2002, and 2002 to 2003, from the 2001 panel of the SIPP; and for 2004 to 2005 from the 2004 panel of the SIPP.

There are three data restrictions and conventions. First, we restrict the sample to respondents that remain in the sample and report withdrawals for all twelve months following the report of the initial retirement plan balance. Second, for about two percent of the sample the sum of monthly withdrawals exceeds the initial asset balance. Typically the household reports a zero initial retirement plan balance, but positive subsequent withdrawals. We have excluded these cases from the analysis. Third, the unit of observation in the SIPP is the individual, but we present results at the household-level by grouping persons, treating unmarried persons as single-person households and matching spouses to create two-person households.

For some analyses we rearrange the SIPP data to show withdrawal profiles by cohort. For example, we can obtain data for households headed by someone who is

60 in 1997, 61 in 1998 and so forth through age 67 in 2004. We identify each cohort by the age in 1997, so the cohort "C60" refers to the cohort of households headed by someone of age 60 in 1997. Note that these cohort data are in part a true panel (the same sample of persons responds in 1997, 1998, 1999, and 2000; another sample responds in 2001, 2002 and 2003 and a third sample responds in 2004 and 2005) and in part a "synthetic cohort," because the nine years of data, from which we obtain six "changes" in asset balances, are obtained from three different panels.

We begin with the data from the SIPP arranged by cohort in Figure 1-1. The figure shows the percent of households that have positive balances in retirement saving plans for selected cohorts between the ages of 60 and 84 in 1997. Profiles for seven different cohorts—identified by age in 1997—are shown. This figure displays large "cohort effects." Cohorts that reach a given age in a later year (younger cohorts) are more likely to have a retirement saving plan than cohorts attaining the same age in an earlier year (older cohorts). For example, 30.8 percent of households age 64 in 1997 (labeled C64) had a positive balance in a retirement saving plan, but only 45.5 percent of households that attained age 64 in 2004 (labeled C57) had a positive balance, as highlighted by the circles in the figure. Looking over the whole range of the data, 54.3 percent of persons in the C54 cohort (who were age 61 in 2004) had a positive balance in 2004 while only 3.5 percent of persons in the C84 cohort (who were age 84 in 1997) had a positive balance in 1997.

The presence of substantial cohort effects is not surprising given the recent growth of retirement saving plans. IRAs and 401(k) plans were first allowed by law in 1982 and were not adopted at many firms until much later. Thus workers who reach age 64 in 1997 were age 49 when retirement saving plans first became available in 1982; workers age 64 in 2004 were age 42 in 1982 are much more likely to have been able to participate in a retirement saving plan at some time before their retirement.

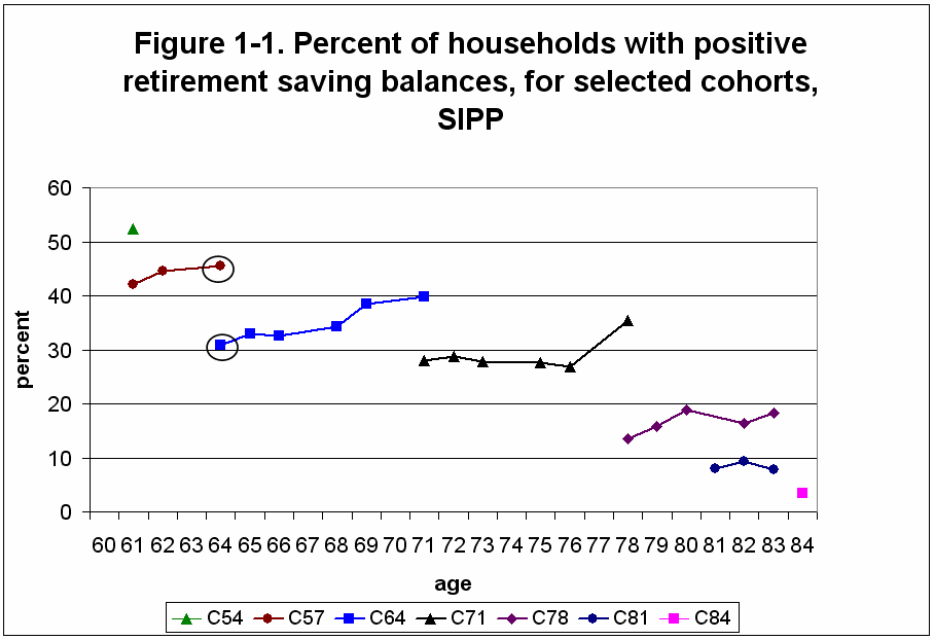


Figure 1-2 shows the percent of households that made withdrawals from personal accounts. This figure was calculated from cohort data on withdrawals. For each age, we have cohort data for six different cohorts (e.g. age 64 in 1997, age 64 in 1998, etc,). The figure is based on the average of the percents for the three youngest cohorts at each age. On average, the percents are somewhat higher for the oldest three cohorts. The percent of households making a withdrawal grows slowly from about 10 percent at age 60 to age 69, when just over 20 percent of households withdrew funds. Between age 69 and age 71, however, the percent increased to about 65 percent. The figure suggests that most households were conserving personal retirement assets and only began withdrawals when required minimum distribution (RMD) rules forced them to.

The percent of households over the age of 70 ½ making withdrawals is less than 100 percent. In part, this may be because holders of Roth IRAs are not subject to required minimum distributions, which apply to traditional or rollover IRA balances. It is also possible that the holder of an account in the household may be younger than the head of the household (the household age reported in the figure) and thus may not be required to make a distribution. It is also possible that the SIPP respondent took a distribution by rolling assets from a personal retirement account to another investment account, and consequently did not regard this action as a withdrawal. IRS data, presented in Bryant (2008), suggest that the number of age 70-75 taxpayers reporting IRA withdrawals is 87 percent of the number reporting beginning-of-year IRA holdings. This percentage is higher than the statistics from SIPP suggest.

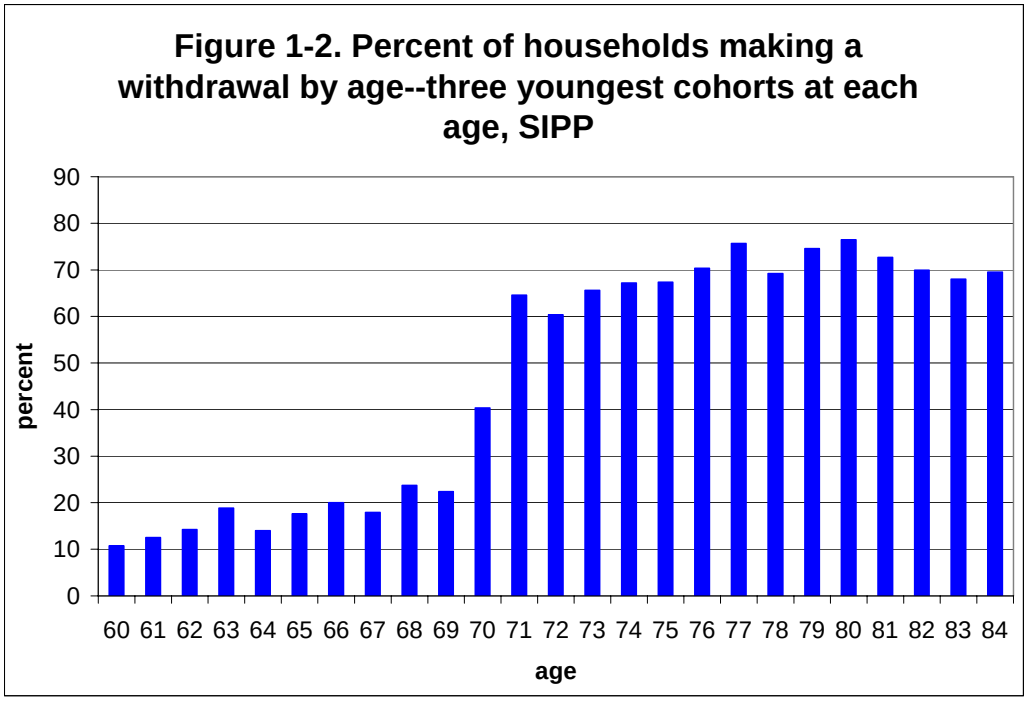
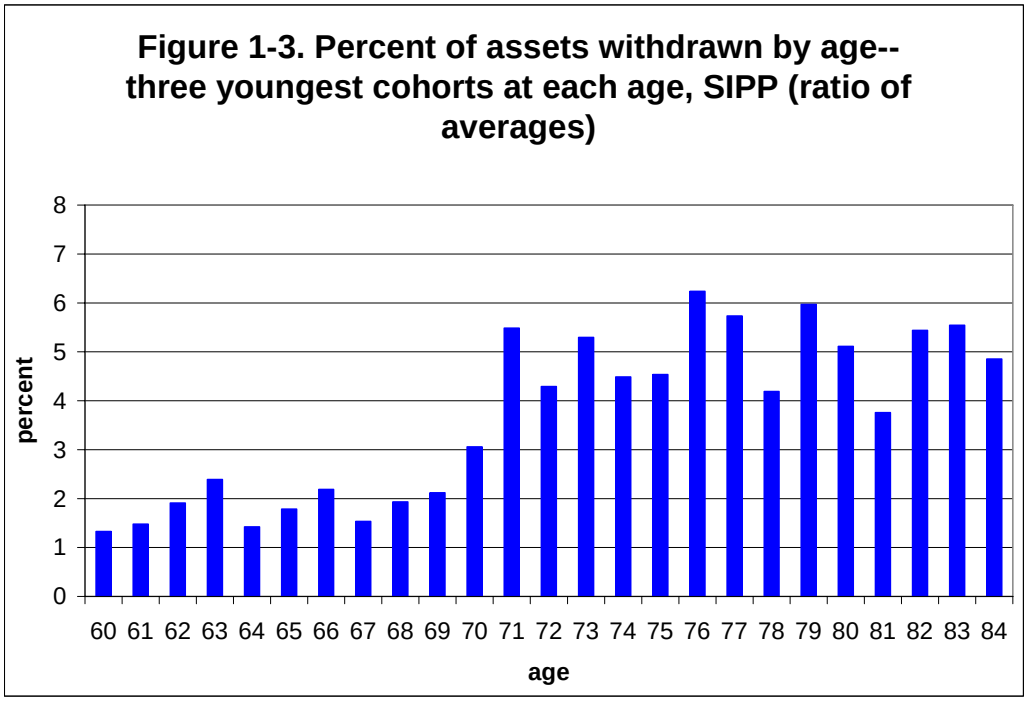


Figure 1-3 shows the percent of balances withdrawn in a year. Again, we present the average for the youngest three cohorts observed at each age. The percent is the ratio of average withdrawals to the average initial asset balance-- equivalent to the sum of withdrawals over all persons divided by the sum of initial balances. (We do not show the average of ratios because this calculation is very sensitive to low reported asset balances.) Before age 70, the overall rate of withdrawal is typically less than 2 percent. Two percent would typically be below the average rate of return earned on personal retirement assets and thus the balance would continue to grow.

A person who was age 71 in 2004 would have been required to withdraw a minimum distribution from traditional, but not Roth, IRAs beginning in the year when she turned 70 ½. The RMD is obtained by dividing the account balance by an applicable distribution period taken from the Uniform Lifetime Table published by the IRS. For example, for an unmarried person age 72 or for a married person age 72 whose spouse is not more than 10 years younger, the distribution period was 25.6 years in 2006. Thus the required minimum distribution is 1/25.6 = 3.9 percent of the IRA balance in that year. By age 80 the required minimum distribution is 5.3 percent and at age 90 it is 8.8 percent. The withdrawal percents in Figure 1-3 range between 4 and 6 percent between ages 72 and 80. The average is 5.0 percent. As required by the distribution rules, the percent withdrawn increases with age after age 70. Even at these older ages, however, the average balance may continue to increase even though withdrawals are increasing if the return earned on retirement plan assets is high enough. We provide direct evidence of this in the next section.



