Living Arrangements among Elderly Women in the Panel Study of Income Dynamics*

V. Joseph Hotz, Duke University and NBER
Gideon Lukens, UCLA
Kathleen McGarry, Dartmouth College and NBER
Emily Wiemers, UCLA

Latest Draft: September 19, 2007

Introduction

The vast majority of care of elderly individuals is provided informally by family and friends. For married elderly, the spouse is far and away the most likely caregiver. However, for those who are widowed or single (typically women), the burden of care is often borne by children. Which child provides this care, the extent to which care giving is shared among siblings, and how families arrive at a particular arrangement are important questions. Their answers are key to understanding the role of the family in determining the well-being of the elderly and the likely consequences of such secular changes as declining family size, the rise of labor force participation of women and the potential restructuring of old-age security programs on this well-being. Simple empirical inspection of the correlates of care giving suggests that co-residence and geographical proximity are among the strongest predictors. However, as robust as these correlations are, they fail to inform us about the direction of causality and the nature of family decision-making with regard to where and with whom parents live as they become older. In particular, is the child co-residing or living near a parent in order to provide care efficiently? Or is she providing care because she was already living nearby?

We are certainly not the first group to analyze the residential choices of older unmarried women, the role of children and the nature of decision-making surrounding these choices. A sizable literature already exists which examines various aspects of these issues. Some of it has been based on new models of family decision-making. Some have tried to estimate the effects of increasing income for the elderly and its importance in explaining the trend to the higher incidence of living alone. Some have used new sources of data for the U.S. and other countries and some have focused on econometric strategies for dealing with the joint nature of parental living arrangements, health, and the competing demands on children's financial resources and time.[1] Finally, the work in this literature has made use of a wide variety of alternative sources of data in both the U.S. and other countries. In the next section, we provide a brief review of the main themes and conclusions of this line of work. We add to this body of work with what we believe is a better control for the simultaneous determination of income and living arrangements and with the ability to examine the evolution of living arrangements over time.

Our paper explores the living arrangements of elderly widowed or divorced mothers using the Panel Study of Income Dynamics (PSID). While the PSID has been in existence for almost 40 years, its potential to help us understand the living arrangements of the elderly and

---

[1] A separate strand of literature, which we ignore herein, looks at the change in living arrangements with respect to the consumption of housing wealth, i.e., "downsizing." (e.g. Sheiner and Weil, 1992; Venti and Wise, 2000, 2001; Laferrère, 2005b)

their determinants has not been fully exploited.[2] In many ways, the PSID represents an ideal data source for analyzing the role of the family in affecting the living arrangements of older parents. As discussed in detail below, the PSID provides longitudinal data on a wide range of phenomena for multiple generations of family members. This generational structure is the result of the PSID's "following rule" which, in principle, follows *all* of the children of earlier PSID respondents, as these children "split off" from their parents and form their own households. As a result, one has parallel data on family members that is available for a large portion of the lifetimes of many of these respondents. Such data allow one to track not only when elderly parents co-reside with their children but also in those cases in which they live independently, their geographic proximity and how co-residence and distance change as the parents age. Finally, because the PSID follows and interviews the members multiple generations of families, one does not have to rely on proxy reports for information about the income, wealth, health status, etc. of parents, children and siblings.

Of course no data set is perfect and data sets sometimes prove less suitable in practice than they appear to be in principle. This is potentially true with using the PSID to analyze the role of the family the affecting the living arrangements of the elderly because, while the PSID is an extremely rich data set, its initial focus, as its name suggests, was not on the interactions within families, but rather on changes in income and economic status over time. Thus, the early waves the survey did not gather much information about living arrangements or intergenerational relationships. Some of these shortcomings have since been rectified but others have not. For example, the PSID does not regularly have information on whether or what care children are providing to their elderly parent and there is little information on respondent health or about financial transfers. Moreover, as we will discuss below, there are other features of the design of the PSID that can complicate the longitudinal analysis of families.

Accordingly, one of our aims at this stage of our work is to determine the extent to which the PSID can be used for studying relationships among family members and the impact of these relationships on the well-being of the elderly. Additionally, we seek to learn where simple augmentations to the survey might improve our understanding of these familial ties. Because of this goal, in the discussion that follows we will pay particular attention to the design and content of the PSID, how we constructed our analysis files, and provide an assessment of the suitability of the PSID for analyzing the role of the family in determining living arrangements of the elderly.

More substantively, we use data from the PSID to analyze the living arrangement of

---

[2] A notable exception is Ellwood and Kane (1990) that use the early waves of the PSID in an event history analysis of the marital status, disability, living arrangements and income of the elderly.

elderly unmarried (widowed, single, divorced or separated) women We model decisions about living arrangements as a choice to live independently, with a child, with others, or in a nursing home. Given the availability of relatively long panels of data for both parents and their children, we have data on the income of the mother before she lived with her child as well as information about her children, including their incomes and labor market status well before she reached age 65 and likely well before she was in need of assistance.

To our knowledge, there has been no systematic study of parent-child living arrangements over such an extended period of time. The PSID allows us to explore alternative econometric methods for dealing with the potential endogeneity of factors like income, health and the living arrangements of elderly parents and of their children. In addition, because we follow individuals for many years, we are not constrained to examine the choice of living arrangements at a single period in time or to look at a single change in living arrangements. Instead, we can examine the evolution of living arrangements over time and observe the extent to which movements to a nursing home or to live with a child are permanent transitions. As a test of the endogeneity of income with respect to living arrangements, we can examine the effect of lifetime resources on the eventual living arrangements of elderly widows.

In what follows, we present both descriptive and more structured multivariate analyses of the living arrangements of the elderly unmarried mothers in our data. We also provide a more limited set of analyses of the transitions between alternative modes of living arrangements of these parents, although, to date, certain design features of the PSID have limited the extent to which we can conduct such analyses. Furthermore, as note below, the ultimate goal of our line of research is to formulate and estimate an array of decision-theoretic models of the living arrangements for parents and children and how these decisions are related over the life cycles of each generation. We thus highlight some of the features of the PSID and the findings in this paper that will help determine the path our research agenda takes.

We find strong evidence that understanding living arrangements of the elderly requires a much longer window of observation than in possible with most data. We find that not only do women move in with children or into a nursing home, but they also can return to independent living after either of these more dependent relationships. Furthermore, we find that using current income, or even short lags of current income, to predict living arrangements leads to very different conclusions about the effect of income on living arrangements from what one obtains with measures approximating lifetime resources. For example, a 10 percent increase in current income is associated with a 0.8 percent increase in living alone, while in our preferred specification, a 10 percent increase in income leads to a statistically insignificant 0.1 percent

increase in the probability of living alone. We argue therefore that by following an individual from well before she is likely to need financial assistance or help with personal needs, until that need occurs, one obtains a better understanding of the factors associated with co-residence.

Our paper is organized as follows. In the next section, we lay out the existing knowledge on the subject. We include discussions of the literature on both caregiving and living arrangements. In section 2 we describe the data available in the PSID and provide, in some detail, a discussion of how we constructed our analytic sample. Section 3 provides some descriptive evidence of the choice of living arrangements and section 4 models the decision more formally. Section 5 examines, briefly, the likelihood of various transitions and the importance of multiple transitions. A final section concludes and offers direction for future research.

1.   Background

Family members provide the lion's share of support for infirmed elderly. Only 25 percent of individuals with functional disabilities live in nursing homes, while the remaining 75 percent live in the community. For these community-based individuals, informal care is by far the dominate means of assistance with over 90 percent of those who receive assistance receiving some form of informal support (Health Policy Institute).[3] Although a spouse is typically the primary caregiver for married elderly, children bear a large share of the burden. In fact, given the incidence of widowhood, 41 percent of these informal caregivers are children, while only 21 percent are spouses, and 26 percent are other relatives, primarily grandchildren and children-in-law (AHRQ, 2001).

Regardless of the kinship ties, caregivers are far and away more likely to be female than male. Sixty-five percent of caregiving spouses are wives, 70 percent of caregiving children are daughters, 76 percent of grandchildren caregivers are grand daughters and 85 percent of children-in-law who are providing care are daughters-in-law.[4] Caregivers also have been shown to have lower employment rates and to work fewer hours. However, the direction of causality for these relationships is not clear. Women may be more likely to provide care because they have a lower opportunity cost of time. Similarly, those who do not have strong attachments to the labor force will be able to provide care at a lower cost than those who are working. Alternatively, the need to provide care may lead to a reduction in labor force participation. It is important to note that it

---

[3] 78 percent rely exclusively on informal care, 14 percent receive some formal and some informal care and 8 percent receive formal care only.

[4] See also for example, Soldo et al., 1990; Dwyer and Coward, 1991)

4

need not be the necessity of providing care in the current period that is depressing hours of work, but rather, it could be the expectation of future caregiving demands that reduces the incentive to invest in the labor market years before.

Hours of care vary greatly, but the average is approximately 20 hours per week. Unsurprisingly, many more hours of care are provided by co-resident caregivers than non-co-resident caregivers. For instance, among caregivers for those 70 or older, non-co-resident children averaged 8.5 hours of care per week while co-resident children averaged 38.5 (McGarry, 1998). Once again, however, caregiving and living arrangements are likely to be determined jointly, with those who need more care selecting a shared living situation and those who need less care, maintaining more independence. How these shared living arrangements arose is the primary aim of this paper.

An alternative to shared living arrangements is formal nursing home care. If individuals need substantially more care than a family member can provide or if family members are unwilling to provide the necessary assistance, formal care may be the solution. Formal care can be provided in one's own home, or in a nursing home. Both types of assistance are expensive; home health care costs average $19 an hour or nearly $40,000 a year for 40 hours of care a week. Skilled nursing facilities average $75,000 a year (MetLife, 2007). And, although high quality facilities exist, more elderly would prefer to remain in their own home (citation).

Despite what appears to be a strong dislike of institutional care, nearly 40 percent of individuals reaching age 65 will spend some time in a nursing home. The typical stay is, however, short; two-thirds of all stays last three months or less.[5] Yet, because some stays can last for an extremely long time, the average stay is over three years. How the probability and length of a nursing home stay relates to care provided by family members is not know. We do not know, for example, whether family care substitutes completely for institutional care or whether it simply postpones a nursing home admission for a period of time. Furthermore, we know little about which families rely on familial support and which turn to professional care or about the progression of caregiving forms.

Although co-residence of the elderly with their children is not the norm today, less than a century ago it was quite common. In 1900, approximately 70 percent of elderly unmarried women lived with their children, but by 1990, this figure had fallen to below 20 percent (McGarry and Schoeni, 2000). There have been a variety of hypotheses proffered to explain this decline in the

---

[5] The three month time frame is not coincidental. Medicare will cover stays of up to 100 days if they follow a hospital stay and the individual requires medical rather than, or in addition to, custodial care. Garber and MaCurdy (1993) document a spike in nursing home discharges when Medicare coverage ends.

incidence of the elderly living with their children and rise in the incidence of the elderly living alone.[6] With respect to demographic hypotheses, one notable idea is that declines in fertility reduced the availability of children with whom widows and divorced mothers could live (Kobrin, 1976; Ruggles, 1994). A related notion is that the rise in the labor force participation of younger women over the 20th century made it more difficult for daughters to care for their elderly parents. A third explanation for the rise in the independence of the elderly, especially those without spouses, is the secular improvements in health care, health status and life expectancy experienced over the past century. As elderly parents had fewer health problems and/or access to better health care, through programs like Medicare and Medicaid,[7] they were better able to care for themselves and were less in need of co-residing with their parents (Wolf and Soldo, 1988). Researchers also have emphasized changes in cultural factors and norms, including the rise in individualism and the decline in traditional values, both of which helped give rise to a declining set of responsibilities of families, including specifically, a decline in the need to be primary providers of care for the elderly. Finally, one of the most prominent hypotheses has been that the substantial expansion of the Social Security System, work-related retirement programs and economic growth as a whole, all served to increase the level of income available to the elderly and enabled them to support independent living arrangements rather than having to depend on their kin (Michael, Fuchs and Scott, 1980; Schwartz, Danziger and Smolensky, 1984; Costa, 1999; McGarry and Schoeni, 2000; amongst others). A number of studies have used alternative sources of data and identification strategies to assess the validity and relative importance of these alternative hypotheses for explaining the trends (Michael, Fuchs and Scott, 1980; Borsch-Supan, Hajivassiliou, Kotlikoff and Morris, 1992; Costa, 1997; McGarry and Schoeni, 2000).

A related literature analyzes the significance and importance of the demographic, economic and health-related characteristics of parents and their children on the living arrangements of elderly parents over the life cycle in more contemporary settings. Much of this work has been of a reduced form variety (Borsch-Supan, Kotlikoff and Morris, 1989; Ellwood and Kane, 1990; Kotlikoff and Morris, 1990; McGarry, 2003; among others), although a number of these papers have attempted to take account of the joint, and endogenous nature of several

---

[6] See McGarry and Schoeni (2000) and Ruggles (forthcoming) for reviews of the literature on the hypotheses and evidence for explaining the long run trends in the living arrangements of the elderly.

[7] The establishment of the Medicare and Medicaid programs in 1965 made medical care and home health care more affordable. The Medicare program provides health insurance for nearly all those 65 or older. In addition to acute care needs, it currently provides limited coverage of long-term care needs. Medicaid is a means tested transfer program that provides health insurance to the poor. Both programs also provide support for care for the elderly in the form of nursing homes. For example, Medicare covers some nursing home stays while Medicaid funds a larger fraction of nursing home expenditures than any other source.

choices made by (adult) children and the living arrangements of and care received by parents, including the children's locational decisions vis-à-vis those of their parents (Stern, 1995; Hoerger, Picone and Sloan, 1996) and the labor force participation decisions of their children (Pezzin and Schone, 1997).

A more recent literature has developed and estimated bargaining models of the care and living arrangements of elderly parents and the role of their children. For example, Pezzin and Schone (1999) develop and estimate a family bargaining model between an elderly parent and one of her adult children over informal caregiving by the child, the child's labor force participation as well as the living arrangements of the parent and child. Checkovich and Stern (2002) and Engers and Stern (2002) extend these models to consider the potential role of all of an elderly parent's children in decision-making. (See also Pezzin, Pollak and Schone, 2007, who extend the bargaining model of these decisions to allow for cooperative and non-cooperative solutions to the problem: "Who is going to take care of Mom?")

2. The Data to be Analyzed

As noted above, our study is based on a sample of older unmarried women (widowed, divorced, and never married) with children drawn from the Panel Study of Income Dynamics (PSID).[8] For convenience, in the remainder of the paper we will refer to these women as "widows," even though it in fact includes all unmarried women regardless of previous marital status. In this section we describe the basic structure of the PSID and the selection criteria we use to construct our analytic sample. We then provide some descriptive information about the demographic and economic characteristics of our sample and illustrate of the basic patterns of living arrangements for these older widows. We view these descriptive patterns as exceptionally informative as we know of no study that has been able to examine transitions over a long period of time and document the incidence of multiple transitions. Because of data limitations, most studies have examined cross-sectional patterns or transitions over one or two years.

2.1 The PSID: The PSID is a household based panel survey first fielded in 1968 at which time it

---

[8] Although our focus is on co-residence and caring for unmarried elderly mother, there are numerous interesting questions with regard to caring for unmarried fathers which we ignore. For example, it has been hypothesized that divorced fathers and fathers who were never married to the child's mother, may have weaker ties to their children, be less likely to have substantial contact with them as adults, and less likely to receive assistance in their old age (Lin, 2007). Unfortunately, identifying non-custodial fathers in most data sets – particularly identifying those fathers who were never married to the child's mother – is much more difficult than identifying unmarried mothers, and is likely to lead to severe selection biases in who is included in our sample. For the time being, at least, we ignore elderly men in our study.

was selected to be representative of the population of households in the United States.[9] The survey interviewed its respondents annually until 1997 at which time it switched to biennial interviews. Interviews will continue indefinitely at this rate, with the most recently available data being that collected in 2005. In our study we use data from 1968 until 2003 in order to draw on parent-child linkages available to that point.

The PSID is unusual among panel surveys in that it does not limit its coverage to the set of original respondents first interviewed in 1968, but rather adds children and spouses of these respondents to its sample when they are born or marry the respondent. It then follows not only the adult respondents in its original sample but also the biological and adopted offspring of these respondents, even when they leave their parents' households. These new households are what the PSID terms "split offs" and are treated identically to the original households. In effect, the biological and adopted children of PSID respondents are viewed as being endowed with a "PSID gene" and are followed indefinitely.[10] With these continual additions to the original household members, the initial sample of 18,230 respondents has grown substantially. Even with the reduction in sample size that occurred as of the 1997 interview due to budget constraints and the normal sample attrition, in 2003 there were 22,290 respondents in the PSID.

This policy of following (or attempting to follow) as new household, all children who left an original PSID household, allows us to obtain information on items such as the income and wealth of adult children, even when the children no longer reside with the mother. This is in contrast to most other data sources on elderly parents/widows, such as the Health and Retirement Survey (HRS) and National Long Term Care Survey (NLTCS), where what data that is obtained on children is obtained from reports of the parent. While one might expect that this reliance on proxy reporting by elderly parents for their children produces reliable data on such things as her children's gender and the number and ages of her children's children, i.e., a widow's grandchildren, the accuracy of a widow's proxy report on the annual income or current wealth of her children is clearly more suspect. Moreover, the accuracy of such proxy reports may well vary systematically with whether a widow lives with or close to her children. The drawback of this

---

[9] Because the sample was drawn in 1968, Hispanics, Asians, and immigrants arriving after 1968 are necessarily under-represented relative to today's population. In 1997 the PSID added an immigrant sample and altered the sample weights in an effort to improve the representativeness. Thus, although past analyses suggest significantly different patterns of living arrangements and care giving for elderly Hispanics, we are unable to address this issue.

[10] Note that not all of the original or subsequent members of a PSID household were necessarily followed when they left the latter household. In particular, information on the spouses of PSID "gened" respondents was gathered only as long as they remained in their spouse's household. They were not followed once they divorced or left their PSID-gened spouse. Similarly, the PSID did not follow the step-children of PSID respondents when they left the households unless they had been legally adopted by the PSID respondent.

mode of data gathering is that if the non-co-resident child cannot be located or refuses to participate, we have no information on that child, while with parental reports, presumably some information is always available.

The PSID is unique in the length of time individuals are followed and in the detailed information on the individual's family, including interviews of many, if not all, members of the immediate family. In analyzing these data, we can observe children leave home for the first time as young adults, and examine factors such as their income, occupation, number of children and how these characteristics evolve over time. We also can observe whether, at any point in our data the parent lives with the child. As we demonstrate below, the long time frame helps us avoid the estimation problems posed by the simultaneous determination of living arrangements and employment, income or other child-level variables that may change with the need to provide care. Here we will have information on the child's employment, place of residence, etc. before there exists any need to provide care and similar information on the parent before any move takes place.[11]

Data also exist on the geographic location of parents and children, but these data are confidential and their use is restricted to those who have approved data use agreements. We have applied for permission to use the restricted PSID data containing geographic identifiers. Once we obtain this permission we will be able to measure not just co-residence, but the exact geographic distance between parents and children and between siblings. Following children as they leave their parents' home affords us the opportunity to analyze such issues as whether oldest children strategically reduce the likelihood of caring for a parent by moving far away. In this current version of the paper, we can determine only whether parents and children co-reside, and with respect to geographical proximity, whether they live in the same state.[12]

2.2 Our Analysis Sample: The sample from the PSID that we use in our analysis of the living arrangements of elderly widows was constructed as follows. We begin with female respondents in the PSID who have at least one child and who we observe living without a spouse (either because

[11] There is, of course, the possibility that an adult child remains at home or chooses to establish a home near a parent because she anticipates providing care at some point in the future. See Konrad, Künemund, Lommerud and Robledo (2002) for a game-theoretic model of the potentially strategic nature whether adult children live near or far from their elderly parents.

[12] An alternative to the PSID is to use the Health and Retirement Study (HRS). The HRS provides a much larger sample of elderly widows with information reported on each of their children in each wave of the survey. However, the HRS does not provide geographical information on children which we hope to employ, eventually, nor does it have interviews of the children or as long a time span. Because this is the first step of a large project exploring the causes and consequences of co-residence/geographical proximity, we prefer the PSID.

of death, divorce or separation) at age 65 or later. Because of data limitations and the needs of our study we further restrict our sample in the following ways:

1. *We require that our elderly widows be observed in the year 1984 or later.*

    We restrict our attention to elderly women who are at least 65 years old and observed in year 1984 or thereafter. This restriction is necessary because prior to 1984 there is no information on health status or assets holding in the PSID. In addition, there are issues with respect to the coding of institutional living that make it extremely difficult to identify those who live in a nursing home.[13] Note this selection criterion implies that we lose those women from the earliest birth cohorts who died prior to 1984. All told, there are 1,550 women in the PSID who met this criterion.

2. *We require that the widows in our sample had at least one child who was, at some point, a member of a PSID household.*

    Because our focus is on the decision of a parent to live with a child, we require that the women in our sample have at least one biological child. Using the information that the PSID obtained about each widow's fertility history, we exclude from our sample those women who did not have any biological children who were alive at the time the woman was 65 years old or older. This restriction eliminates 314 childless elderly widows from our sample.

    Furthermore, because we are interested in how widows' living arrangements vary with the characteristics of their children – such as the current incomes of their children, their marital status, or the number of own children – we require information about the children to be reported in the survey. Because children of PSID respondents are followed when they leave a parental home and form their own household, we have information for children regardless of whether they are still members of the widow's household, or had already split off to form their own PSID household. However, such data is not available for children if they had left the widow's household before the original interview in 1968 or if they had never lived with the widow. We exclude the 322 women for whom information is missing for all children.[14]

---

[13] We have verified this data limitation with Robert Schoeni and Tecla Loup at the Survey Research Center at the University of Michigan. See Ellwood and Kane (1990) for a method for attempting to identify nursing home residence.

[14] The PSID following rules are such that all household members at the initial 1968 survey are assumed to be given a PSID gene. They can pass that gene along to their biological (and adopted) children they bear (or adopt) but not to children already born. Thus children of these gened PSID respondents who had already left the home are not given a PSID gene despite their biological ties to the original respondent.

3. *We required that we have data on the widows in our sample when they were age 58.*

Because we want measures of the characteristics of the elderly mothers in our sample long before they are likely to become frail and need care, we require that we observe them in the PSID well before their 65th birthday. We have chosen age 58 as a cut-off although our results are not sensitive to the specific age.[15] By constructing measures of these women's incomes, health statuses, etc. at an age before we might expect the onset of various age-related health and other limitations, we try to avoid the inherent simultaneity of care giving and living arrangements extant in cross-sectional studies. Whereas previous studies have used two-year lagged values of the potentially endogenous variables (e.g. Stern, 1995), we can go much further and look at the value of these variables at least 7 years prior to the year we examine.[16] Satisfying this criterion required us to drop 198 of our initial group of 1,550 widows from our analysis sample.

These criteria for sample selection produce an analysis sample of 716 older women who are not currently married and who have children captured at some point by the PSID. Because of the longitudinal structure of the PSID, we typically have several years of observations for each of our widows, providing us with repeated observations on their living arrangements as well as other time-varying characteristics. These panels are, on average, 7 years in length and result in 4,694 person–years of data. In Table 1, we display the distribution of the number of these person-years by the widow's age and the PSID interview year from which we obtained the data. At the bottom of each of the columns we record the total number of person-years we have at different ages and, in the rows at the right-most column of Table 1, we provide the distribution of person-years by the specific PSID interview year. Finally, moving down a diagonal, from left to right, one can see how the number of person-years for women of a particular birth cohort varies with age and calendar time.