Figures 1-2 and 1-3 suggest that contrary to commonly expressed concerns, most households do not withdraw personal retirement account balances until the required minimum distribution age is attained, and even at this age the average withdrawal percent seems unlikely to lead to large reductions in account balances. These low rates of withdrawal suggest that balances held in retirement saving accounts are likely to continue to grow with age provided the underlyng assets earn returns similar to historical averages.

We can make some comparisons between the SIPP data and the HRS data. As noted above, however, the HRS data only contain complete information on balances in IRA and Keogh plans. Figure 1-4 shows the percent of HRS households that made withdrawals from these accounts in 2004, together with the SIPP data for the same year. The HRS data used here includes households from all cohorts—the HRS, CODA (Children of Depression), AHEAD, EBB (Early Baby Boomer) and WB (War Babies) cohorts. In later analyses we present results based on the initial HRS cohort and, separately, results based on the initial AHEAD cohort. The HRS data pertain to households with an IRA and or a Keogh account who had withdrawn funds from the account over a two year period. The SIPP data pertain to households with IRA, Keogh, 401(k), or Thrift accounts who withdrew funds over a one-year period. The general pattern for the two surveys is the same, although the SIPP percents are typically lower than the HRS percents both before and after the age of RMDs.

Figure 1-4. Percent of households in 2004 that made a withdrawal during previous two years (HRS) or previous year (SIPP)

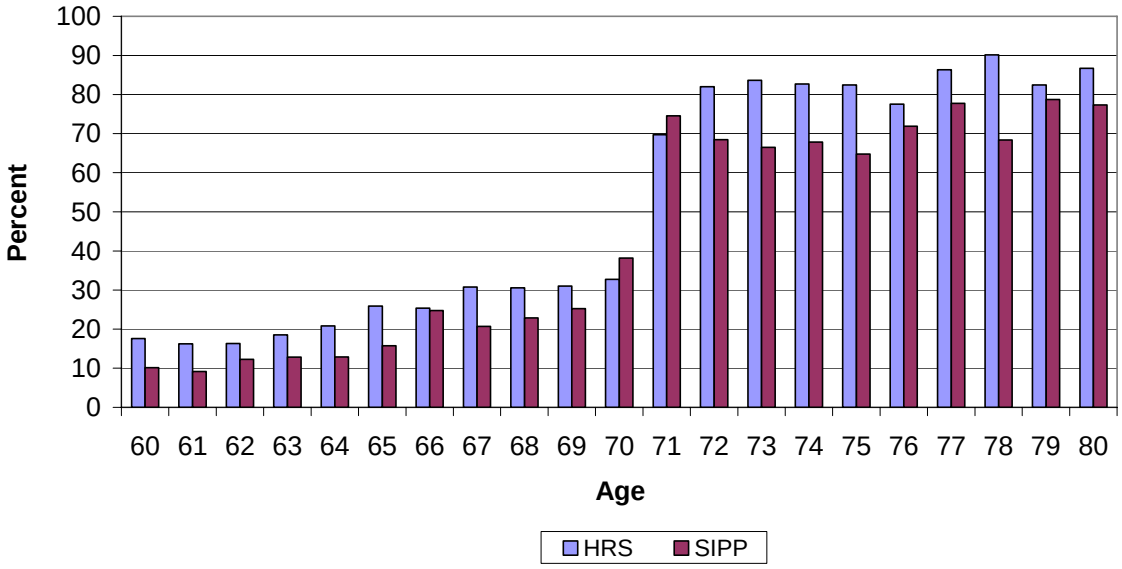
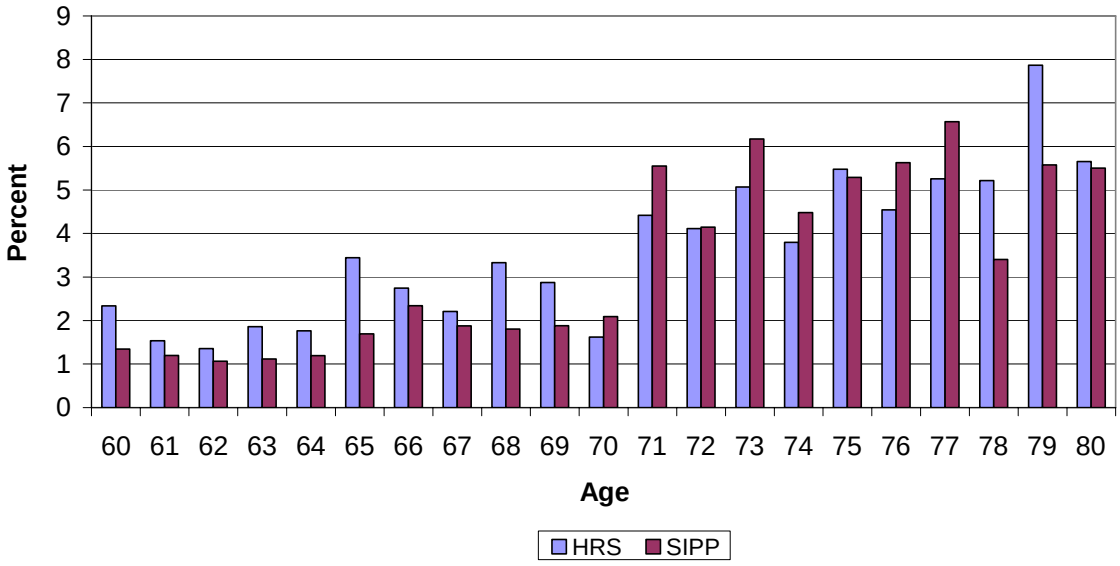


Figure 1-5 compares the percent of assets withdrawn in the two surveys, based on the ratio of the average of withdrawals to the average of balances. The reported amount withdrawn over a two-year period in the HRS has been divided by two so that both withdrawal rates are on an annual basis. The two series show a similar pattern, although prior to age 70 the HRS reported withdrawals are higher than those reported in SIPP—2.28 versus 1.60 percent. After age 70 the averages are about the same—5.14 versus 5.23 percent. Thus the key conclusion from the two data sets is the same. Households on average tend to conserve personal account assets and many don't withdraw assets until forced to make withdrawals by the minimum distribution requirements.

Figure 1-5. The percent of personal retirement saving balances withdrawn on an annual basis, HRS and SIPP (ratio of averages), 2004



2. Asset Accumulation

We use data from the SIPP and the HRS (both the original HRS cohort and the AHEAD cohort) to examine the change in assets as households age. In particular we aim to understand how a change in family status affects the accumulation of assets. We focus first on total assets and then on assets in personal retirement accounts. We first explain the data that we use and how we organize the data for analysis.

Our unit of observation is the person rather than the household. We have panel data from three different sources. From the HRS we follow persons first surveyed in 1992 when they were age 51 to 61 and subsequently resurveyed every other year

through 2006 (when they were age 65 to 75). We compute asset growth over the two-year intervals between the seven survey waves, from 1992 to 1994, 1994 to 1996 and so forth through 2004 to 2006. From the original Asset and Health Dynamics Among the Oldest Old (AHEAD) survey (now part of the HRS), we follow persons age 70 to 80 first surveyed in 1993 and then resurveyed in 1995, 1998, 2000, 2002, 2004, and 2006. For these persons we consider changes from 1993 to 1995, 1995 to 1998, 1998 to 2000, 2000 to 2002, 2002 to 2004, and 2004 to 2006.

Finally we also have data from three panels of the SIPP. From the 1996 panel of the SIPP we obtain data for 1997, 1998, 1999 and 2000 and thus we calculate asset changes from 1997 to 1998, 1998 to 1999, and 1999 to 2000. From the 2001 panel of the SIPP we have data for 2001, 2002, and 2003, and thus changes from 2001 to 2002, 2002 to 2003, and 2003 to 2004. From the 2004 panel of SIPP we have data for 2004 and 2005, and thus the change from 2004 to 2005. Altogether we have six year to year changes in SIPP, from 1997 to 1998, 1997 to 1998, and so forth to 2004 to 2005. The SIPP data differs in one important way from the HRS data. The SIPP collects data for all respondents age 15 and older (but top-codes age at 85). We try to choose a sample from the SIPP that "matches" as closely as possible the age ranges in the two HRS samples.

For each of the three data sources we consider assets at the beginning and end of each interval, although the widths of the intervals differ. They are one year in the SIPP and, with one exception, two years in the HRS and the AHEAD.

For each person in each survey we categorize family status at the beginning of the interval as belonging to either a one-person (1P) or to a two-person (2P) household. Over the interval between surveys a person initially in a 1P household may remain in a 1P household or may attract another individual and become a 2P household. We designate the evolution of family status as “fs11” if the household is a one-person household in both years and “fs12” if the respondent remarried (or partnered) during the two year interval. Similarly, we classify a person initially in two-person households as "fs22" if the person remains in a two-person household, "fs21(div)" if the person divorces or separates by the end of the interval and "fs21(wid)" if the person’s spouse dies by the end of the interval. The sample sizes for persons classified as fs12 are quite small so this group has been excluded from many of the figures presented below.

To illustrate this organization of the data, we show HRS assets by family status in 1992, the level of assets in 1994, and the change in assets between the two years. Table 2-1 shows these data for persons age 51 to 61 in 1992 (in year 2000 dollars). Total assets include equity in owner-occupied housing, IRA and Keogh balances, other financial assets, and the value of vehicles, less debt. The value of business assets and other real estate are excluded. Balances in 401(k) plans are excluded from the HRS and the AHEAD data because a complete 401(k) series cannot be obtained from these sources, but 401(k) assets are included in the SIPP data. We present both medians and means because the latter statistic is sensitive to a few large outliers.

Table 2-1. Median and mean total wealth in 1992 and 1994 for HRS respondents age 51 to 61 in 1992 by family status

MEDIANS	family status type	wealth in 1992	wealth in 1994	change	*percent change*
	fs11	29,127	33,059	3,932	*13.5*
	fs12	39,367	76,890	37,523	*95.3*
	fs21(wid)	67,207	69,004	1,797	*2.7*
	fs21(div)	64,999	31,313	-33,686	*-51.8*
	fs22	123,560	135,689	12,129	*9.8*
MEANS					
	fs11	81,210	90,671	9,461	*11.7*
	fs12	108,579	159,432	50,853	*46.8*
	fs21(wid)	141,233	141,198	-35	*0.0*
	fs21(div)	139,148	96,500	-42,648	*-30.6*
	fs22	206,571	230,878	24,307	*11.8*

The table shows one of many "changes" that can be obtained from the HRS, AHEAD, and SIPP surveys. The key results we present are based on graphical descriptions of the changes by family status for each of the intervals and for each of the data sources. In most instances we report changes in medians, although we report means in some cases. In either case, reporting errors can have an important effect on the changes between the beginning and the end of an interval. Although we have experimented with different ways to address the data errors, the results presented in this paper are based on the raw data without “corrections” for outliers or apparent misreporting.

Before looking at the results, we show sample sizes by interval to draw attention to the selection issues that arise in studying the change in assets within and between intervals. For example, consider the change in assets of fs22 families in Table 2-1 in the 1992-1994 interval. Persons will only appear in the fs22 data for the next interval, 1994-1996, if they remain in the two-person group for the next two years. Those who will lose a spouse in the next two years will be in the fs21 group in 1994-1996. Those who remain in the fs22 category will not lose a spouse for at least two more years. This is the selection issue. Those who will lose a spouse tend to have lower assets than those who will not and thus those who remain in the sample longer have more assets.

In Poterba, Venti, and Wise (2009a), we present evidence on the precision of estimates of changes in assets like those in Table 2-1. The large sample size and large magnitude of the changes in fs22 asset holdings lead to relatively precise estimates of these accumulation measures, and we are typically able to reject the null hypothesis of no change in asset holdings for those experiencing an fs21(div) change in family status.