Examining the entries in Table 1 makes clear several important features of the data and also illustrates the consequences of several design features of the PSID. First, as is clear from the column totals at the bottom of this table, our sample selection criteria noted above imply that we have many more person-year observations for widows at younger ages, i.e., from 65 to the mid to

---

[15] This restriction means that we lose observations for many of the oldest widows in the initial PSID survey as they were older than 58 when the survey began. We also lose those who were part of the supplemental Latino and immigrant samples added in the 1990s because they are not observed for enough years to have observations at both age 58 and 65.

[16] McGarry (2003) similarly uses labor force participation of middle aged women several years prior to a parent needing help as an instrumental variable for labor force participation later in life.

late 70s, than for older widows, i.e., widows in their late 70s and older ages. While some of the reduction in person-years with age is due to the fact that women are leaving our sample either due to death or attrition, much of this decline is the result of our sample selection criterion of requiring that we observed these women in the PSID when they were age 58. This restriction effectively "disqualifies" original respondents who were older than 58 when the survey began.

Second, this selection criterion and the structure of the PSID gives rise to a systematic relationship between ages and periods in which ages were drawn. In particular, the majority of person-years for younger ages (i.e., 65 thru the early 70s) are drawn from the earlier interviews that comprise our sample (i.e., the years 1984-1993), while the majority of our person-years for older ages come from more recent waves of the PSID (i.e., 1994-2003).

Third, by looking along the diagonals one can observe the changes in sample sizes of widows in the particular birth cohorts. Some of these changes are the consequences of "real" life cycle phenomena. For example, over time one sees growth in the sizes of some birth cohorts. This pattern is the result of our sampling rule that adds women to our sample (and their person-years) if they become widowed or divorced at ages older than 65. Declines in sample size with age within cohorts (i.e., declines in sample sizes moving down various diagonals) are, in part, the result of attrition from the PSID study or death. However, some of these declines are due to design features of the PSID, most notably to the approximately one-third reduction in sample size between the 1996 and 1997 interviews. While, on average, the declines in sample size for our sample between these two interview years was 32 percent, the reductions in our sample varied substantially by birth cohort, from as high as a 53 percent reduction to as low as an 8 percent reduction.

Finally, another design feature of the PSID that is obvious in Table 1 is the move to biennial interviewing in 1997. This change reduces the number of person-years in our sample in a mechanical way. Moreover, it creates longer "gaps" in the information we have on certain variables that has consequences for the types of analyses we can conduct. Importantly, we go from being able to observe annual changes in living arrangements, from ages t-1 to t, for those person-years gathered prior to 1997 to only being able to construct biennial changes in living arrangements, i.e., changes from age t-2 to t, after 1997.[17]

There are several implications of the inclusions/exclusions noted in Table 1. First, a certain amount of caution is needed in interpreting the variation with age in living arrangements of the widows in our sample or the influence of various factors on these decisions. While we

---

[17] Unfortunately, the PSID event history calendar did not capture changes in living arrangements (email exchange with Tecla Loup).

expect that the age patterns are the result of changes in life-cycle phenomena, they also may be influenced by our sample inclusion rules and the design features of the PSID. In an attempt to account for these factors, we include dummy variables for interview years (or ranges of interview years) in our multivariate analyses. Second, because of this change in the rate of sampling from annual to biennial, we only provide biennial changes in living arrangements in the analyses of the dynamics of living arrangements presented below. Third, these changes in the spacing between interviews and the "pruning" of the PSID sample after 1996 makes it more difficult to estimate hazard rate models of living arrangement changes over the life cycle. Although we continue to work towards this goal, in most of the multivariate analyses we present below, we focus on estimating "state space" representations of living arrangements over the life cycle, i.e., we estimate models of a widow's living arrangement decision at age *t*, rather than the models of "transition rates" of living arrangements from one period to the next. Finally, while not presented in this version of the paper, we plan to explore alternative sample selection rules and ways of using the PSID data, including ways of measuring changes in living arrangements that exploit "finer" geographic information on the residential locations of widows and their children available in confidential versions of the PSID data.

3. Empirical Patterns of Living Arrangements

In this section we begin our look at the living arrangements of elderly widows in the PSID. We seek first to describe the patterns existing in our data and how they relate to characteristics of the elderly woman and her children. Because this is a preliminary look at living arrangements, using data set seldom employed for this purpose, we devote a good deal of time to simple descriptive results before turning to a more formal analysis.

3.1 Living arrangements by age: To obtain a sense of how living arrangements of our widows evolve as women age, we examine the incidence of various living arrangements by age. We define four categories: living alone, living with children, living with others and living in a nursing home. In Figure 1, we present the percentage of widows at each age who have experienced each of these living arrangements at some point after age 65 (and when they were widowed, separated, or divorced). For example, the figure shows that by age 85, almost 34% of widows experienced living with a child at some point. The total number of person-years of data at each age is presented along the top of the figure. Because widows enter our sample at different ages and die or attrit at various times throughout the survey, the number of observations varies by age.

Figure 1 excludes the independent category because 80 percent of the sample lives alone

at some point after age 65. Were the cdf for independent living included on the graph, it would approach 90 percent. With independent living excluded, the next largest category is living with children. In defining this category we separated women living with a child who has not left home since 1968 from those living with a child after spending some time since 1968 living apart from the child.[18] The fraction of widows living with children continuously is relatively constant, decreasing slightly with age. The fraction living with children who left home rises from approximately 20 percent at age 66 to over 30 percent before falling by age 86. The line does not increase monotonically as one would expect with a cumulative distribution function because exits from the sample continually change the underlying population. Still, the sharp upward trend is striking. We note, however, that these co-resident situations do not necessarily mean that the widow is in need of assistance. Rather, it is likely that at least some of the cases (particularly for the relatively young widows) are situations in which the adult child has moved into his mother's home because he needs financial help (the idea of boomerang children discussed frequently in the popular press e.g. Ramachandran, 2005; Business Week, 2003).

The next largest fraction is that living with others. Our definition of others includes grandchildren, and although not highlighted here, living with grandchildren is common among older black women, with almost 25 percent living with others at some point after age 65. There also is a consistent upward trend in nursing home use, except for an unusual spike at age 82. The fraction living in nursing homes does not begin to comprise a meaningful portion of the sample until the oldest ages. This result is consistent with other evidence that for women, nursing home admissions happen primarily at advanced ages.[19]

These results accord with our intuition but also demonstrate that co-residence with children is a much more frequently occurring phenomenon than one might have expected and begins at relatively young ages. Thus, the notion that co-residence exists primarily to benefit a parent who can no longer care for herself ought to be viewed with suspicion.

In Figure 2, we plot the distribution of the *current* living arrangements of the widows in our sample by age. As shown in the figure, the most common living arrangement of unmarried elderly mothers at any age is living alone. For example, as of age 65, 68 percent of our sample is living alone. As the graph shows, the incidence of living alone actually rises with age until around 80, when it starts to decline. This initial rise in the incidence of elderly widows living alone is due

---

[18] The "always lived with child" designation is, in practice, an indicator of whether the widow lived with the child for our entire period of observation--from 1968 until the last time we observe her. The child may have left home prior to 1968 or may leave at some point in the future.

[19] Brown and Finkelstein (2004) provide statistics showing that the average age of first nursing home admission for 65 year old women is 83.

14

almost entirely to the decline in these widows living with their children, something that occurs during widows' late 60s. As can be seen in this figure, 25 percent of the widows in our sample are living with their children at age 65, but this rate declines to around 20 percent by age 70 and continues to decline until widows reach the age of 80, when it starts to rise.

Although the majority of widows living with children at any given age are living with children who at some point had left their parents' household, a substantial fraction of those living with children are living with children with whom they had been co-residing continuously since 1968. For example, at age 65, 45 percent of those living with children are living with children who had not left their parents household. Over time, as these children leave to start their own households, the mother is observed to move from living with a child to living independently. At older ages, the proportions of widows living with children are increasingly comprised of those for whom this is a new arrangement with fewer and fewer cases in which co-residence was continuous. However, it appears that some children never leave; even by age 85, 6.7 percent of widows are living with children who are observed to have live continuously in their mothers' households, and this arrangement constitutes one-quarter of those children living with their mothers at that time. While not shown in Figure 2, a sizeable fraction of the households in our data in which children of elderly widows have not yet left her household are black.

Unlike the fraction of widows who live with children, the fraction who live with others decreases at older ages which is not surprising because many of the widows living with others are living with grandchildren. Finally, we note that our data displays the small but growing fraction of widows that live in nursing homes as they age. At age 65, just 0.1 percent of the widows in our sample live in nursing homes; but by age 80, 7.4 percent of them are in nursing homes and this fraction remains about the same through the mid 80s.

3.2 Correlates of living arrangements: To learn more about what factors are correlated with living arrangements, in Table 2 we present some descriptive statistics of the widow and her family by type of living arrangement. The table shows the means of several variables for our full sample of widows and separately for various subgroups: those who live independently throughout their lives, those who live in a nursing home at some point and those who live with a child at some point.[20] Note that because these "dependent" categories are defined as "at some point," individuals can both live with a child and live in a nursing home. There are 15 such individuals.[21]

---

[20] For ease of presentation, we exclude the "living with others" category from the table.

[21] These 15 widows who both live with a child and live in a nursing home at some point during our window of observation comprise 2 percent of the sample. Four percent or 43 widows both live with a child and live

As before, we divide the category of living with children into two subgroups, those who moved in with a child (or had a child move in with them) at some point after a period of independence, and those who have a child(ren) who has lived at home since 1968. This latter group is noteworthy in part because past studies have made no distinction between the two pathways through which a widow could have arrived at a co-resident arrangement, and yet as will be apparent from the means in the table below, the two groups are very different. The continuous co-residence may be brought upon by longstanding financial or health needs of either party, or may demonstrate a strong taste for co-residence within the family. This is one of the issues we seek to explore further in future work.[22]

Because many of the variables in our analysis vary over time and we have information at many points throughout the widow's life, we report the mean values of the time varying variables at two separate points: 1) at age 58 which we assume to be a proxy for the widow's status prior to there being any chance of the widow's needing care and often while still married, and 2) at the last time we observe the widow in the sample. In this latter case, all widows are at least 65 years old but the age range runs from 65 to 93.

Consider first how these living arrangements vary by the socio-economic status of the widow. There are large differences by race; among women who have always lived independently, only 7 percent are black as are just 3.5 percent of those who at some point live in a nursing home.[23] These figures compare starkly with the 25 percent black among those who have a child who never left home and the 21 percent black among those living with a child at some point. Differences by schooling also are large, with 25 percent of those living alone and 34 percent of those who enter a nursing home having some college compared to just 15-16 percent for those living with a child. Unsurprisingly, there are strong differences by age, with the youngest cohorts not yet old enough to need the services of a nursing home, and by number of children with those living with children having more children on average and more daughters than those living independently. Interestingly, although daughters are consistently found to be the most likely caregivers, it appears that it is the shear number of children that matters most for living

---

with others at some point. We note that this sort of variation over time in living arrangements has typically been overlooked.

[22] Although we do not highlight it in later tables, in approximately one-half of these "always lived with child" cases the child is reported to be receiving disability income (SSI) suggesting that the parent is the caregiver of the child.

[23] One of the drawbacks of the PSID is that because it was representative of the population in 1968, there are too few Hispanics of Asian respondents to support separate analyses for these groups. The 26 women who are neither white nor black are included with whites for the analysis.

arrangements as there is little difference across groups in the fraction of children who are female.

Past work has repeatedly shown that living arrangements are strongly correlated with income. With that in mind, the differences by income are particularly interesting. If one considers income in the last year in which we observe them in our survey data, there are large differences in income across groups. Independent widows have income that is approximately 60-70 percent higher than the incomes of women in the other living arrangement categories. However, it is important to keep in mind that income is not determined independently of living arrangements and the direction of causality is not clear. For instance, it may well be that income is low among nursing home residents because those with low income can qualify for Medicaid, making nursing home residence much more affordable. Alternatively, individuals may have intentionally divested themselves of assets (and thus lost asset income) in order to qualify for Medicaid because they wanted or expected to use a nursing home, or they may have spent down their savings coping with a serious health condition prior to their admission to a nursing home.[24] Similarly, income may be low among those living with children because they retired early in anticipation of living with children, assigned assets to children in exchange for co-residence or out of altruism, or because programs such as SSI reduce benefits for those living in the home of another.