The summary statistics in Table 2-2 give a general, but not a specific, indication of the extent of selection. For example, consider the decline in the number of persons in the HRS fs22 group between the1992-1994 and the 1994-1996 intervals (6,365 to 5,732). Part of the decline in the number of persons occurs because some of the individuals in the fs22 group in 1992-1994 move to one of the fs21 groups in 1994-1996. This is the key selection issue. Persons in the fs21 group have lower assets than persons in the fs22 group. But part of the decline in the number of persons is also due to attrition from the sample. In addition, persons in the fs12 group in 1992-1994 are in the fs22 group in 1994-1996 if they remain married for the next two years. Persons who continue in the fs11 group also tend to have greater assets than those who leave the sample because of death.

Table 2-2. Number of persons in each interval by change in family status

HRS persons age 51 to 61 in 1992

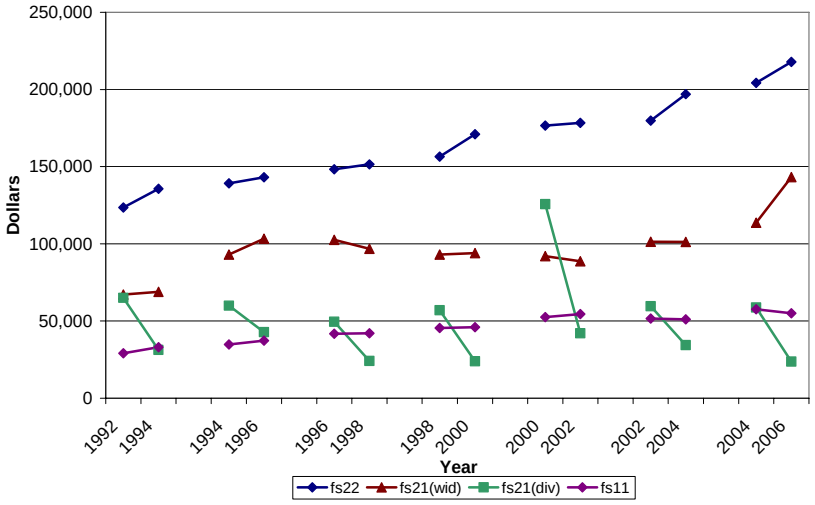
type	1992-1994	1994-1996	1996-1998	1998-2000	2000-2002	2002-2004	2004-2006
fs22	6,365	5,732	5,344	4,978	4,614	4,382	4,017
fs21(wid)	108	111	133	131	127	118	153
fs21(div)	121	69	64	41	38	32	40
fs12	88	96	71	65	58	65	44
fs11	1,598	1,559	1,535	1,554	1,554	1,630	1,634
total	1,686	1,655	1,606	1,619	1,612	1,695	1,678

AHEAD persons age 70 to 80 in 1993

type	1993-1995	1995-1998	1998-2000	2000-2002	2002-2004	2004-2006
fs22	2,371	1,813	1,412	1,043	771	551
fs21(wid)	187	213	181	142	118	86
fs21(div)	7	19	7	4	3	
fs12	29	29	13	15	12	10
fs11	1,778	1,613	1,601	1,468	1,318	1,138
total	223	261	201	161	133	96

We now summarize the asset changes from each of the surveys. Figure 2-1 summarizes wave-to-wave total wealth profiles for HRS respondents age 51 to 61 in 1992. Several features of these data stand out.

Figure 2-1. Change in median of total assets between years, by family status, for persons 51 to 61 in 1992--HRS



First, the assets of persons who remain married (fs22) over an interval increase. All assets are reported in year 2000 dollars. In 1992 the median of assets of fs22 persons was $123,560; by 2006 the average of assets of persons who remain in the fs22 group was $217,801. Second, the assets of persons in the fs11 group also increase in most intervals; the last interval is the only exception. Third, the assets of fs11 families are much lower than the assets of fs22 families, but grew at about the same rate over the fourteen year period of our sample. The ratio of assets of the fs22 to the fs11 group varies from over 4 in 1992 to less than 3.5 in some years. Overall, the ratio was about the same in 2006 as in 1992.

Fourth, the assets of two-person households that will become one-person households (fs21) during an interval are much lower at the beginning of an interval than the assets of continuing two-person households, those in the fs22 group. The difference is especially large between continuing fs22 and fs21(divorce) families. Averaged across all intervals, at the beginning of each interval the median assets of fs22 households are a little over 2.5 times as large as the median assets of fs21 households. Fifth, within each interval there is a large drop in the median assets of fs21(divorce) families. The average (over all intervals) is a 51 percent decline in the median assets for fs21(divorce) families. . The average change in median assets for fs22 families is 5.9 percent and for fs21 families is 3.0 percent.

Figure 2-2. Change in median of total assets between years, by family status, for persons 70 to 80 in 1993--AHEAD

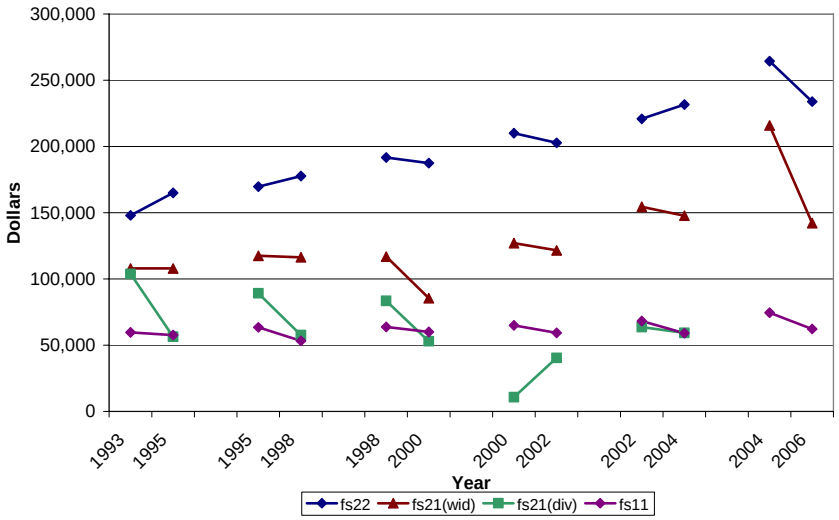


Figure 2-2 shows asset changes for persons in the AHEAD cohort that were age 70 to 80 in 1993. They are followed for six waves until 2006, when they were age 83 to 93. Recall that households in the original HRS cohort, who were studied in Figure 2-1, were age 51 to 61 in 1992 and age 75 to 85 in 2006. Persons in this older AHEAD cohort were 70 to 80 in 1993 and 83 to 93 in 2006. Thus there is some age overlap between the two cohorts, for example, the original HRS cohort contains households age 75 in 2006 and the AHEAD cohort contains households age 75 in 1993. A comparison of the two cohorts reveals that the assets of continuing two-person (fs22) AHEAD families that were 70 to 80 in 1993 are much lower than the continuing two-person HRS families who were 75 to 85 thirteen years later in 2006. The differences between the cohorts for fs11 and fs21 households, however, are not very large.

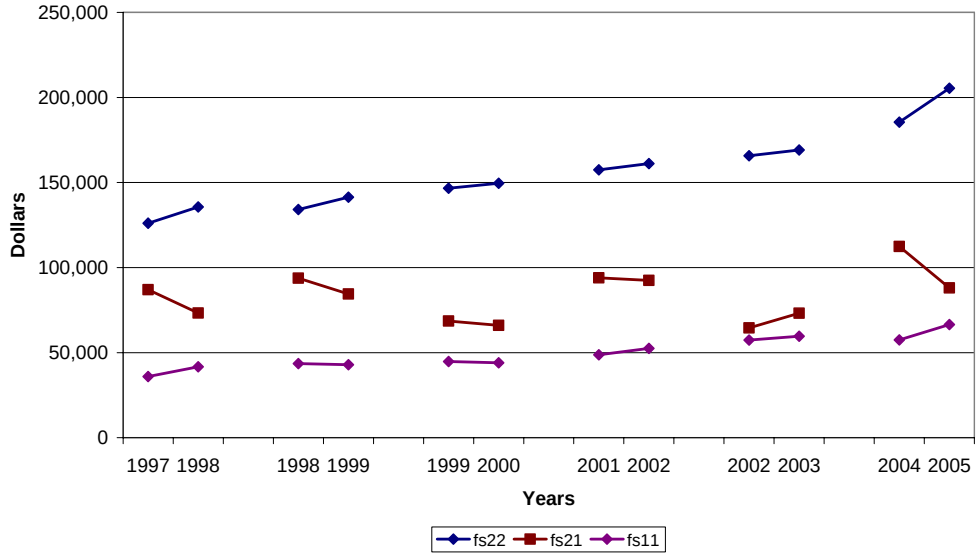
The assets of continuing two-person AHEAD households increase, on average, as they age. The average change over the six intervals is 0.6 percent; the average excluding the last interval is 3.1 percent. The assets of continuing fs11 persons decline, however, by an average of -10.6 percent. As with the younger HRS cohort, the beginning of interval assets of fs21(divorced) persons are much lower than the beginning of interval assets of fs22 persons and there is a large drop in the assets of fs21(divorced) persons. The change in assets of fs21(widowed) persons is also smaller on average than the change for fs22 persons. Again, and perhaps most importantly, the initial assets for both fs21 groups are much lower than the initial assets of fs22 persons.

The reason for the lower start-of-interval wealth of the fs21 families is an open question. It is possible that families in which a spouse died in a interval had poorer health than the continuing two-person families prior to the interval in which the spouse died. This could have contributed to lower asset balances, either through chronic limitations on earning capacity or through depletion of assets to cover medical costs.

This is one dimension of the health-wealth correspondence. Two person families who would be divorced or separated in an interval also had lower assets prior to the divorce or separation. A deeper understanding of these findings awaits further analysis.

The SIPP data show a pattern of asset change that is very similar to the pattern based on the original HRS and AHEAD cohorts. Because the SIPP surveys persons across the whole age range in each wave, these data can be "matched" to the age groups surveyed in the original HRS and AHEAD cohorts. The intervals that we show based on the SIPP do not coincide exactly with the HRS and AHEAD intervals, however. Figure 2-3 shows SIPP results for six one-year intervals, beginning in 1997-1998, for persons 51 to 61 in 1992. The first SIPP interval, 1997-1998, overlaps with the HRS 1996-1998 interval. The asset levels of the two surveys in these intervals are similar. The assets for fs11 households are somewhat larger in SIPP and the assets of fs22 households are somewhat lower.

Figure 2-3. Change in median of total assets between years, by family status, for persons 51 to 61 in 1992--SIPP

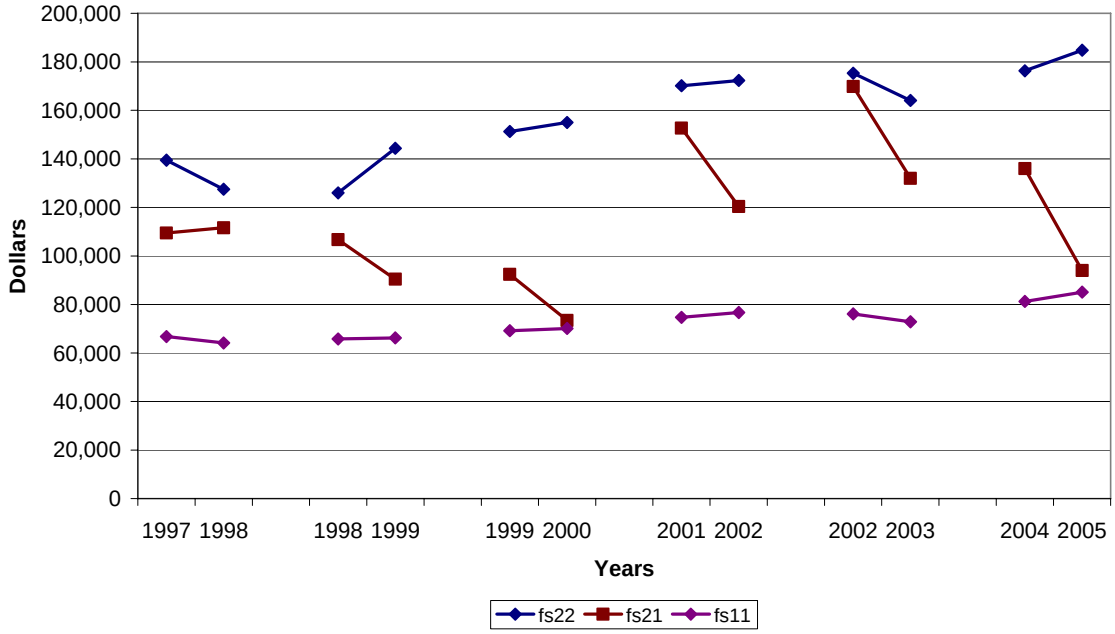


The pattern of asset changes within intervals is very similar in the two surveys. The assets of continuing two-person families increase in each interval and the assets of fs11 persons typically increase as well. Because we observe households over a one-year interval in the SIPP, the sample size is not large enough to distinguish between fs21(widowed) and fs21(divorced), however. The combined fs21 category exhibits an average drop of 6.6 percent in median assets. Based on the HRS data, it seems reasonable to assume that the bulk of the decline arises from divorce.

Figure 2-4 shows asset changes for annual intervals based on SIPP data for persons 70 to 80 in 1993. The first SIPP interval, 1997-1998, overlaps with the AHEAD interval 1995-1998. In these interval the initial asset level for fs11 and fs21 persons is about the same in the two surveys, but the asset level for fs22 persons is higher in the

HRS than in the SIPP survey. The assets of fs22 persons in the last intervals in the two surveys differ substantially and are substantially lower in the SIPP. The pattern over time is very similar in the two surveys, however. The SIPP data, like the AHEAD data, show an increase in the assets of fs22 persons in most intervals. The SIPP data show an increase in the assets of fs11 households in most intervals as well, while the AHEAD data show a decrease in the assets of fs11 households in all intervals. The fs21 transition—including both fs21(widowed) and fs21(divorced)—in the SIPP data shows a large decline in assets in all but one interval.

Figure 2-4. Change in median of total assets between years, by family status, for persons 70 to 80 in 1993--SIPP



For comparison, Figures 2-5 and 2-6 are analogous to Figures 2-1 and 2-2 and show means instead of medians for the HRS and the AHEAD samples respectively. The general pattern of results is similar to the pattern revealed by the medians, although the levels are much greater.

Figure 2-5. Change in mean of total assets between years, by family status, for persons 51 to 61 in 1992--HRS

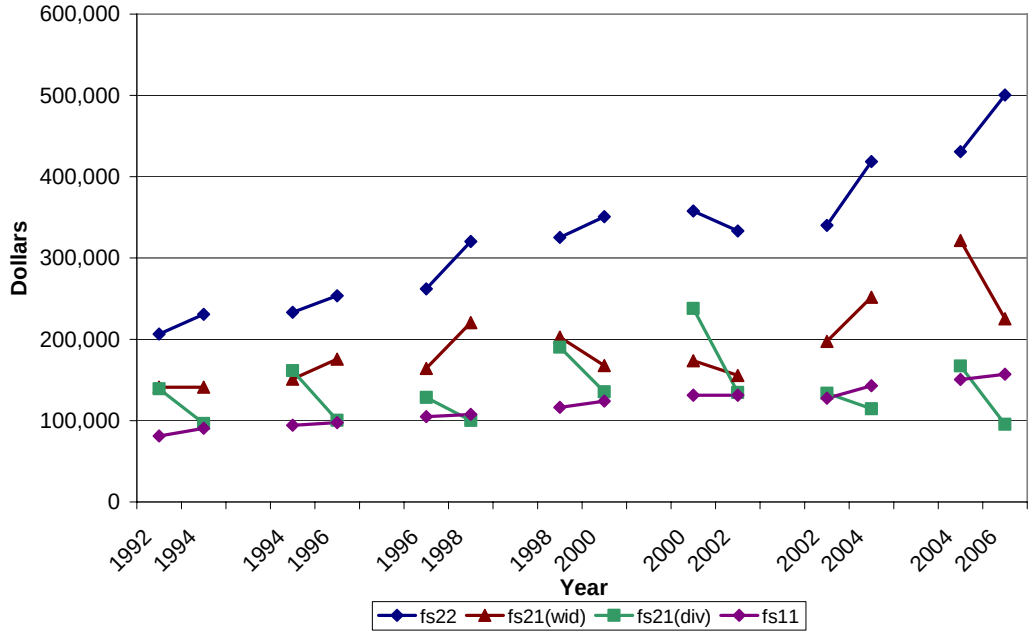
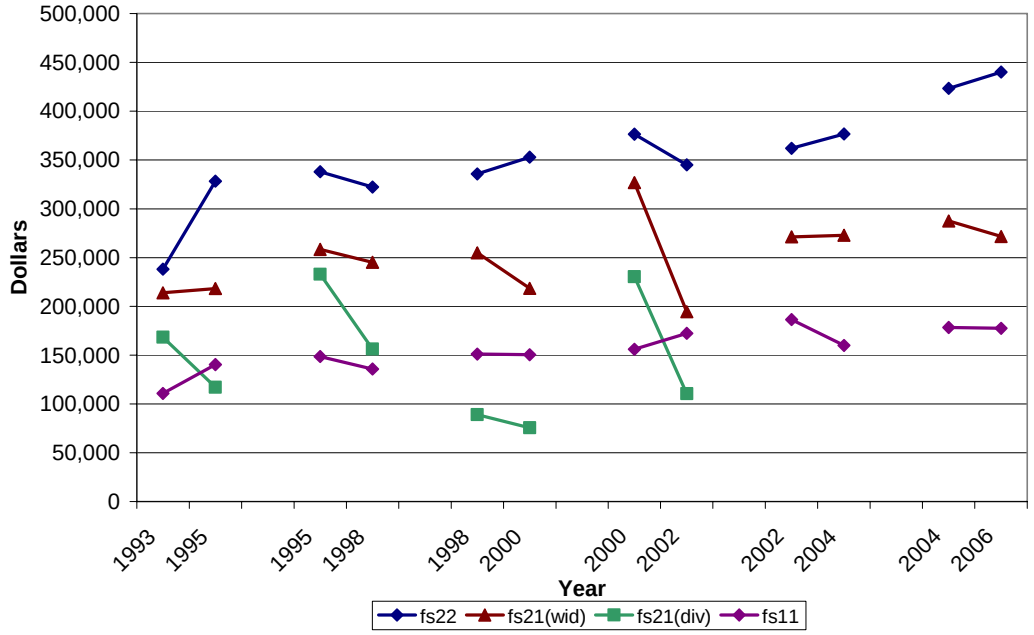


Figure 2-6. Change in mean of total assets between years, by family status, for persons 70 to 80 in 1993--AHEAD



3. Retirement Asset Accumulation

The previous section shows that total assets tend to accumulate for continuously married (fs22) and continuously single (fs11) persons as they age, even at older ages. Assets tend to decline with fs21 transitions, at least when the transition is associated with divorce. Whether due to divorce or widowhood, the change in assets associated with the fs21 transition is lower on average than the change associated with the fs22 transition. Now we consider whether this pattern is observed for personal retirement assets as well. Because the median retirement asset level is zero for many age groups, we now shift our focus from medians to means, and we present results based only on SIPP data, given its more comprehensive coverage of personal retirement assets than the HRS or AHEAD.

Figure 3-1 shows data for persons who were 51 to 61 in 1992 and are 64 to 74 in 2005, the last year for which data are reported in this figure. Asset changes for six yearly intervals are reported; the first for the 1997-1998 interval when the respondents were between the ages of 56 and 66. The retirement assets of fs22 persons increased in all but one of the intervals. The average increase was 6.9 percent. The retirement assets of fs11 persons also increased in all but one of the intervals and the average increase was 7.4 percent. For fs21 persons the data show a large decline in assets for four of the six intervals and little change for two of the intervals. On average the assets of fs21 persons declined by 24.5 percent.

Figure 3-2 shows data for persons who were age 70 to 80 in 1993. They were age 74 to 84 in the year of the first interval (1997-1998) and age 84 to 94 in 2005. Even at these older ages, the assets of fs22 persons increase in the first four intervals, but declined in the last two. The average increase was 6.9 percent. The retirement assets of fs11 persons increased in all but one of the intervals and the average increase was 8.9 percent. Again, there was a large decline in the assets of fs21 persons, averaging 43.6 percent, in each of the intervals.

In short, consistent with the data on asset withdrawals shown in the first section, these data show that retirement assets are typically preserved even through ages as old as 84 to 94. There is, however, a sharp drop in retirement assets at the time of a change in family status. The data suggest to us that retirement assets are preserved, to the extent possible, to use in the event of a shock such as a change in family status. This finding is consistent with the preservation of housing equity for use at the time of a shock to family status, as reported in Venti and Wise (2004). Indeed, the evidence reported in section 2 shows that total assets also tend to be conserved for use in the event of a shock such as a change in family status.

Figure 3-1. Change in mean of retirement assets between years, by family status, for persons 51 to 61 in 1992--SIPP

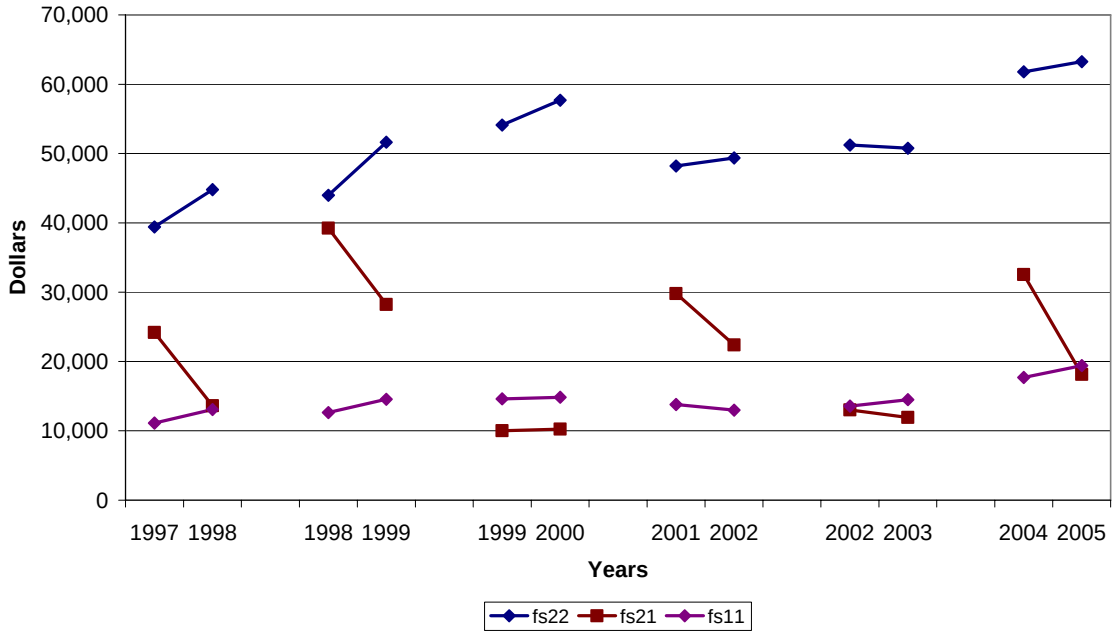
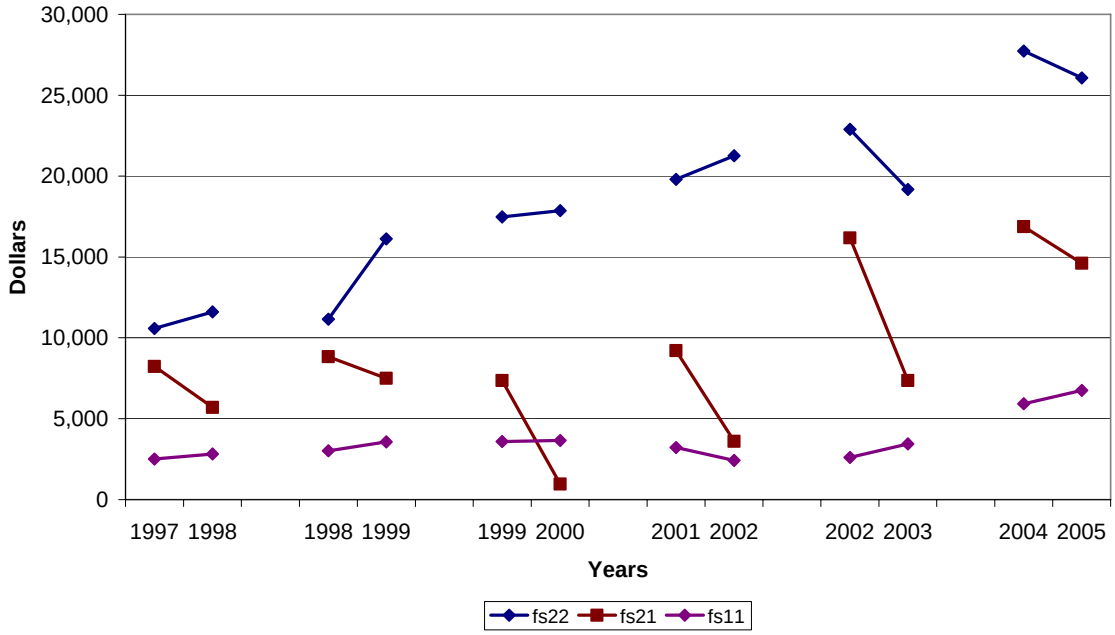