If instead of income at the last observation, we examine the differences in income well before any health conditions or moves took place (age 58 in our analysis) we find much smaller differences across groups. Only those who have always lived with children stand out with significantly lower income, although those who always live independently again have the highest incomes.

Similar patterns are observed with respect to the income of children.

Trying to obtain a widow's or a child's wealth is more difficult because the PSID obtains information on total *household* wealth and does not determine how it is distributed among the members of the household. As a result, if a widow has a child living with her, his wealth will be included in the reported value.[25] Comparisons across those who live with children and those who live independently are therefore not valid. To get around this problem, we calculate a measure of what we term "average dynastic wealth." Average dynastic wealth is the sum of the wealth of the

---

[24] Individuals who are institutionalized and who have little in the way of assets can become eligible for Medicaid even if their income is above the Medicaid eligibility limits, if the cost of the nursing home exceeds their ability to pay. Medicare pays the additional costs of a nursing home, leaving a small amount of cash to the institutionalized individual for personal expenses. Medically needy programs such as this existed in 36 states in 2006.

[25] Even in the case in which the household lives in an owner occupied home, the individual who owns the home is not identified.

widow's own household and the households of all her children, divided by the number of households.[26] In a sense this variable provides an indication of the wealth to which the widow potentially has access. Whereas our other measures of socio-economic status consistently indicated that independent living widows were the best off financially, here we see the highest asset levels for the dynasties of those who entered a nursing home. This pattern suggests that an important predictor of nursing home use might be the child(ren)'s ability to pay for care. As before, those with children who never left are the worst off in financial terms.

If instead of the last year we look back to age 58, the dynasties of those who live with children at some point and those of the independent widows are the wealthiest. The high average wealth of those who are living with children may be due to a small denominator; because of the co-residence, total value of assets is divided across few households. Those who eventually live in a nursing home are not particularly well off at this point.

Health is potentially the most important predictor of living arrangements. Many studies have used indicators of difficulty with activities of daily living (ADLs) as a proxy for an individual's ability to live independently and the need for long-term care. Unfortunately, the health measures in the PSID are limited. Information on limitations with respect to activities of daily living is available for just the years 1992 to 1996 and is therefore of little use in our study which employs a much longer span of time. Self reported health status (excellent, very good,…) is available for everyone in the sample for the years 1992-1996; however, from 1984-1992 and from 1996 onward, it is present for those individuals who are heads of households or the spouse of a head. Although not perfect, this measure is the best we can do and is what we employ in our multivariate analysis. In cases which self reported health is not available for a particular person in a particular year, we use the report from the closest available year.[27]

Using this self-reported health information, albeit less than perfect, we find a large difference across groups. Thirty-two percent of independent widows report themselves in excellent or very good health at the last interview, compared to 8 percent of those in a nursing home, and 20-25 percent of those living with children. Notably, these large differences are evident at age 58 as well.

---

[26] Note that because some children who live in households separate from their mother may not be interviewed by the PSID, this does not truly measure all the wealth available to the dynasty. By using average per household we eliminate any bias due to missing observations as long as the child who are not interviewed are not systematically different in terms of wealth from their included siblings.

[27] Missing values for self reported health are primarily from those who are living with children and who are not the head of a household or spouse. Although unfortunate, this is a rare occurrence and we hope does not affect our conclusions to a measurable extent.

We saw earlier that it was the number of children (and number of daughters) that differed across types of living arrangements, rather than the fraction of children who are female. Because past work has continually found strong evidence that unmarried children are the most likely to provide care, we also look at whether the widow has an unmarried child and/or an unmarried daughter (e.g. Wolf and Soldo, 1988). Because this variable can change over time as a daughter's marital status changes, we report the average probability of having an unmarried child or daughter at both the last observation and when the widow is age 58. Unsurprisingly, women who have a child who never left home are more likely to have both a single child and a single daughter, most probably the child who is still living at home. Those who live with a child but who were at some point independent also are more likely to have single children. Causality is difficult to infer; while it may be most efficient for a single child to move home when the mother needs care, it also could be the case that a single child is having trouble meeting expenses or has moved home after a divorce or separation. Those who live in a nursing home are much less likely to have a single child at the last observation, although there is little difference at age 58. This result suggests that a single child might be protective against nursing home admission.

4. Multivariate Analyses of Living Arrangements

The descriptive evidence points to large differences in the choice of living arrangements by socio-economic status, yet because factors such as race, income and education are correlated, it is impossible to discern their relative effects from a study of the means. To assess more directly how each of these factors influences the choice of living arrangements we turn to a multivariate regression analysis. We stack the observations for each widow in our sample and run a pooled multinomial logit model. Following our more descriptive analyses, we use the following classification of living arrangements of widows at each age: 1) live independently; 2) live with a child after a period of living independently; 3) live with a child who never left his/her parents' household; 4) live with others, including grandchildren; and 5) live in a nursing home. Note that this classification of living arrangements treats those who have a child who never left the home separately from those who live with a child anew, an important distinction given the differences in means for the two groups.

4.1 Replication of Past Analyses: We begin our multivariate analysis with an approximate replication of much of the past cross sectional work. We estimate a simple multivariate logit specification to model the choice of living arrangements of widows as of age *t* as a function of a set of observable characteristics of the mother and her children. Our sample consists of person-

years of observations for all of our widows. We include dummy variables for calendar year and control for age. We have approximately 3800 observations.[28]

The decision to live with a child obviously depends on what other options are available, particularly, the elderly individual's ability to live independently and the price or availability of nursing home care. Unfortunately, the information on health obtained in many waves of the PSID is less than ideal and we have only limited information on self reported health.[29] We include a dummy variable that is equal to one if health is reported to be fair or poor. In future work we will use characteristics of state / year specific Medicaid rules and nursing home beds to proxy the price and availability of institutional care.

To control for the choice set available to the widow with regard to living with children or grandchildren ("other"), we include characteristics of the children. The number of children for the women in our sample varies from one to 15. Thus, it is not feasible to construct a specification with information on each child. Therefore, we include summary statistics for the children including, number of children, number of daughters, whether there exists an unmarried daughter, the median income of the widow's children, the number of grandchildren and the number of grandchildren under 5 years of age.

In Table 3, we report the means of the marginal effects and standard errors from our multinomial logit model using current living status as the left hand side variables and current values of income and socio-demographic characteristics on the right hand side. Estimates are relative to the baseline status of living alone. The coefficient estimates are presented in Appendix Table A1. We have argued previously that income, and some of the other right hand side variables are likely to be jointly determined with living arrangements and thus correlated with the error term in the equation. Later we will suggest alternative specifications to deal with the simultaneous determination of income and living arrangements.

The first column in Table 3 presents the estimated marginal effects of the variables included in our analyses on the probability of living alone. Unsurprisingly, income has a large positive effect. A 10 percent increase in income has a 0.8 percent increase on the probability of

_____

[28] The standard errors correct for clustering at the individual level. Future work will control for individual fixed effects to allow, for example, for correlation between the unmeasured demand for independence and income.

[29] Self reported health is obviously subjective and may actually even itself depend on the living arrangement of the widow and how cared for she feels. An alternative measure of health that is used in many studies is the number of limitations with respect to activities of daily living. However, anecdotal evidence suggests that individuals who do not have someone to provide assistance with, say, dressing, devise ways of dealing with the task while those who have family to turn to, report that they require assistance. Thus, it is not clear that even apparently objective measures such as ADL limitations are independent of the availability of care.

living alone. Surprisingly, despite the strong differences by race in Table 2, the marginal effect of race on living alone is not significantly different from zero, nor are there significant differences by schooling level. Health does have a strong effect with those in poor health being 4 percent less likely to live alone. The median income of children also has a large positive effect on living alone, perhaps representing the intergenerational correlation of wealth, that the children are able to help the parent financially if need be, or that the children are able to work without being burdened by care for an elderly parent. Neither the number of children nor the number of grandchildren has an effect, nor are there differences by year. We parameterize wealth in logs and control for negative or zero net worth with a dummy variable set equal to one and the logged value set to zero. Here the indicator of zero/negative wealth has a large effect, but the coefficient should be viewed with caution because there are few people with negative net worth living alone.[30]

With respect to nursing home care, income of the widow now has no effect nor does race or schooling. Age and being in poor health, unsurprisingly, have positive effects with each 10 years of age increasing the probability of being in a nursing home by 3 percent and those in fair or poor health having a 4 percent greater risk. The median income of children has a slight positive effect but dynastic assets appear to be relatively unimportant. The number of children and number of grandchildren do not affect the likelihood of nursing home admission but having a single daughter dramatically lowers the probability.

The income of widows is negative related to living with children who had previously left home; a 10 percent increase in income decreases the probability of co-residence by 0.25 percent. Both having a single daughter and the fraction of children who are daughters have significant effects on co-residing with children, but they act in opposite directions. Still, having a single daughter appears to increase one's chances of living with a child (likely with the single daughter). With respect to children's income, the higher median income of children, the lower the probability of living with a child, suggesting again that, as with the living alone results, children can either help support parental independence or benefit themselves for parental independence. In either case, however, causality cannot be inferred.

The results for living with children who never left their parents' home are quite different presented in Table 3, emphasizing the importance of controlling for the evolution of living

---

[30] We also view this estimate as tentative as the variable dynastic assets captures only the assets of the widow herself and those children who are surveyed by the PSID and is therefore neither an accurate measure of the widow's own assets nor those of all her children. We hope to try to refine this measure in future work. We experimented with alternative specifications for assets including quartiles and linear forms. In no case did the coefficients on other variables change in any noticeable way.

arrangements. In particular, differences in the widow's current income, the income of her children or her health status do not appear to affect the probability of living with a child who never left . At the same time, the more grandchildren a widow, the less likely she is to live with children who never left, with this result likely to be because children who have lived at home continuously have not had grandchildren. Having no or negative dynastic wealth has a large positive effect on living with children who never left, suggesting that this arrangement is common among poorer families. There also is a positive relationship between non-zero assets and living with other children. From closer inspection of these observations, it appears that this category consists of poor, typically black families and some wealthy white families.[31]

One of the strongest predictors of living with others is race: blacks are 4 percent more likely to live with others than are whites. Recall that many of these "other" individuals are grandchildren, hence the number of grandchildren is positively related to living with others. But the effect is small; each grandchild increases the probability of this form of living arrangement by just 0.6 percent. The fraction of children who are daughters is positively related to living with others, in contrast to the common wisdom that daughters care for their elderly parents.

4.2 Lagged Values of Explanatory Variables: The difficulty with interpreting effects of current economic and health statuses on widows' living arrangements presented in Table 3 (and found in much of the past literature) is that these current statuses are likely to be endogenously determined. For example, one might expect that widows with higher current income are more likely to be observed to live independently. However, the causal effect of widow's current income on her living arrangements is less clear cut. An older woman may live with a child because she cannot afford to live alone, or she many have retired early and have lower income because she knew she would eventually be co-residing with an offspring. Similarly, public assistance programs often consider living arrangements when determining benefits so there is a programmatic relationship between income and living arrangements.