Figure 3-2. Change in mean of retirement assets between years, by family status, for persons 70 to 80 in 1993--SIPP



4. Past and Future Assets

The results reported above provide information on the change in total assets and the change in retirement assets that are coincident with a change in family status. We considered, for example, assets at the beginning and end of a two-year interval for persons who will continue in two- or one-person families over the interval, or who will transition from a two- to a one-person family during the interval. Here we consider the assets of these same individuals prior to the beginning of the interval and after the end of the interval in which the family status transition occurs.

Table 4-1 shows total asset data for HRS respondents age 51 to 61 in 1992 for all seven intervals, identified by the interval in which the family status change occurred. The interval in which the transition occurred is shaded in yellow and highlighted in bold. This transition interval is denoted the base interval. The assets of those who experienced the transition are reported before and after the base transition interval. For example, the first of seven panels of the table shows beginning and ending assets in each of the seven intervals for persons whose family status changed in the first interval, 1992 to 1994. The fourth panel shows prior and future assets of persons that changed family status in the fourth interval, 1998-2000. The seventh panel shows the prior assets of persons whose family status change is reported for the last interval, 2004 to 2006.

Each panel shows asset balances in many years for persons in each family status group in the base period. These persons may be in other family status groups in periods other than the base period. Thus, for example, the first row of Appendix Table 4-1 pertains to persons who remained single (fs11) for the 1992-1994 interval. Some of the persons shown in this row may have married in later years. The asset patterns are difficult to see in the table, but are easily seen in Figures 4-1a through 4-1g, that show the assets for each of the seven panels of the table. In each table the year in which the asset change occurred, the base interval, is highlighted in a box.

In Figure 4-1a, we can follow the future assets of persons who changed family status in the first HRS interval (1992-1994). We see that the assets of the fs22 group in the first interval continued to increase in all of the later periods. The initial wealth of this group was $135,689 at the end of the first interval in 1994 and $199,156 at the end of 2006 (in year 2000 dollars), an increase of 46.8 percent over the next 12 years. Persons whose spouse died between 1992 and 1994, the fs21(widowed) group, had assets about half the level of the fs22 group in the first interval and the surviving persons in this group had only a small increase in assets over the next 14 years, 18.8 percent. The fs11 group in the first interval experienced a 46.1 percent increase in assets over the next 12 years. The fs21(divorced) group had a substantial drop in assets in the first interval and the subsequent assets of the single persons increased

Table 4-1. Median total assets of persons before and after interval of family status change, by year of family status change--HRS

	1992-1994 Assets		1994-1996 Assets		1996-1998 Assets		1998-2000 Assets		2000-2002 Assets		2002-2004 Assets		2004-2006 Assets	
type in 1992-1994	start	end	start	end	start	End	start	end	start	end	start	end	start	end
Fs11	**29**	**33**	35	37	38	41	44	46	49	52	50	47	48	48
Fs12	**39**	**77**	73	88	91	87	110	99	98	107	110	141	144	144
Fs21 (widowed)	**67**	**69**	69	75	76	75	76	86	86	75	71	81	84	82
Fs21 (div/sep)	**65**	**31**	38	53	60	51	42	71	66	59	59	63	70	70
Fs22	**124**	**136**	138	141	146	151	151	163	165	171	168	184	188	199
type in 1994-1996														
Fs11	33	35	**35**	**37**	39	40	43	46	49	51	50	48	52	50
Fs12	62	53	**52**	**95**	97	131	133	146	146	111	111	128	117	102
Fs21 (widowed)	101	93	**93**	**103**	106	93	93	95	105	79	79	71	86	122
Fs21 (div/sep)	76	60	**60**	**43**	43	55	55	60	63	74	74	71	79	77
Fs22	125	139	**139**	**143**	148	152	155	168	170	174	173	189	192	202
type in 1996-1998														
Fs11	41	38	38	42	**42**	**42**	44	46	51	54	53	53	56	55
Fs12	87	58	56	63	**63**	**97**	99	135	133	113	113	147	129	127
Fs21 (widowed)	99	99	99	90	**103**	**97**	97	93	94	101	102	74	76	80
Fs21 (div/sep)	68	60	56	49	**49**	**24**	27	37	33	61	58	98	101	81
Fs22	129	142	142	148	**148**	**151**	155	170	173	175	175	191	194	205
type in 1998-2000														
Fs11	47	46	46	46	47	47	**45**	**46**	51	54	55	53	57	58
Fs12	97	75	75	78	78	96	**86**	**135**	136	120	125	121	121	171
Fs21 (widowed)	88	95	94	93	92	91	**93**	**94**	99	108	102	110	99	123
Fs21 (div/sep)	89	66	70	63	60	57	**57**	**24**	29	58	57	28	34	33
Fs22	132	146	147	153	152	159	**157**	**171**	176	177	178	195	201	213
type in 2000-2002														
Fs11	48	51	52	52	52	55	53	55	**53**	**55**	55	53	57	57
Fs12	103	99	107	125	125	97	97	97	**93**	**170**	169	116	120	129
Fs21 (widowed)	103	104	104	91	91	99	100	92	**92**	**89**	89	89	89	92
Fs21 (div/sep)	78	92	85	97	95	100	105	126	**126**	**42**	46	78	78	55
Fs22	132	148	149	156	156	164	163	179	**177**	**178**	180	197	203	217
type in 2002-2004														
Fs11	50	54	56	54	55	57	57	58	57	55	**52**	**51**	56	53
Fs12	92	89	92	71	73	99	101	108	108	103	**87**	**130**	129	144
Fs21 (widowed)	90	100	108	98	102	107	103	109	107	101	**101**	**101**	108	130
Fs21 (div/sep)	46	67	67	40	45	58	62	70	70	62	**60**	**34**	34	70
Fs22	132	148	150	156	157	164	164	182	180	183	**180**	**197**	202	216
type in 2004-2006														
Fs11	55	58	58	59	62	63	63	66	65	63	60	58	**58**	**55**
Fs12	77	77	86	63	63	85	86	84	66	81	83	92	**93**	**163**
Fs21 (widowed)	125	121	129	118	118	125	128	131	134	168	167	126	**114**	**143**
Fs21 (div/sep)	44	36	36	34	42	62	57	54	54	50	50	54	**59**	**24**
Fs22	134	151	151	159	160	167	168	189	189	190	186	207	**204**	**218**

over 124 percent over the next 12 years. It is likely that much of this growth is due to remarriage. Of the 121 persons divorced or separated in 1992 to 1994, 47 remarried within 12 years. Only 28 of 108 widows remarried.

Figure 4-1d shows the prior and subsequent assets of persons who changed family status in 1998-2000. The assets of the fs22 group were increasing in each of the prior three intervals and each of the three subsequent intervals. The fs21(widowed) group had much lower assets than the fs22 group in the prior three intervals and continued to have much lower assets in the future three intervals. The assets of the fs11 group were less than a third of the assets of the fs22 group in the beginning of the 1998-2000 interval and had been at about this same level prior to this transition. Their assets increased somewhat in subsequent years, more or less the same as the increase of the assets of the fs11 group. The fs21(divorced) group experienced a sharp drop in assets in the base interval and had declining assets in the prior 3 intervals. The subsequent assets of this group were about the same at the last of the seven periods and at the end of the base period, although with fluctuation in between (likely reflecting reporting errors).

Finally, Figure 4-1g shows the prior assets of persons by family status change in the last (2004-2006) interval. Compare the prior assets of the fs22 and the fs21(widowed) groups. In the last interval, in which the change in family status occurred, the assets of both groups increased. However, the prior asset paths of these two groups are quite different. In 1992 the assets of these two groups were similar, but over the next 14 years the assets of the fs22 group increased substantially, while the assets of the fs21 group changed little, on balance. The assets of the fs11 group also changed little over the prior 14 years. The prior assets of the fs21(divorced) group declined substantially during the 2004-2006 period when these persons were divorced. But the assets of this group were low in all prior years, even lower than the assets of the fs11 group. That is, the assets of persons who would experience an fs21 transition many years in the future did not change much in the years prior to the transition, while the assets of the persons who were in stable marriages with long-lived partners, the fs22 group in later years, increased substantially in prior years. The relationships for the other base intervals are similar in this respect, but for the other intervals, the assets of the fs21 group were much lower than the assets for the fs22 group. The patterns revealed in the other four figures are much like the three discussed.

In summary, we conclude that households that continue as two-person households (fs22) in any of the seven two-year intervals increase total assets in that interval and also typically experience an increase in assets in all prior and subsequent intervals. The same pattern typically holds for continuing one-person (fs11) households as well. We also find that the asset history of two-person households that experience a change in family status (fs21) is very different from the history of continuing two-person families. The fs21 families in a particular interval experience a drop in assets in that interval, but also had much lower assets than continuing two-person households long before they experienced the change in family status. In most cases, two-person households that experience a change in family status and become

one-person households report future levels of total assets that are only slightly higher than that of households that have always been one-person.

Figure 4-1a. Total wealth by household status change in 1992-1994

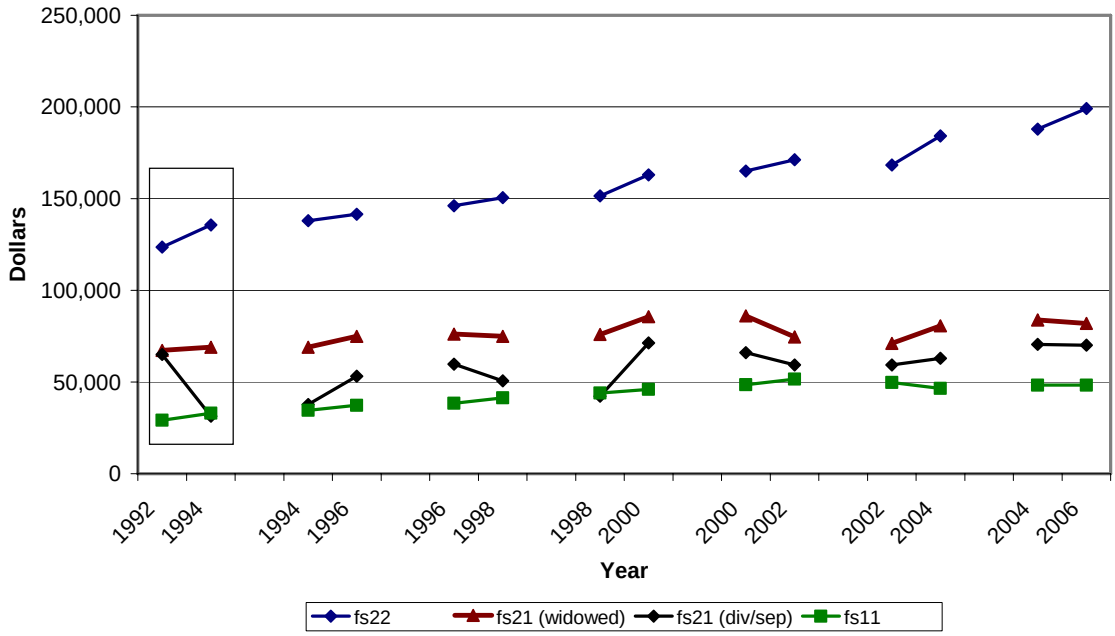


Figure 4-1b. Total wealth by household status change in 1994-1996

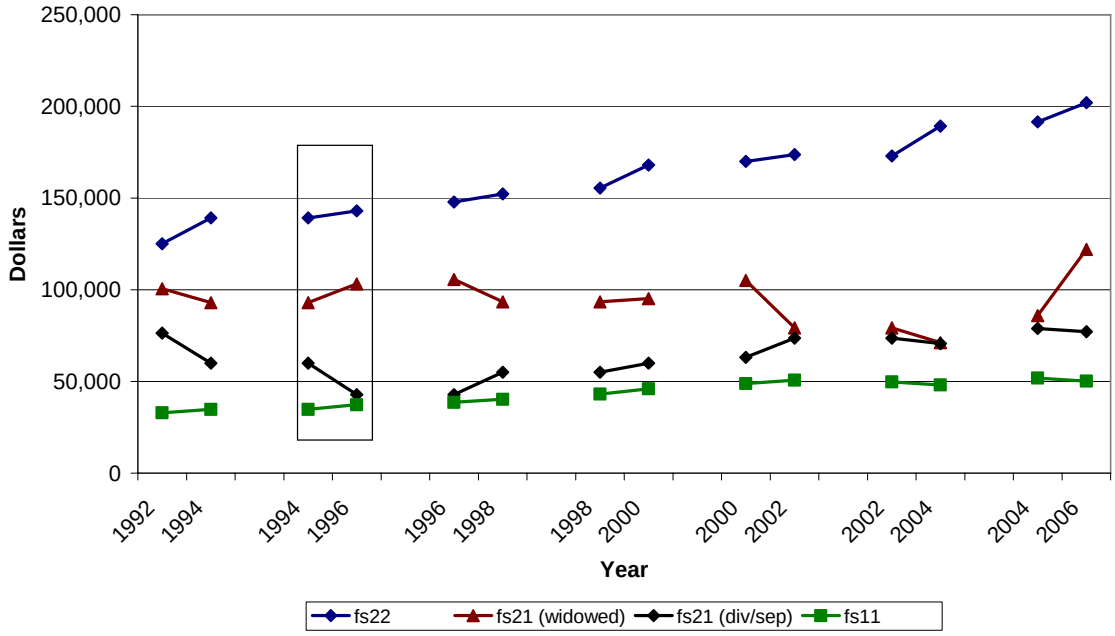


Figure 4-1c. Total wealth by household status change in 1996-1998

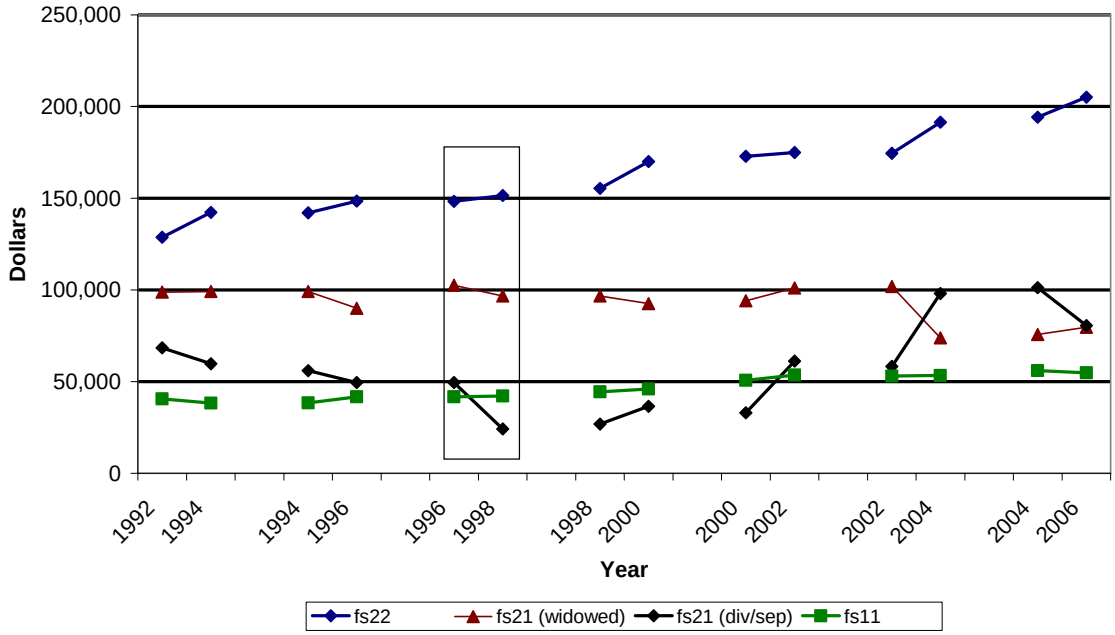


Figure 4-1d. Total wealth by household status change in 1998-2000

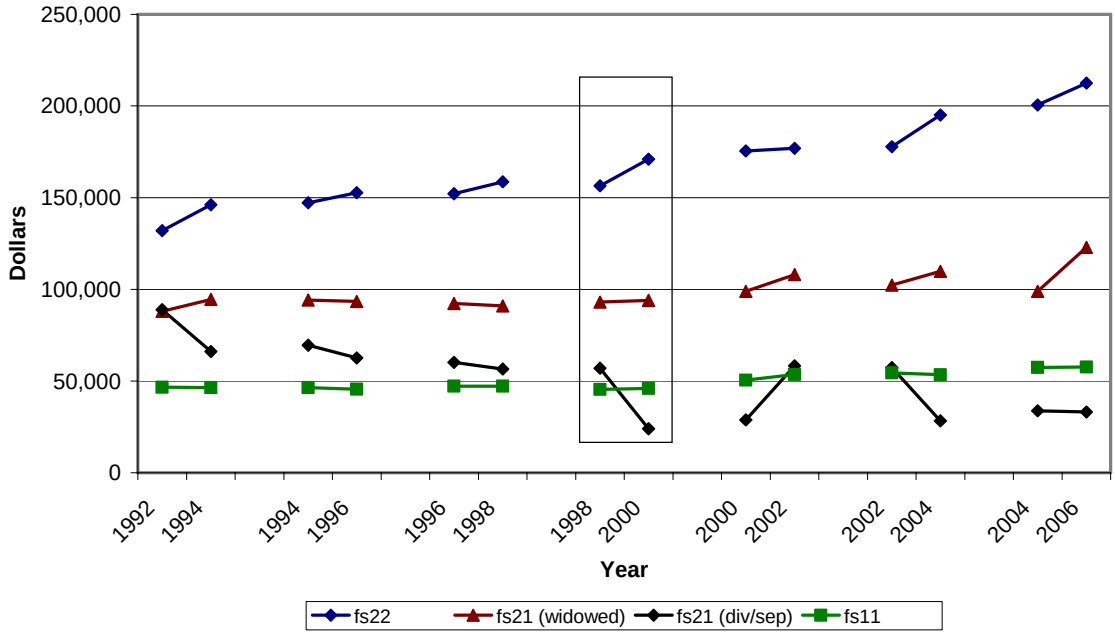


Figure 4-1e. Total wealth by household status change in 2000-2002

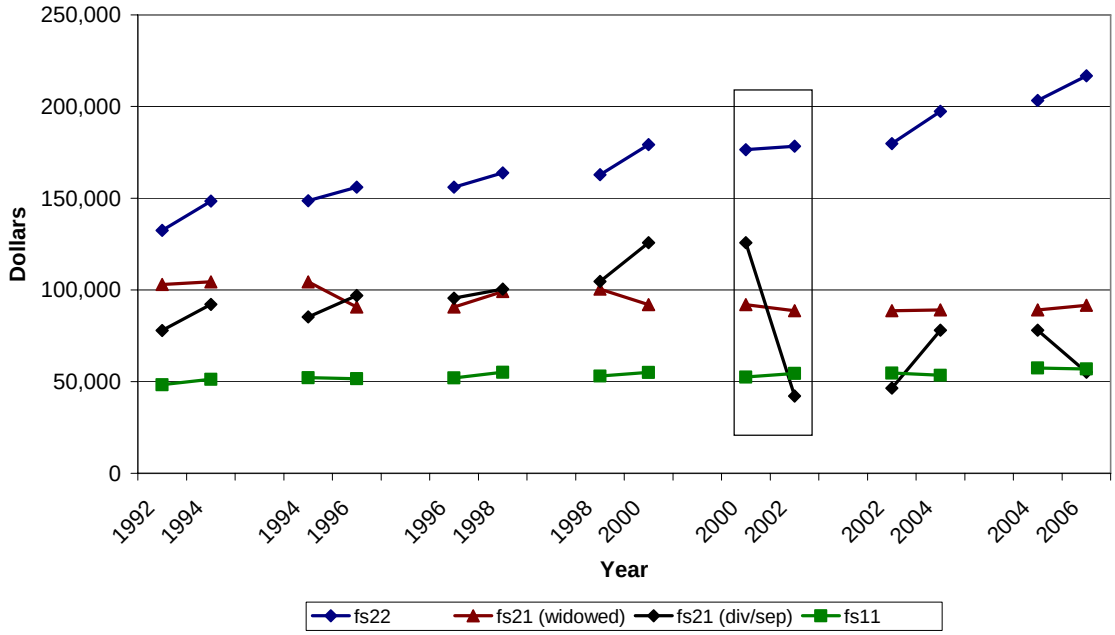


Figure 4-1f. Total wealth by household status change in 2002-2004

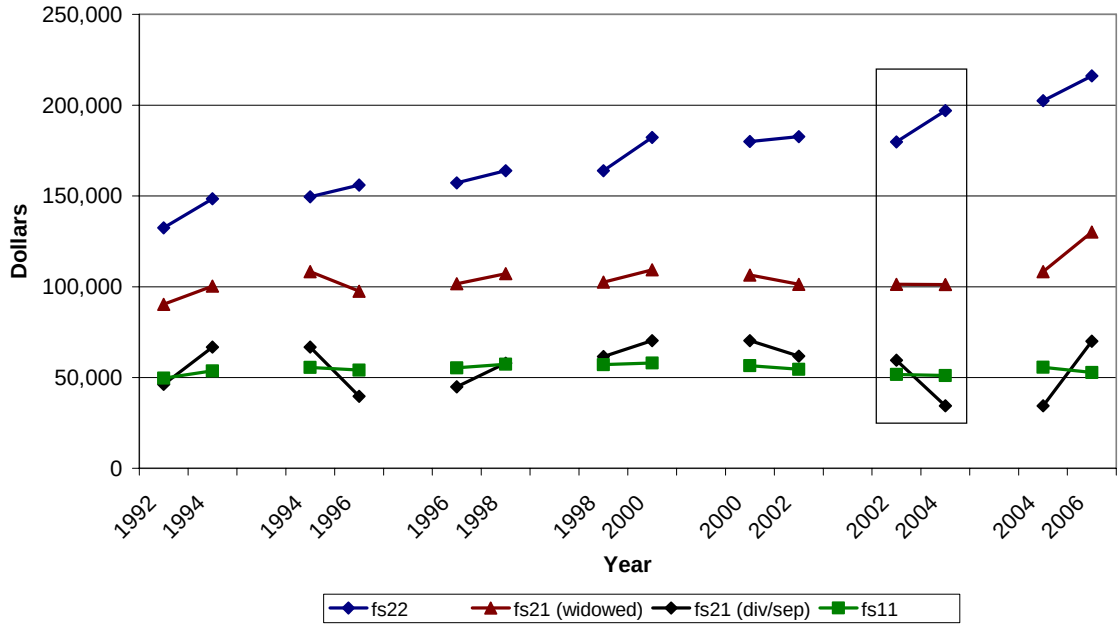
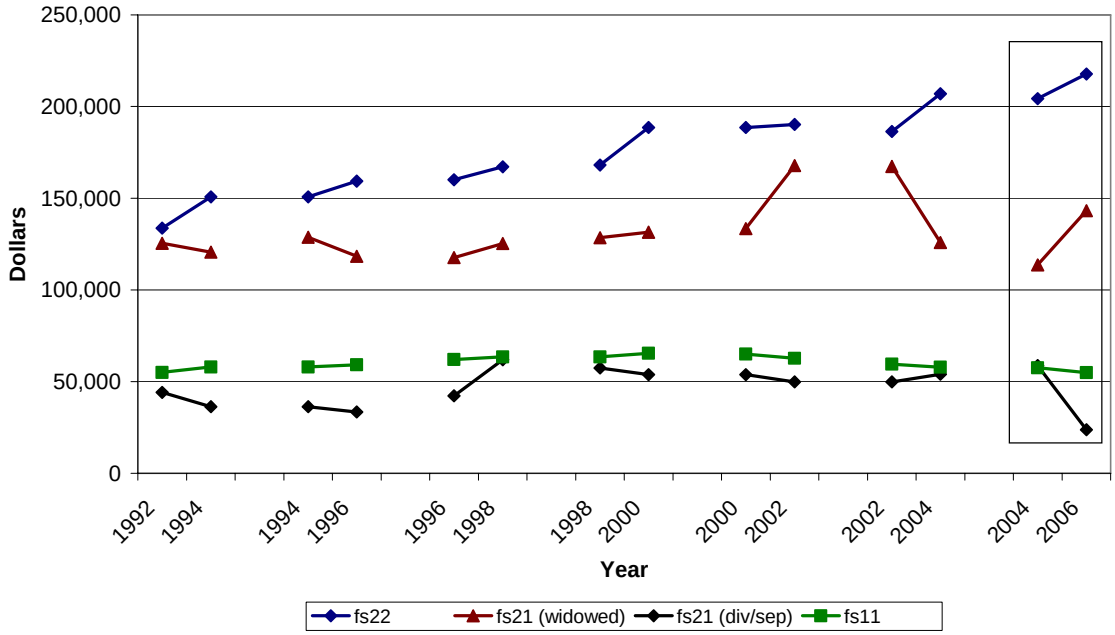


Figure 4-1g. Total wealth by household status change in 2004-2006



5. Cohort Description of Asset Accumulation

The foregoing asset accumulation figures are all based on the data as described in Table 1-1. An alternative approach is to show the accumulation of assets within cohorts. This allows easy comparison between the HRS and AHEAD cohorts and between the HRS/AHEAD cohorts and the SIPP data. The entries in the figures below are the initial asset values in each of the intervals shown in Table 1-1.

Figure 5-1 shows the total assets of persons in continuing two-person households (fs22) who were between the ages of 56 and 61 in the HRS in 1992 and between 70 and 75 in the AHEAD in 1993. The HRS persons age 56 to 61 in 1992 are followed until they are age 70 to 75 in 2006. This allows us to compare the assets of the original HRS cohort at age 70 to 75 in 2006 with the assets of the AHEAD cohort who were the same age in 1993. The age shown on the horizontal axis in the figure is the first age of an interval. For example, age “56” denotes the five-year age interval 56 to 61. (The two series don’t overlap at age 70 in the figure because the figure shows the initial assets at age 68 for