Several studies to date have used differences across time and across states in public transfer programs to get around the endogeneity (Costa, 1999; McGarry and Schoeni, 2000; Gruber et al., 2005). Here we take a different approach. We draw on the panel aspect of the PSID and use lagged values of the potentially endogenous variables rather than their contemporaneous values. For example, we can use the income of the mother from a previous period in lieu of her current income. Similarly, we can use lagged labor force participation in lieu of current working

---

[31] The latter consistent with findings of Laferrère (2005a) where the quality of "the nest" can keep children home.

status of the children. The use of lagged values of potentially endogenous variables is similar in spirit to the use of lagged values of these variables as instruments found in Stern (1995) and other studies. However, the lagged values Stern uses as instruments are measured two years prior to the year of interest, raising the real possibility that a response to future living arrangements may have already been made. (For example, an elderly person may have retired or given away their assets at age t-2 in anticipation of moving in with a child or entering a nursing home at age t.) With the PSID, we are able to improve on this methodology by using lagged values 7 or more years before the observation of interest.[32]

In Table 4, we present estimates based on the same specification that underlies the estimates in Table 3, except we use lagged values for widow's family structure and economic status variables.[33] We experimented with several different lengths of lags from two years up to seven year. In the results we present we use the values measured when the widow was 58. For the majority of women in our sample this was prior to the death of her husband and likely in the couple's peak earning years. We thus view this measure as a proxy for lifetime resources.

Table 4 shows the marginal effects of the regressors using the measures when the widow was 58, with the coefficient estimates presented in Appendix Table 2A. With these lagged measures, we find that the effect of a widow's income on living independently is substantially reduced and is no longer significantly different from zero. This result accords with our intuition that income is likely to be endogenously determined. A widow eager to maintain independence may work harder or longer to be able to afford to do so. One who is happy to live with her children will need less income. Thus, when we measure resources before the change in living arrangements has taken place, when a woman and, potentially, her husband are in their peak earning years, there is no difference in income between the two groups. We emphasize that this is an important result. Furthermore, if we use income lagged just two years, as has been done elsewhere, we find an effect nearly equal to that for current income, specifically, a 10 percent increase in income is correlated with a 0.61 percent increase in the probability of living alone.

With respect to nursing home use, when we control for income and assets at age 58 we see a significantly negative effect of being black. Black women are nearly 3 percent less likely to use a nursing home than are white. Other financial measures have little effect.

---

[32] This strategy assumes that individuals did not plan for co-residence throughout their life and alter their income streams accordingly. If income (and other variables) as far back as age 58 are determined jointly with later living arrangements then this strategy fails. We believe that it is unlikely that this problem exists.

[33] In future drafts of this paper, we will more closely replicate Stern's uses of lagged values of variables like widow's income and health status and children's income as instrumental variables for the contemporaneous effect of these variables on the living arrangement choices of widows.

Lagged income also has little effect on the probability of living with children. Whereas current income was negatively related to living with children, income at age 58 has no effect. Here again, with lagged values of income, race is significant. This result suggests that conditional on income at age 58, future outcomes for blacks and white differ significantly, while conditional on current income, outcomes do not differ. Lagged dynastic assets and lagged median income of children again have no effect.

The results for the effect of a widow's income on the likelihood of living with children who never left are reversed. Current income was not significantly related to this outcome, but lagged income has a significantly negative effect on living with a child who never left, indicating that families in which a child has remained at home were initially less well off.

These results demonstrate that the time at which income and assets are measured alters significantly the magnitude of the effects. Further, they provide strong indications not only that contemporaneous measures of income are endogenous, but in results not presented here, we find that even measured of income and wealth lagged by two years are likely to suffer from simultaneity bias.

5.   Dynamic Aspects of Living Arrangements

Despite the appealing simplicity of the static analysis presented in sections 3 and 4 and its long history of use, in reality the evolution of living arrangements is likely to be more complicated than a simple cross sectional regression suggests. One can well imagine a progression of need with a widow moving from living independently to living with a child (or grandchild) to living in a nursing home. Studies examining the choice of living arrangements have treated living with children or in a nursing home as an absorbing state and have model a single transition. However, it is certainly possible for individuals to move from one state to another. In Tables 5a-5c, we address this issue by showing the transition matrices for the probability of transiting from each of four living arrangements—independently, with a child, in a nursing home, with others—to each of the others for a stacked sample of our data. Because the PSID altered the length of time between interviews from one year to two years, the time span over which a move could have occurred varies within our sample. To control for this variation, we "force" the sample to be biennial and examine transitions over a two year period by looking at changes across odd number years. (Thus, if a woman is observed annually from 1988-1997, we compare living arrangements as reported in 1989, 1991, 1993, 1995 and 1997.) Further, because we stack the data, if a woman is observed for say five, two year periods after age 65, she will contribute four observations

representing four potential transition periods over the sample period.

The frequencies and probabilities of living arrangement transitions for all of the widows in our sample are presented in Table 5a. As is clear from the diagonal elements of the transition probability entries, the vast majority of individuals do not change their living arrangements over a two year period. Among those living independently, 90 percent stay in the same state and just 5 percent move to living with a child. There is more movement in the other categories, with 14 percent of those living with children transitioning to independent living and 26 percent of those in a nursing home moving to living alone. Surprisingly, there are a large number of moves to independent living; 14 percent of those living with children, 29 percent of those living with others, and 26 percent of those living in an institution move to independence.

In the regression analyses presented above and from the cross-tabulations of means, we found large differences in living arrangements by race, with blacks much more likely to live with children than whites and much less likely to live in a nursing home. In terms of the transitions among living arrangements, we also see strong racial differences. As shown in Table 5b, while 5 percent of white widows living alone transit to living with a child in a given period, 12 percent of widows who are black make this transition. Similarly, while just 2 percent of white widows move to living with others, 6 percent of widows who are black make this change. (Recall that "others" include grandchildren, a common phenomenon among the black women in our sample.) White widows also are more likely than blacks to move out of a co-resident relationship.

Obviously transition probabilities are likely to vary with age. In Table 5c, we repeat the tabulations from Table 5a for each of 4 age categories (67-71, 72-76, 77-81, 82-86) but note that the number of observations gets small in each category. As one would expect, there are more movements into an institution at advanced ages, but surprising, even among those in their 80s there are a good number of moves to independence. Twelve percent of those living with children, 30 percent of those living with others, and 30 percent of those living in a nursing home transition to independent living. This result emphasizes the importance of controlling for the dynamic aspect of living arrangements.

The transition matrices presented in Tables 5a-5c reveal only part of the story. They show the likelihood of a transition from one state to another between two periods. They do not, however, tell us how common are second or third transitions. Although our sample is relatively young and in reasonably good health throughout our window of observation, we present, in Table 6, tabulations of the frequency of multiple transitions. Therein, we show the number and percent of individuals experiencing one, two or three transitions in our data. Among those making at least one transition (39 percent of the sample), 35 percent make two or more transitions and 12 percent

make three or more. The average number is 1.56.

Because individuals are viewed for different lengths of time, we also look at this number in terms of transitions relative to the number of potential transitions (defined as one less than the number of periods observed). Among those making at least one transition, the average number of transition per potential transition is 0.36, or one transition every 2.7 periods (or 5 years).

Among those making transitions, the most common pathway, accounting for nearly one-third of the transitions (not shown), is a simple one-step transition from living alone to living with a child. For those making two or more transition, the next most common sequence of moves, accounting for approximately 10 percent of all cases, is moving from living alone, to living with children, back to living alone. This pattern is likely often to reflect a child moving in with a parent for a short period of time. It may be while the parent recovers from an illness or other health problem, but also could indicate that the child has fallen on hard times and needs help from his parent.

All told, elderly widows do not tend to change their living arrangements frequently. However, modeling mobility and living arrangements among the elderly with the idea that there is a single move from independent living to dependency, misses an important aspect of the situation, namely that many elderly change living arrangements more than once and there are many moves from living in a co-resident or institutional setting to independence. These moves need to be understood more fully.

As with other aspects of behavior, it is likely that individuals differ in their propensity to change states; there are movers and stayers. With the data available in the PSID we can control for individual fixed effects and examine the correlates of within person changes in behavior.

6. Conclusion and Directions for Future Work

We have attempted to demonstrate the potential for the PSID to be informative about family living arrangements. Although our empirical work has just scratched the surface of what is possible, we hope we have inspired interested readers to look further into the possible exploitation of nearly 40 years of data on living arrangements of parents and children available in the PSID.

In highlighting the strengths and weakness of the data set we also have uncovered interesting dynamic aspects of behavior, and in particular, that neither living with others (children, grandchildren or friends) or living in a nursing home is necessarily associated with lifelong dependence; individuals can and do transit to living on their own after a spell in one of

these states. Future work will investigate this phenomenon more fully. We also find strong evidence that current income, and even income in the most recent past, is likely to be determined simultaneously with living arrangements and therefore provides a biased estimate of the effect of income on living arrangements. By using lagged values for income and assets of seven or more years, we find much different effects than we do with contemporaneous measures.

We anticipate, eventually drawing on the proprietary geocoded data in the PSID to examine living arrangements that likely involve some physical or emotional support but that fall short of co-residence. We will look at moves that are made that involve living closer to a child / grandchild / sibling or parent and assess how these transitions relate to other types of living arrangements.

We believe that these analyses provide new information that will begin to help economists find answers to patterns of familial behavior and help policy makers who must make decisions about how social insurance and welfare programs, such as Medicare and Medicaid, might best be structured to ensure the well-being of the elderly without crowding out support from family members. The aging of the population, needed changes in Social Security, Medicare, and Medicaid programs, and changes in the labor force behavior of daughters all indicate that these issues are becoming increasingly important both in the United States and throughout the developed world.

References

AHRQ, 2001. "Characteristics of Long-term Care Users," research report. Washington D.C.

Arno, Peter, Carol Levine and Margaret Memmott, 2002. "The Economic Value of Informal Caregiving," *Health Affairs* 18 (2): 182-188.

Bianchi, Suzanne M., V. Joseph Hotz, Kathleen M. McGarry and Judith A. Seltzer, forthcoming. "Intergenerational Ties: Alternative Theories, Empirical Findings and Trends, and Remaining Challenges," forthcoming in *Caring and Exchange Within and Across Generations*, A. Booth, N. Crouter, S. Bianchi and J. Seltzer eds., Urban Institute Press.

Borsch-Supan, Axel, Vassilis Hajivassiliou, Laurence J. Kotlikoff, and John N. Morris, 1992. "Health, Children, and Elderly Living Arrangements: A Multiperiod-Multinomial Probit Model with Unobserved Heterogeneity and Autocorrelated Errors," in *Topics in the Economics of Aging, David Wise*, ed., Chicago: The University of Chicago Press, pp. 79-108.

Brown, Jeffrey and Amy Finkelstein, 2004. "The Interaction of Public and Private Insurance: Medicaid and the Long-Term Care Insurance Market," NBER working paper 10989.

Business Week, 2003. "Mom And Dad, I'm Home—Again," Business Week, Personal Business, November 3, 2003, webpage www.businessweek.com/magazine/content/03_44/b3856124.htm.

Byrne, David, Michelle Goeree, Bridget Hiedemann and Steven Stern, 2007. "Formal Home Health Care, Informal Care and Family Decision Making," Unpublished manuscript, University of Virginia, July.

Checkovich, Tennille J. and Steven Stern, 2002. "Shared Caregiving Responsibilities of Adult Siblings with Elderly Parents," *Journal of Human Resources*, 37(3): pp. 441-478.

Costa, Dora, 1999. "A House of her Own: Old Age Assistance and the Living Arrangements of Older Nonmarried Women," *Journal of Public Economics*, 72(1): 39-59.

Dwyer, J. and R. Coward, 1991. "A multivariate comparison of the involvement of adult sons versus daughters in the care of impaired adults," *Journals of Gerontology, Social Sciences*, 46 s259-269.

Ellwood, David and Thomas Kane, 1990. "The American Way of Aging: An Event History Analysis," in *Issues in the Economics of Aging*, Wise, David A., ed., Chicago: The University of Chicago Press.

Engers, Maxim and Steven Stern, 2002. "Long-Term Care and Family Bargaining," *International Economic Review*, 43(1): 73-113.

Garber, Alan M. and Thomas E. MaCurdy, 1993. "Nursing Home Discharges and Exhaustion of Medicare Benefits," *Journal of the American Statistical Association*, 88(423): 727-736.