fs22 persons who will be 70 to 75 at the end of the last HRS interval, 2004-2006.) Like the figures in section 4, this figure also shows that the assets of fs22 persons increase through age 81 to 85. The profile for the younger HRS cohort lies well above the profile for the older AHEAD cohort. This suggests a substantial cohort effect: at each age the younger cohort has substantially more assets than the older cohort had at that age.

Figure 5-1. Median total assets of fs22 persons inHRS cohort age 56 to 61 in 1992 and AHEAD cohort age 70 to 75 in 1993

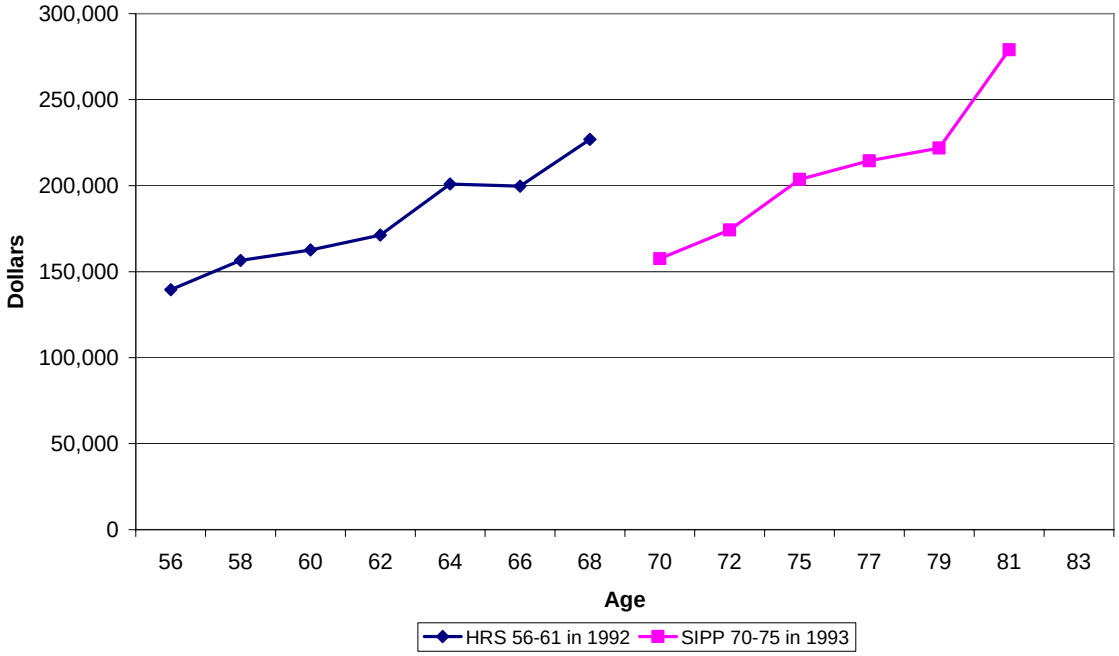


Figure 5-2 is like Figure 5-1 but pertains to persons in continuing one-person households (fs11) instead of fs22 persons. Again, it is evident that total assets increase virtually continuously through age 81 to 85. Surprisingly, however, there seems to be no cohort effect for persons in continuing one-person households.

Figure 5-3 shows cohort data for persons in continuing two-person households based on SIPP data. As explained above, the SIPP surveys all age groups for each wave, so that data for a large number of cohorts can be identified. It is clear from the SIPP data, like the HRS/AHEAD data, that total assets of fs22 persons increase with age, through at least age 82. In addition, the cohort effects for continuing two-person households are again apparent. Persons who attain a given age in a later year have more total assets. Figure 5-4 is like Figure 5-3 but pertains to fs11 instead of fs22 persons. Again it is clear that for the assets of remaining one-person families increase virtually continuously through age 82. Unlike the HRS data, the SIPP data show some cohort effects for fs11 persons although these effects are smaller than those for fs22 persons.

Figure 5-2. Median total assets of fs11 persons inHRS cohort age 56 to 61 in 1992 and AHEAD cohort age 70 to 75 in 1993