Gruber, Jonathan, Gary Engelhardt and Cindy Perry, 2005. "Social Security and Elderly Living Arrangements: Evidence from the Social Security Notch," *Journal of Human Resources,* 40(2): 354-372.

Henretta, John, Martha Hill, Wei Li, Beth Soldo, and Douglas Wolf, "Selection of children to Provide Care: The Effect of Earlier Parental Transfers," *The Journals of Gerontology: Social Sciences*, 52B : 110-119.

Hoerger, Thomas J., Gabriel A. Picone and Frank A. Sloan. 1996. "Public Subsidies, Private Provision of Care and Living Arrangements of the Elderly. *Review of Economics and Statistics*, 40(1): 29-57.

Kobrin, Frances E., 1976. "The Fall in Household Size and the Rise of the Primary Individual in the United States," *Demography*, 13(1): 127-138.

Konrad, Kai, Harald Künemund, Kjell Erik Lommerud and Julio Robledo, 2002. "Geography of the Family," *American Economic Review*, 92(40: 981-998.

Kramarow, Ellen A., 1995. "The Elderly Who Live Alone in the United States: Historical Perspectives on Household Change," *Demography*, 32(3): 335-352.

Leferrère, Anne, 2005a. "Leaving the Nest: The Interaction of Parental Income and Family Environment," mimeo: CREST

Leferrère, Anne, 2005b. "Old age and Housing: Dissaving, Adjusting Consumption, and the Role of Children," mimeo: CREST

Lin, I-Fen, 2007. "Consequences of Parental Divorce for Adult Children's Support of Their Frail Parents," mimeo: Bowling Green University.

McGarry, Kathleen and Robert F. Schoeni, 2000. "Social Security, Economic Growth, and the Rise if Independence of Elderly Widows Unmarried Women in the 20th Century," *Demography*, 37 (2): 221-236.

McGarry, Kathleen, 1998. "Caring for the Elderly: The Role of Adult Children," in *Inquiries in the Economics of Aging.* David A. Wise, ed. Chicago: University of Chicago Press, 463-485.

McGarry, Kathleen, 2003. "Does Caregiving Affect Work? Evidence Bassed on Prior Labor Force Experience," *Health Care Issues in the United States and Japan*, David A. Wise, ed. Chicago: University of Chicago Press.

MetLife, 2006. *The MetLife Market Survey of Nursing Home and Home Care Cost, September, 2006*. Westport, CT: MetLife Mature Market Institute.

Michael, Robert T., Victor R. Fuchs and Sharon R. Scott, 1980. "Changes in the Propensity to Live Alone: 1950-1976," *Demography*, 17(1): 39-56.

Pezzin, Liliana E. and Barbara S. Schone, 1997. "The Allocation of Resources in Intergenerational Households: Adult Children and their Elderly Parents," *American Economic Review*, 87(2): 460-464.

Pezzin, Liliana E. and Barbara S. Schone, 1999. "Intergenerational Household Formation, Female Labor Supply and Informal Caregiving: A Bargaining Approach," *Journal of Human Resources*, 34(3): 475-503.

Pezzin, Liliana E., Robert A. Pollak and Barbara S. Schone, 2007. "Efficiency in Family

Bargaining: Living Arrangements and Caregiving Decisions of Adult Children and Disabled Elderly Parents," *CESifo Economic Studies*, 53(1): 69-96.

Pezzin, Liliana E., Robert A. Pollak and Barbara S. Schone, forthcoming. "Family Bargaining and Long-Term Care of the Disabled Elderly," forthcoming in *Caring and Exchange Within and Across Generations*, A. Booth, N. Crouter, S. Bianchi and J. Seltzer eds., Urban Institute Press.

Ramachandran, Nisha, 2005. "The Parent Trap: Boomerang Kids" U.S. News and World Report, December 4, 2005.

Ruggles, Steven, forthcoming. "The Decline of Intergenerational Co-residence in the United States, 1850-2000." Forthcoming in *American Sociological Review*.

Ruggles, Steven. 1994, "The Transformation of American Family Structure." *American Historical Review*, 99(1): pp. 103-128.

Schoeni, Robert, 1998. "Reassessing the Decline in Parent-Child Old-Age Co-residence during the Twentieth Century," *Demography*, 35(3): 307-313.

Schwartz, Saul, Sheldon Danziger and Eugene Smolensky, 1984. "The Choice of Living Arrangements among the Aged," in *Retirement and Economic Behavior*, Henry Aaron and Gary Burtless, eds., Washington: Brookings Institution Press.

Sheiner, Lousie and David Weil, 1992. "The Housing Wealth of the Aged," NBER working paper number 4115.

Social Security Administration, 2006. "State Assistance Programs for SSI Recipients," January, 2006. Social Security Administration, Office of Policy Data.

Soldo, Beth, Douglas Wolf, Emily Agree, "Families, households, and care arrangements of frail older women: A structural analysis," *Journals of Gerontology, Social Scienices*, 45 : s238-249.

Stern, Steven, 1995. "Estimating Family Long-Term Care Decisions in the Presence of Endogenous Child Characteristics," *Journal of Human Resources*, 30(3): 551-580.

Venti, Steven and David Wise, 2000. "Aging and Housing Equity," NBER working paper 7882.

Venti, Steven and David Wise, 2001. "Aging and Housing Equity: Another look," NBER working paper number 8608.

Wolf, Douglas A. and Beth J. Soldo, 1988. "Household Composition Choices of Older Unmarried Women." *Demography*, 25(3): 387-403.

Figure 1: Distribution of Elderly Unmarried Women Ever Lived in Arrangement by Age
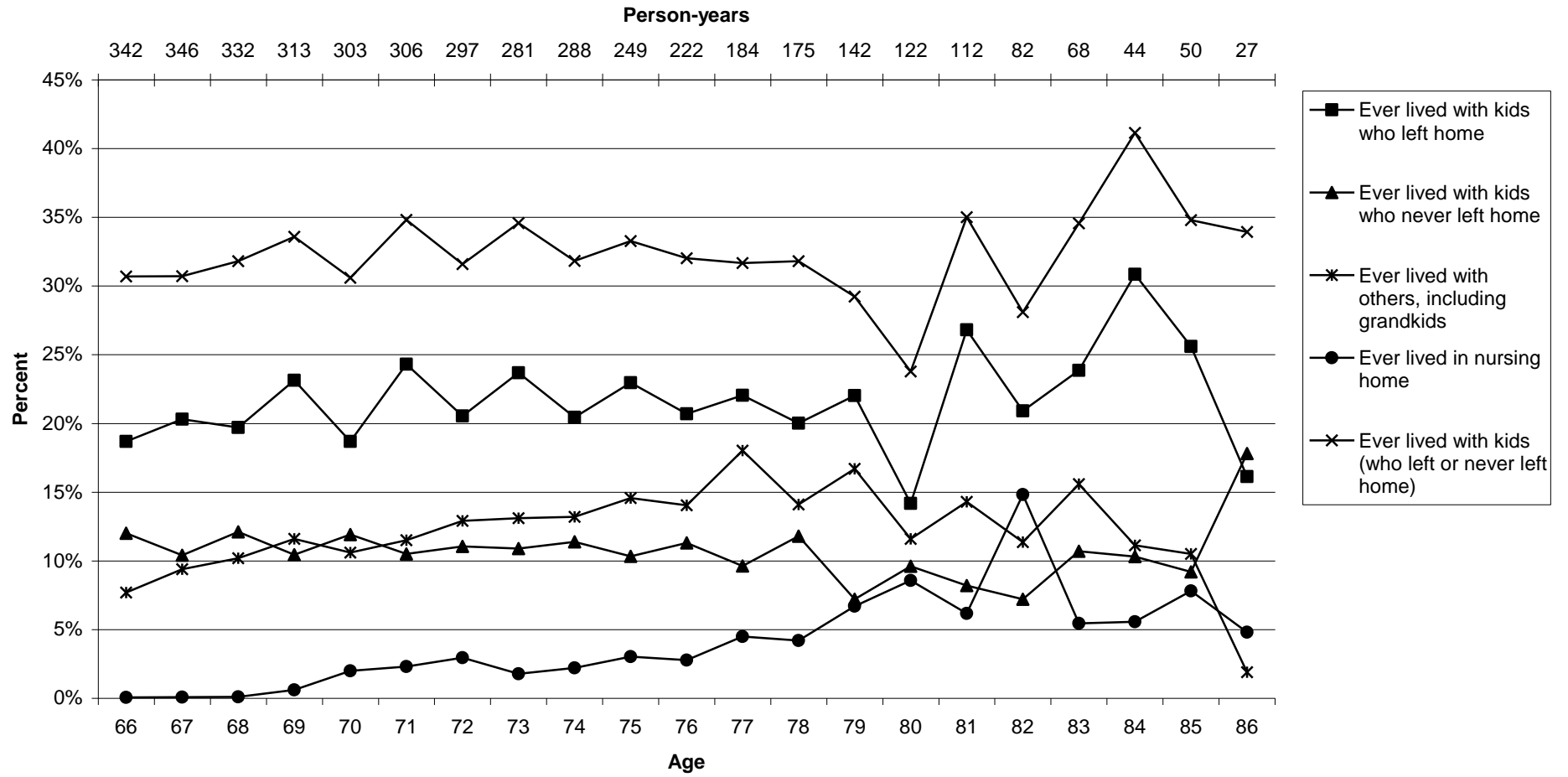
Figure 2: Distribution of Current Living Arrangements of Elderly Unmarried Women by Age
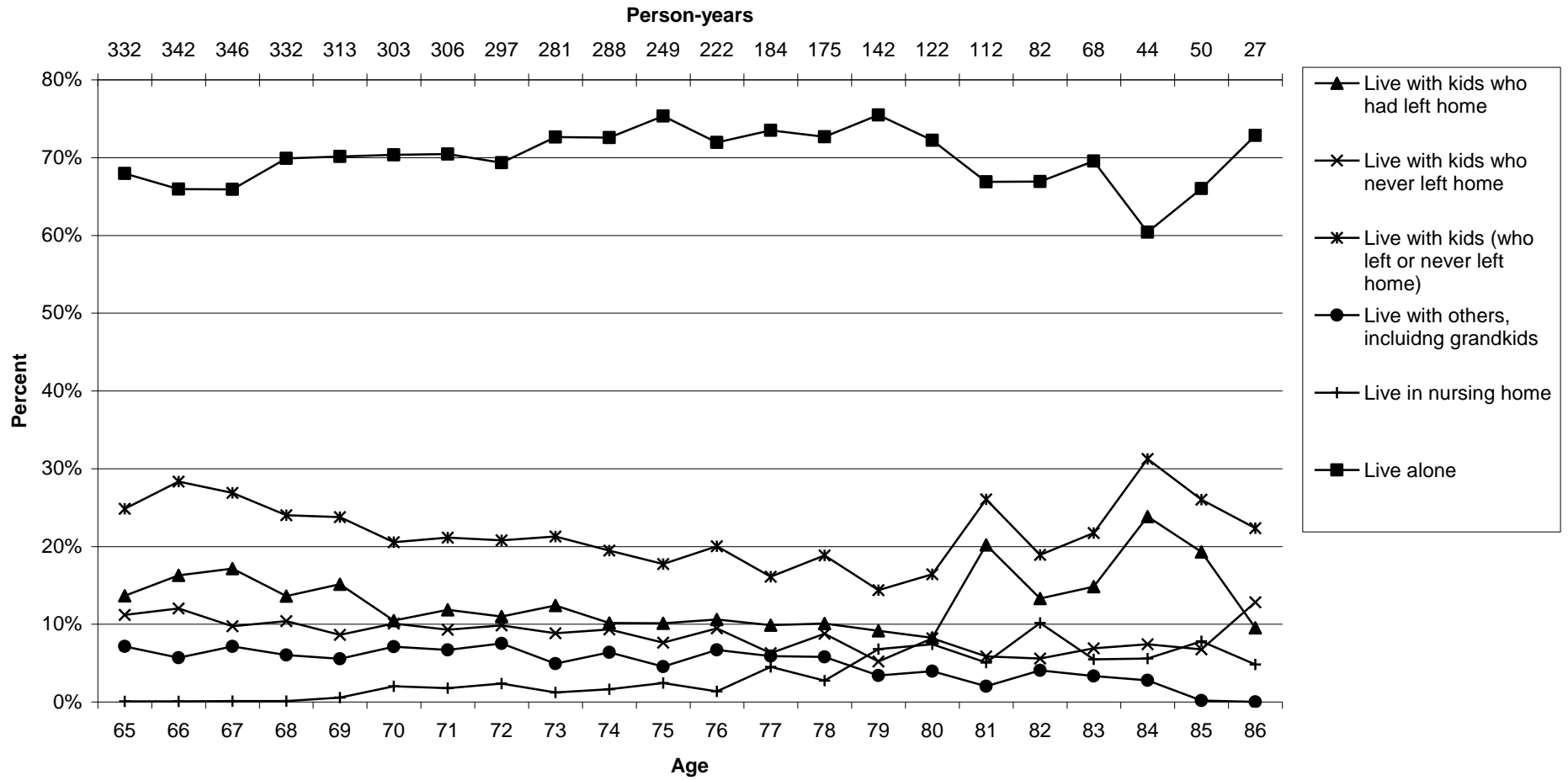
Table 1: Distribution of Number of Person-Years in Sample by Age and Year of the PSID Interview