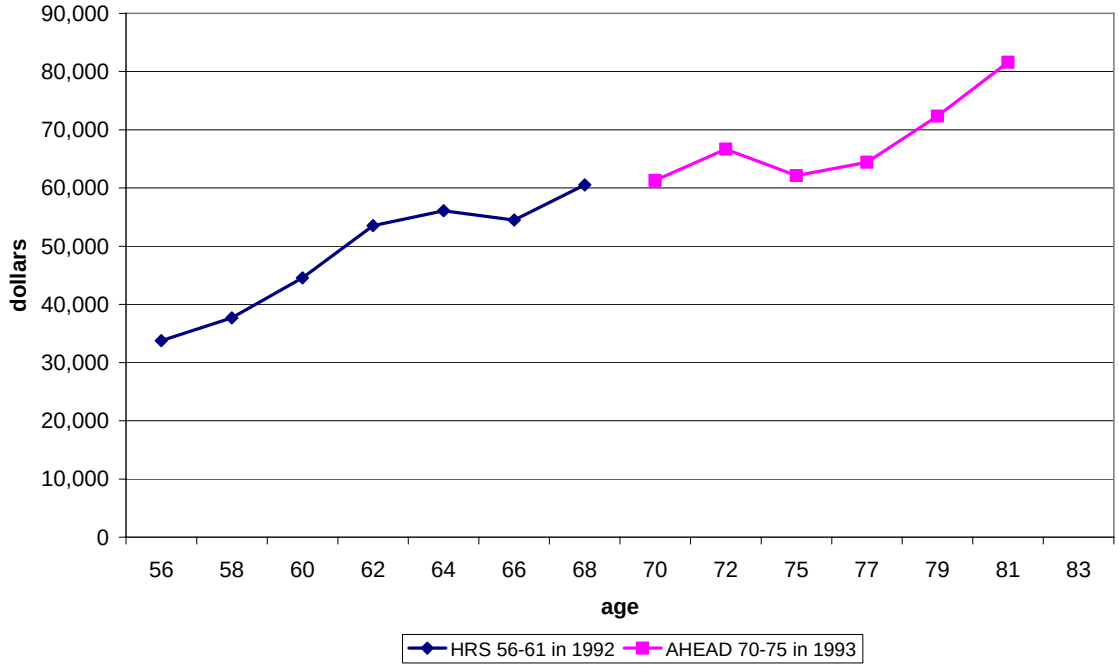


Figure 5-3. Median total assets of fs22 persons for selected SIPP cohorts

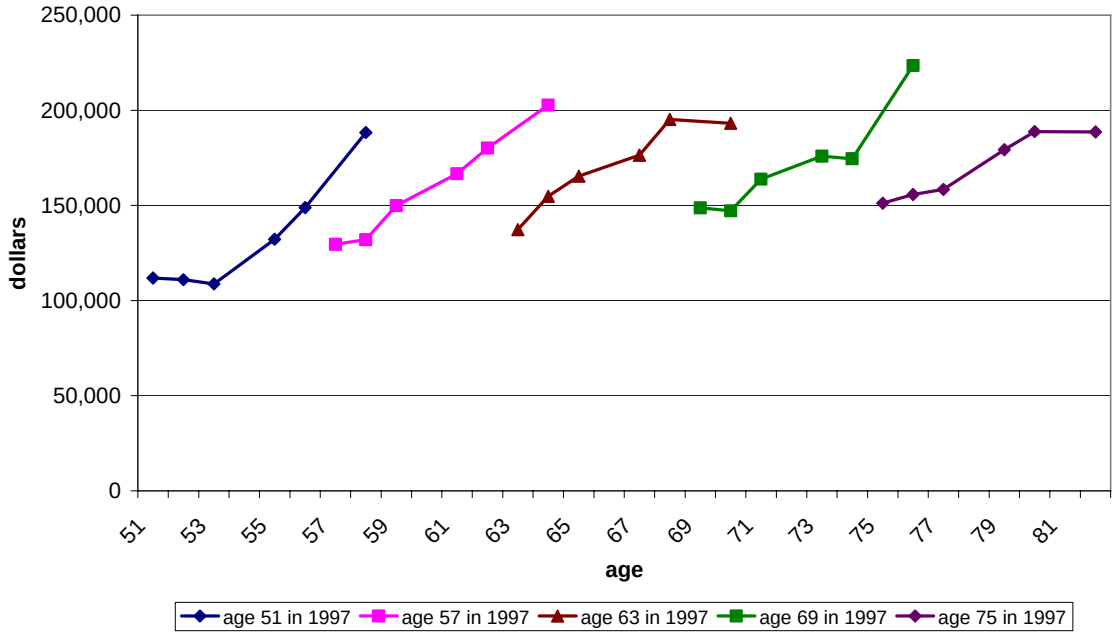
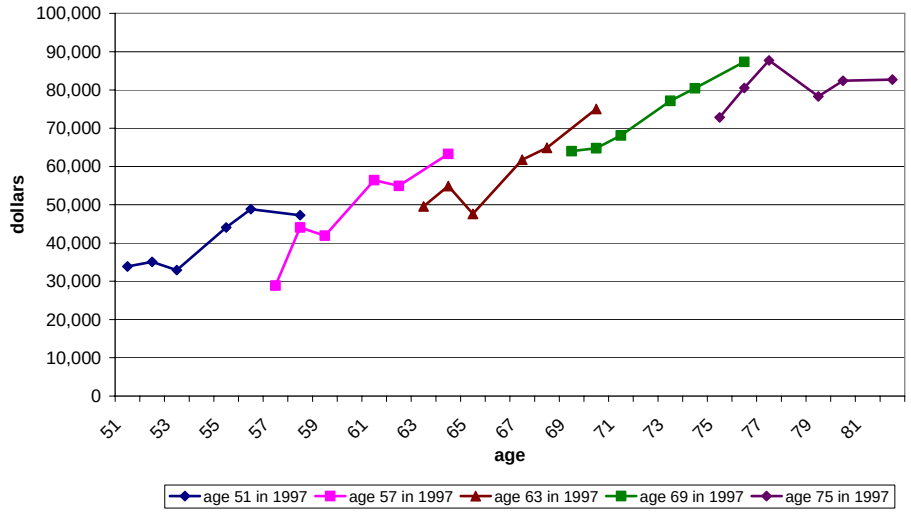


Figure 5-4. Median total assets of fs11 persons for selected SIPP cohorts



The next two figures compare HRS/AHEAD assets with those reported in SIPP. Figure 5-5 compares the assets of fs22 persons reported in the HRS with the assets reported in SIPP. Figure 5-6 makes the comparison for fs11 persons. For fs22 persons, assets reported in SIPP are greater than those reported in the HRS. This may be because 401(k) assets are not available from the HRS. For fs11 persons, the assets reported in the same intervals are similar.

Figure 5-5. Median initial total assets of fs22 persons for cohort age 51 to 61 in 1992, HRS and SIPP data

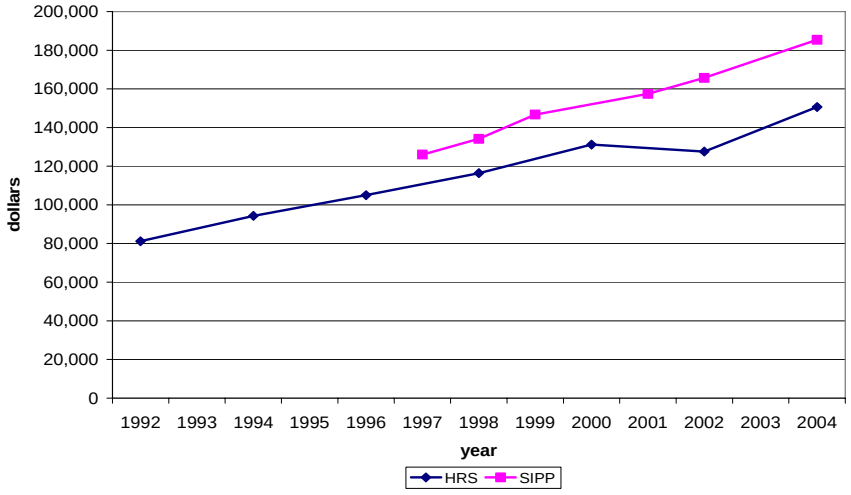
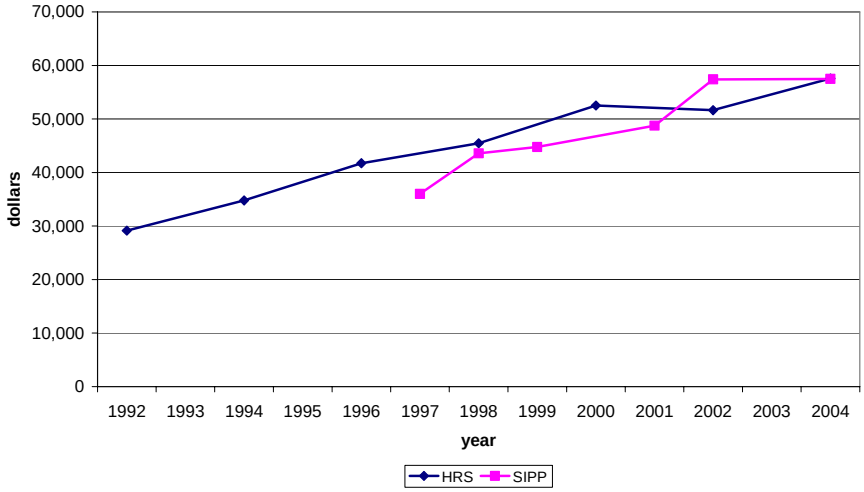


Figure 5-6. Median initial total assets of fs11 persons for cohort age 51 to 61 in 1992, HRS and SIPP data



Figures 5-7 and 5-8 report the personal retirement assets of fs22 and fs11 persons respectively. These figures show means instead of medians. Like the interval change data reported above, the cohort representation of the data also shows that the assets of continuing fs22 and fs11 families continue to grow through age 80 at least. The increase is especially strong for continuing two-person households. Again the cohort effects are apparent for both groups, with younger cohort having greater retirement assets. Recall that the interval change data show a decline in the retirement assets of the fs21 families.

Figure 5-7. Mean retirement assets of fs22 persons for selected SIPP cohorts

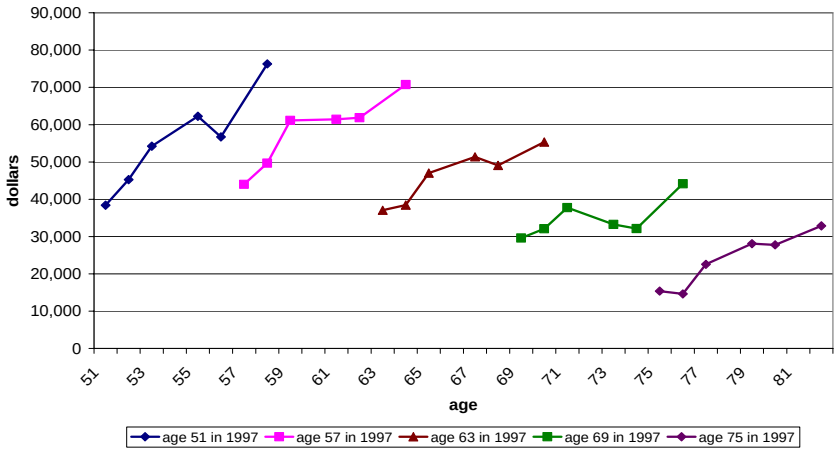
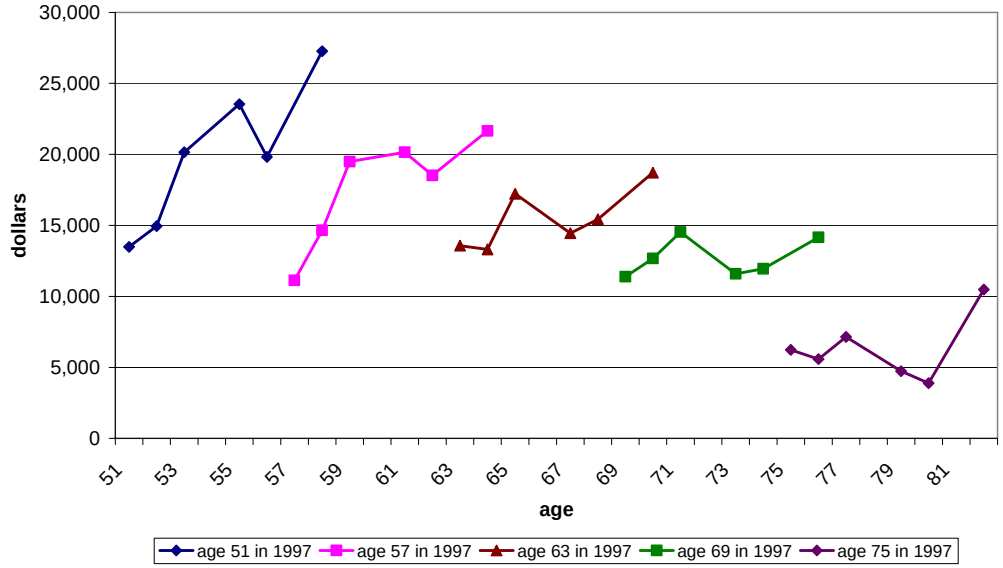


Figure 5-8. Mean retirement assets of fs11 persons for selected SIPP cohorts



6. Summary and Discussion

Our central finding is that neither the retirement assets accumulated in personal retirement accounts, nor other household assets, are drawn down precipitously soon after retirement. Instead, we find that persons tend to conserve retirement assets. The percentage of dollars withdrawn from personal accounts each year is less than the rate of return earned on existing balances during our sample period, allowing balances to accumulate further. This is true even after persons are required to make minimum withdrawals at age 70 ½. We also find that the assets of continuing two-person families increase at least until the individuals in these households reach the age of 80. The retirement assets of continuing one-person families increase well into the 80s as well. On the other hand, persons who transition from a two-person to a one-person family experience a fall, and in many cases a substantial fall, in retirement assets. Persons who will experience a two- to one-person transition in the future had much lower assets in prior years than persons who would later remain as continuing two-person families. Our findings on the conservation of retirement assets resemble the findings of Venti and Wise (2004) and others with respect to home equity.

Our findings raise a number of issues that need to be addressed more thoroughly in future work. We have not adjusted the HRS, AHEAD, or SIPP data for reporting errors. In many instances anomalous jumps in asset balances are likely the result of reporting errors. This is particularly a problem when looking at <u>changes</u> in wealth over time--a single misreport of a zero balance in one period will produce both a large negative change and a large positive change. In most cases we have used medians to lessen the problem. We have also focused on graphical presentation of the raw data, but recognize the need for more formal statistical analysis in future work. We

have also not fully explored the reasons for what appear to be relatively low fractions of individuals over the age of 70 who report making withdrawals from their retirement accounts.

Our results may have implications for the demand for annuities by households of retirement age. If many individuals are currently conserving assets to be prepared for random future shocks, then they may not find annuitization, with the consequent reduction of assets available for precautionary needs, to be a natural direction in which to direct their assets.

Finally, while our results provide information on the average rate of accumulation and decumulation of assets, they do not say how many people may be drawing assets down too quickly, or how many are perhaps forgoing "too much" consumption by conserving their assets. That is also a topic for future analysis.

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