Year of Interview	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	Total
1984	12	19	18	14	15	15	11	13	16	11																				144
1985	17	11	19	17	14	15	15	11	14	15	11																			159
1986	17	19	10	20	16	15	14	16	10	13	15	10																		175
1987	27	17	17	9	21	17	16	15	16	10	11	14	10																	200
1988	20	26	17	17	8	22	17	16	14	16	10	10	13	10																216
1989	25	22	28	17	16	6	22	17	16	14	16	9	10	13	7															238
1990	20	26	22	30	18	16	8	21	17	15	14	17	9	11	12	7														263
1991	17	23	26	22	28	19	19	9	21	17	15	14	16	8	10	13	7													284
1992	26	21	23	26	22	25	21	20	9	21	18	15	14	17	7	7	13	7												312
1993	25	27	20	22	26	20	27	21	20	10	20	18	15	12	16	5	10	13	6											333
1994	33	26	27	20	23	25	21	26	22	21	11	19	16	14	10	16	4	8	14	5										361
1995	24	33	26	28	17	24	24	22	24	22	21	9	17	14	13	9	17	4	8	14	5									375
1996	15	26	33	24	29	16	25	26	21	25	22	19	9	17	14	13	10	14	4	9	13	5								389
1997	15	10	15	27	19	16	9	14	18	18	17	18	9	8	12	9	11	6	9	2	6	12	3							283
1998																														
1999	10	12	20	11	13	27	22	17	10	15	15	17	19	19	9	7	14	9	8	5	8	2	7	9	2					307
2000																														
2001	12	10	9	15	18	10	13	23	19	19	9	13	15	16	16	18	8	6	10	4	8	4	7	2	6	8	1			299
2002																														
2003	17	14	16	13	10	15	22	10	14	26	24	20	12	16	16	18	18	15	9	5	10	4	8	4	6	1	5	7	1	356
Total	332	342	346	332	313	303	306	297	281	288	249	222	184	175	142	122	112	82	68	44	50	27	25	15	14	9	6	7	1	4,694

(age 58 occurs before 1968)

| | | | | With children | |
| | | | | | |
Variables	All (N=716)	Alone (N=284)	NH (N=46)	Never Left (N=77)	Had Left (N=252)
Time invariant:					
Black	0.13 (0.017)	0.07 (0.013)	0.035 (0.026)	0.248 (0.067)	0.215 (0.033)
Schooling:					
< High School	0.35 (0.027)	0.31 (0.039)	0.40 (0.078)	0.53 (0.077)	0.39 (0.040)
HS degree	0.43 (0.022)	0.44 (0.042)	0.26 (0.076)	0.31 (0.083)	0.46 (0.038)
Some college	0.22 (0.015)	0.25 (0/021)	0.34 (0.073)	0.16 (0.069)	0.16 (0.030)
Num children	3.80 (0.098)	3.57 (0.127)	3.62 (0.32)	4.87 (0.415)	4.12 (0.171)
Num daughters	1.81 (0.072)	1.71 (0.093)	1.64 (0.205)	2.30 (0.291)	1.93 (0.118)
Frac daughters	0.48 (0.014)	0.48 (0.022)	0.47 (0.053)	0.44 (0.043)	0.47 (0.023)
At Last Observation for widow:					
Age	76.40 (0.33)	75.17 (0.46)	81.42 (0.82)	75.75 (1.07)	77.14 (0.52)
Income (1000s)	20.34 (1.27)	25.00 (2.55)	14.79 (1.82)	16.38 (1.98)	15.71 (1.05)
Dynastic assets (avg)	18.10 (1.89)	21.10 (2.81)	18.90 (5.06)	15.50 (5.54)	14.60 (2.02)
Health:					
Excellent	0.05 (0.012)	0.08 (0.021)	0.03 (0.030)	0.07 (0.038)	0.03 (0.015)
Very good	0.20 (0.015)	0.25 (0.036)	0.06 (0.036)	0.19 (0.081)	0.16 (0.030)
Good	0.30 (0.021)	0.29 (0.036)	0.26 (0.063)	0.25 (0.073)	0.30 (0.042)
Fair	0.23 (0.025)	0.22 (0.031)	0.30 (0.065)	0.25 (0.074)	0.19 (0.031)
Poor	0.19 (0.016)	0.17 (0.025)	0.33 (0.066)	0.14 (0.057)	0.24 (0.030)
Missing	0.03 (0.007)	0.00	0.02 (0.024)	0.11 (0.052)	0.08 (0.020)
Kids med inc (1000s)	65.70 (3.91)	78.70 (6.59)	68.70 (8.21)	41.50 (7.33)	47.20 (3.77)
Has single child	0.53 (0.027)	0.38 (0.027)	0.19 (0.075)	0.98 (0.009)	0.76 (0.042)
Single daughter	0.30 (0.021)	0.24 (0.023)	0.036 (0.32)	0.46 (0.098)	0.44 (0.044)
Num grandkids	3.96 (0.166)	3.77 (0.232)	3.28 (0.680)	4.10 (0.722)	4.55 (0.336)
At Age 58					
Income	37.06 (1.76)	38.85 (2.26)	36.43 (4.78)	25.74 (3.81)	36.52 (3.32)
Dynastic assets, 10,000s	16.83 (3.94)	19.4 (4.51)	12.2 (3.45)	9.9 (0.29)	15.4 (5.22)
Health					
Excellent	0.06 (0.011)	0.08 (0.018)	0.06 (0.037)	0.02 (0.017)	0.02 (0.014)
Very good	0.09 (0.012)	0.12 (0.018)	0.00	0.07 (0.048)	0.06 (0.020)
Good	0.15 (0.017)	0.15 (0.022)	0.03 (0.028)	0.18 (0.059)	0.16 (0.034)
Fair	0.10 (0.016)	0.13 (0.025)	0.00	0.05 (0.031)	0.10 (0.022)
Poor	0.02 (0.005)	0.02 (0.008)	0.002 (0.002)	0.01 (0.004)	0.03 (0.012)
Missing	0.58 (0.024)	0.50 (0.034)	0.91 (0.40)	0.68 (0.053)	0.63 (0.037)
Kids median inc (1000s)	39.66 (1.28)	45.89 (2.11)	31.75 (4.37)	27.30 (4.88)	34.99 (2.23)
Single child	0.65 (0.022)	0.57 (0.029)	0.73 (0.080)	0.98 (0.008)	0.74 (0.046)
Single daughter	0.39 (0.010)	0.34 (0.027)	0.45 (0.087)	0.59 (0.084)	0.45 (0.040)
Num grandkids	2.44 (0.132)	2.33 (0.203)	1.15 (0.263)	2.38 (0.485)	2.76 (0.195)

Table 3: Multinomial Logit for Living Arrangement, Marginal Effects

| | Alone | Nursing Home | With children | | Other |
| | | | Left Home | Never Left | |
Variables	Coeff (std error)	Coeff (std error)	Coeff (std error)	Coeff (std error)	Coeff (std error)
Log income	0.082 (0.029)	-0.002 (0.002)	-0.025 (0.010)	-0.004 (0.008)	0.010 (0.006)
Black	-0.137 (0.103)	-0.012 (0.009)	0.006 (0.033)	0.014 (0.042)	0.039 (0.018)
Age	-0.011 (0.012)	0.003 (0.001)	0.003 (0.004)	0.002 (0.005)	-0.002 (0.002)
Schooling:					
< High School	--	--	--	--	--
HS degree	0.015 (0.109)	-0.004 (0.012)	0.009 (0.038)	-0.051 (0.047)	0.005 (0.021)
Some college	0.050 (0.160)	0.004 (0.012)	-0.008 (0.047)	-0.094 (0.071)	0.006 (0.024)
Health fair or poor	-0.041 (0.080)	0.039 (0.011)	-0.019 (0.023)	-0.016 (0.027)	-0.009 (0.012)
Num children	-0.030 (0.030)	-0.004 (0.004)	0.015 (0.009)	0.020 (0.009)	-0.002 (0.005)
Frac daughters	0.350 (0.173)	0.009 (0.016)	-0.125 (0.057)	-0.015 (0.060)	0.039 (0.030)
Log dynastic assets	-0.040 (0.033)	0.003 (0.003)	-0.005 (0.009)	0.040 (0.013)	0.001 (0.005)
Wealth neg/zero	-0.557 (0.070)	0.077 (0.043)	0.034 (0.101)	0.457 (0.149)	-0.050 (0.052)
Log median kids inc	0.203 (0.060)	0.009 (0.005)	-0.041 (0.011)	-0.012 (0.007)	-0.002 (0.004)
Single daughter	-0.179 (0.111)	-0.034 (0.011)	0.138 (0.036)	0.038 (0.036)	-0.015 (0.017)
Num grandkids	0.010 (0.016)	0.001 (0.001)	-0.011 (0.004)	-0.013 (0.005)	0.006 (0.003)
Num grandkids < 5	-0.006 (0.044)	-0.001 (0.007)	0.030 (0.014)	-0.003 (0.016)	-0.015 (0.007)
Has child not observed	0.109 (0.141)	0.000 (0.014)	-0.071 (0.041)	0.019 (0.044)	0.007 (0.021)
Has a disabled child	-0.070 (0.121)	0.010 (0.014)	0.011 (0.036)	0.009 (0.036)	0.001 (0.020)
Age oldest child	0.005 (0.012)	0.000 (0.001)	0.002 (0.004)	-0.009 (0.0040)	0.000 (0.0002)
Year 1984-1988	--	--	--	--	--
Year 1989-1992	0.021 (0.085)	0.018 (0.011)	0.044 (0.031)	-0.026 (0.030)	-0.052 (0.017)
Year 1993-1996	0.121 (0.135)	0.034 (0.017)	-0.047 (0.034)	-0.019 (0.036)	-0.041 (0.021)
Year 1997-2003	0.066 (0.155)	0.021 (0.017)	0.037 (0.010)	-0.044 (0.044)	-0.059 (0.023)
No. of Person-Years	3,528				
Pseudo R^2	0.168				

Table 4: Multinomial Logit for Living Arrangements with Lagged Values, Marginal Effects

| Variables | Alone
Coeff (std error) | Nursing Home
Coeff (std error) | With children | | Other
Coeff (std error) |
			Left Home Coeff (std error)	Never Left Coeff (std error)	
Log income at age 58	0.015 (0.054)	-0.003 (0.003)	-0.001 (0.012)	-0.033 (0.012)	0.007 (0.008)
Black	-0.208 (0.118)	-0.027 (0.011)	0.093 (0.034)	-0.020 (0.041)	0.035 (0.022)
Age	-0.007 (0.019)	0.004 (0.001)	-0.003 (0.005)	0.000 (0.006)	-0.001 (0.003)
Schooling:					
< High School	--	--	--	--	--
HS degree	0.003 (0.116)	0.000 (0.012)	-0.021 (0.034)	-0.007 (0.046)	0.019 (0.023)
Some college	0.026 (0.171)	0.006 (0.013)	0.007 (0.047)	-0.037 (0.064)	-0.012 (0.027)
Health fair /poor	-0.035 (0.085)	0.039 (0.011)	-0.022 (0.022)	0.000 (0.027)	-0.022 (0.014)
Num children	-0.024 (0.031)	-0.002 (0.002)	0.018 (0.007)	0.002 (0.007)	-0.005 (0.005)
Frac daughters	0.022 (0.195)	0.012 (0.016)	-0.066 (0.050)	-0.068 (0.070)	0.055 (0.033)
Log dynastic assets age 58	0.012 (0.030)	-0.005 (0.003)	0.005 (0.007)	0.011 (0.008)	-0.001 (0.004)
Wealth 58 missing	-0.002 (0.303)	-0.034 (0.036)	0.034 (0.076)	0.105 (0.089)	-0.008 (0.042)
Log median kids inc at age 58	-0.021 (0.023)	0.005 (0.003)	0.001 (0.006)	-0.005 (0.006)	-0.004 (0.003)
Single daughter at age 58	-0.074 (0.134)	-0.008 (0.009)	0.027 (0.032)	0.076 (0.039)	-0.008 (0.021)
Num grandkids at age 58	0.004 (0.022)	-0.002 (0.002)	-0.004 (0.005)	-0.013 (0.007)	0.010 (0.004)
Num grandkids under 5 at 58	0.004 (0.050)	0.001 (0.004)	-0.004 (0.011)	0.006 (0.014)	-0.002 (0.007)
Has a child not observed	0.106 (0.148)	0.007 (0.012)	-0.052 (0.036)	0.029 (0.043)	-0.014 (0.023)
Has a disabled child	-0.140 (0.112)	0.014 (0.014)	0.050 (0.032)	0.026 (0.037)	-0.022 (0.021)
Age oldest child	0.002 (0.014)	-0.001 (0.001)	0.004 (0.004)	-0.007 (0.004)	-0.001 (0.002)
Year 1984-1988	--	--	--	--	--
Year 1989-1992	0.010 (0.097)	0.006 (0.008)	0.046 (0.027)	-0.010 (0.037)	-0.055 (0.022)
	0.081 (0.155)	0.019 (0.014)	-0.023 (0.033)	-0.012 (0.048)	-0.041 (0.029)
	0.048 (0.209)	0.005 (0.016)	0.029 (0.050)	0.000 (0.065)	-0.055 (0.034)
Number of Person-Years	3,586				
Pseudo R^2	0.137				

Table 5a: Two year transition matrix

Age *t*	Age *t*+2				
	Alone	With Child	With Others	Nursing Home	Total
Transition frequencies					
Alone	1,129	81	33	33	1,276
With child	74	524	22	7	627
With others	46	23	102	0	171
Nursing home	7	0	0	22	29
Total	1,256	628	157	62	2,103
Transition probabilities (weighted)					
Alone	0.90	0.05	0.02	0.03	1.00
With child	0.14	0.82	0.02	0.01	1.00
With others	0.29	0.15	0.56	0.00	1.00
Nursing home	0.26	0.00	0.00	0.74	1.00
Total	0.69	0.22	0.05	0.04	1.00

Sample is 716 mothers age 65 or old contributing a total of 2103 two year transition periods

Table 5b: Two Year Transition Probabilities By Race

Age _t_	Alone	With Child	With Others	Nursing Home	Total
			Age _t_+2		
White (n=1311)					
Alone	0.91	0.05	0.02	0.03	1.00
With child	0.16	0.81	0.02	0.02	1.00
With others	0.31	0.13	0.57	0.00	1.00
Nursing home	0.26	0.00	0.00	0.74	1.00
Total	0.73	0.19	0.04	0.04	1.00
Black (n=792)					
Alone	0.82	0.12	0.06	0.00	1.00
With child	0.11	0.85	0.04	0.00	1.00
With others	0.24	0.21	0.55	0.00	1.00
Nursing home	0.27	0.00	0.00	0.73	1.00
Total	0.45	0.46	0.10	0.00	1.00

Sample is 716 mothers age 65 or old contributing a total of 2103 two year transition periods (n=number of two year transition periods)

Table 5c: Two Year Transition Probabilities By Age

Age *t*	Alone	With Child	With Others	Nursing Home	Total
			Age *t+2*		
Ages 67-71 (n=748)					
Alone	0.89	0.08	0.03	0.01	1.00
With child	0.20	0.76	0.03	0.01	1.00
With others	0.36	0.08	0.56	0.00	1.00
Nursing home	0.38	0.00	0.00	0.63	1.00
Total	0.67	0.26	0.06	0.01	1.00
Ages 72-76 (n=660)					
Alone	0.93	0.03	0.02	0.01	1.00
With child	0.15	0.81	0.02	0.01	1.00
With others	0.32	0.17	0.51	0.00	1.00
Nursing home	0.30	0.00	0.00	0.70	1.00
Total	0.72	0.20	0.05	0.02	1.00
Ages 77-81 (n=440)					
Alone	0.91	0.04	0.01	0.03	1.00
With child	0.07	0.90	0.03	0.00	1.00
With others	0.16	0.21	0.63	0.00	1.00
Nursing home	0.22	0.00	0.00	0.78	1.00
Total	0.73	0.18	0.05	0.05	1.00
Ages 82-86 (n=183)					
Alone	0.84	0.05	0.01	0.09	1.00
With child	0.12	0.88	0.00	0.00	1.00
With others	0.30	0.00	0.70	0.00	1.00
Nursing home	0.30	0.00	0.00	0.70	1.00
Total	0.65	0.23	0.03	0.10	1.00

Sample is 716 mothers age 65 or old contributing a total of 2103 two year transition periods *(n* = number of two year transition periods)

Table 6: Total Number of Transitions in Living Arrangements, Conditional on at Least One

Number of transitions	Number of observations	Weighted fraction of sample
1	142	0.65
2	45	0.22
3	17	0.07
4	7	0.03
5	3	0.02
Total	214	1.00

Sample is the 214 unmarried women who we observe to transit from one type of living arrangement to another during our sample period.

Appendix Table A1: Multinomial Logit for Living Arrangement Coefficient Estimates

Variables	Nursing Home Coeff (std error)	With children Left Home Coeff (std error)	With children Never Left Coeff (std error)	Other Coeff (std error)
Log income	-0.25 (0.067)	-0.19 (0.050)	-0.14 (0.078)	0.05 (0.125)
Black	0.08 (0.443)	0.53 (0.240)	0.79 (0.399)	1.07 (0.331)
Age	0.18 (0.035)	0.05 (0.028)	0.06 (0.041)	0.01 (0.036)
Schooling:				
< High School	--	--	--	--
HS degree	-0.16 (0.576)	0.08 (0.250)	-0.38 (0.408)	0.11 (0.386)
Some college	0.004 (0.510)	-0.06 (0.350)	-0.84 (0.595)	0.05 (0.453)
Health fair or poor	1.91 (0.340)	0.07 (0.170)	0.07 (0.259)	0.10 (0.237)
Num children	-0.04 (0.176)	0.13 (0.067)	0.28 (0.093)	0.04 (0.098)
Frac daughters	-0.22 (0.712)	-0.88 (0.381)	-0.59 (0.564)	0.19 (0.557)
Log avg dynastic assets	0.28 (0.164)	0.04 (0.072)	0.46 (0.119)	0.09 (0.090)
Wealth zero or negative	5.28 (1.417)	1.05 (0.804)	5.53 (1.417)	0.38 (1.069)
Log median kids income	0.03 (0.232)	-0.44 (0.116)	-0.45 (0.118)	-0.29 (0.125)
Single daughter	-0.64 (0.508)	1.14 (0.253)	1.07 (0.339)	0.33 (0.319)
Num grandkids	-0.01 (0.061)	-0.05 (0.033)	-0.13 (0.053)	0.07 (0.046)
Num grandkids under 5	0.02 (0.325)	0.14 (0.096)	-0.02 (0.158)	-0.21 (0.126)
Has child not observed	-0.65 (0.635)	-0.76 (0.301)	-0.44 (0.422)	-0.40 (0.412)
Has a disabled child	0.75 (0.643)	0.28 (0.280)	0.40 (0.347)	0.29 (0.396)
Age oldest child	-0.01 (0.036)	0.01 (0.025)	-0.09 (0.036)	-0.003 (0.042)
Year dummy 1984-1988	--	--	--	--
Year dummy 1989-1992	1.30 (0.835)	0.14 (0.198)	-0.24 (0.203)	-0.68 (0.267)
Year dummy 1993-1996	1.12 (0.882)	-0.64 (0.279)	-0.73 (0.316)	-0.95 (0.334)
Year dummy 1997-2003	0.74 (0.882)	-0.12 (0.332)	-0.40 (0.413)	-1.07 (0.411)
Number of Person-Years	3528			
Pseudo R^2	0.168			

Appendix Table A2: Multinomial Logit for Living Arrangements with Lagged Values Coefficient Estimates

	Nursing Home	With children Left Home	Never Left	Other
Variables	Coeff (std error)	Coeff (std error)	Coeff (std error)	Coeff (std error)
Log income at age 58	-0.22 (0.130)	-0.02 (0.113)	-0.33 (0.125)	0.06 (0.147)
Black	-0.29 (0.569)	1.12 (0.273)	0.80 (0.379)	1.23 (0.344)
Age	0.23 (0.045)	0.01 (0.042)	0.03 (0.056)	0.02 (0.047)
Schooling:				
< High School	--	--	--	--
HS degree	-0.01 (0.593)	-0.10 (0.265)	-0.07 (0.407)	0.23 (0.342)
Some college	0.20 (0.572)	0.00 (0.371)	-0.37 (0.544)	-0.17 (0.479)
Health fair /poor	1.97 (0.371)	0.01 (0.182)	0.16 (0.264)	-0.08 (0.231)
Num children	0.03 (0.138)	0.16 (0.066)	0.13 (0.074)	0.03 (0.087)
Frac daughters	0.49 (0.790)	-0.24 (0.421)	-0.56 (0.648)	0.82 (0.499)
Log dynastic assets at age 58	-0.23 (0.155)	0.00 (0.063)	0.07 (0.064)	-0.06 (0.064)
Wealth zero or negative	-1.62 (1.640)	0.02 (0.692)	0.80 (0.765)	-0.33 (0.770)
Log median kids inc at age 58	0.27 (0.115)	0.03 (0.049)	-0.01 (0.055)	-0.01 (0.054)
Single daughter at age 58	-0.14 (0.434)	0.22 (0.282)	0.86 (0.354)	0.00 (0.344)
Num grandkids at age 58	-0.13 (0.113)	-0.01 (0.043)	-0.11 (0.069)	0.14 (0.067)
Num grandkids under 5 at 58	0.03 (0.208)	-0.045 (0.099)	0.019 (0.137)	-0.051 (0.134)
Has a child not observed	-0.28 (0.567)	-0.678 (0.312)	-0.348 (0.417)	-0.699 (0.386)
Has a disabled child	1.25 (0.619)	0.626 (0.273)	0.811 (0.343)	0.216 (0.363)
Age oldest child	-0.04 (0.042)	-0.025 (0.029)	-0.053 (0.035)	-0.001 (0.039)
Year dummy 1984-1988	--	--	--	--
Year dummy 1989-1992	0.477 (0.672)	0.226 (0.217)	-0.054 (0.260)	-0.66 (0.322)
Year dummy 1993-1996	0.581 (0.697)	-0.338 (0.319)	-0.426 (0.427)	-0.73 (0.417)
Year dummy 1997-2003	0.129 (0.833)	-0.012 (0.435)	-0.195 (0.620)	-0.85 (0.543)
Number of Person-Years	3586			
Pseudo R^2	0.137			