SOCIAL SECURITY, ECONOMIC GROWTH, AND THE RISE IN INDEPENDENCE OF ELDERLY WIDOWS IN THE 20TH CENTURY

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ABSTRACT

The share of elderly widows living alone rose from 18 percent in 1940 to 62 percent in 1990, while the share living with adult children declined from 59 percent to 20 percent. This study analyzes the causes of this change and finds that income growth, in particular increased Social Security benefits, was the single most important factor causing the change in living arrangements, accounting for nearly two-thirds of the rise in the share of elderly widows living alone. Changes in benefits from the mean-tested OAA/SSI programs had a lesser impact on the decision to live alone but were a significant factor in explaining changes in the living arrangements of the poorest widows. Furthermore, contrary to recent work, we find no evidence that the effect of income on living arrangements became stronger over the period; income had a substantial positive effect on the propensity to live alone as early as the 1940s and 1950s. Finally, the substantial changes observed in the composition of the population with respect to age, race, immigrant status, schooling, and completed fertility explain a relatively small share of the changes in living arrangements.

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1   Introduction

There has been a remarkable change in the living arrangements of the elderly during the 20th century. At the turn of the century just 15 percent of widows over age 65 lived alone, but by 1990 this fraction had risen to 62 percent. The increase in the likelihood of living alone has occurred simultaneously with a decline in the share of elderly widows living with adult children, from 71 to 20 percent. As the population ages and life expectancy increases, there may be increased demands by the elderly on their adult children, the private housing market, and on resident institutions. In preparing for these future demands it is necessary to understand the causes of this historic shift to independent living. Only by knowing what factors were responsible for this change in observed behavior can we make reasonable forecasts about future trends.

Several hypotheses exist to explain the long-run changes in living arrangements. One hypothesis is that declines in fertility reduced the availability of family members with whom widows may live, which in turn increased the share of widows living alone (Treas, 1977). In fact, within the sample of elderly widows that we analyze below, the mean number of children ever born decreased by 30 percent, falling from 4.4 in 1940 to 3.1 in 1990.

At the same time, there have been substantial improvements in health care, health status, and life expectancy. Among women, period life expectancy at age 65 increased by 40 percent, from 13.4 years to 18.8 years. Elderly with fewer health problems are better able to live on their own (Worobey and Angel, 1990), so these improvements may have contributed to the observed changes in living arrangements. Similarly, the improved survival rates of spouses and children have increased the availability of kin, and this trend would decrease the chances of living alone (Crimmins, 1986).

If the elderly do not live alone or in an institution, they most often live with children. Historically daughters have provided most of the familial care to elderly parents. But between 1940 and 1990 women entered the labor force at record rates, perhaps making it more difficult for daughters to care for their elderly parents, which in turn may have caused some elderly to remain on their own or, perhaps, enter an institution (Treas, 1977). Alternatively, it has been claimed that there has been a rise in the desire for independence and privacy, which has caused, at least in part, the increase in the propensity to live alone (Ruggles and Goeken, 1992).

Finally, the large change in the propensity to live alone has occurred along side a substantial

1

expansion of the Social Security program, changes in income transfer programs targeting poor elderly, and significant economic growth, suggesting that improved economic status of the elderly may have allowed widows the option of living independently (Beresford and Rivlin, 1966; Bishop, 1986; Carliner, 1975; Holden, 1988; King, 1988; Michael et al., 1980; Mutchler and Burr, 1991; Pampel, 1983; Ruggles and Goeken, 1992). In particular, Social Security and public transfers to the elderly can be seen as "crowding out" the family by reducing intergenerational living arrangements.[1]

One goal of this study is to determine which single factor or combination of factors is primarily responsible for the observed changes in living arrangements. We improve on past studies that have attempted to address this question by examining the evidence over a fifty year period using each of the last six decennial censuses, incorporating a direct measure of Social Security income of the elderly over the entire period, simultaneously investigating each of the competing hypotheses, and examining the choice of living in an institution, living with others, as well as living alone or with adult children.

This study is unique in that it investigates the extent to which the relationship between income and living arrangements has changed between 1940 and 1990 using a direct measure of income. It has been claimed that the effect of income on the propensity to live alone was negative during the first half of the century and became positive beginning around 1960 (Ruggles, 1996; Ruggles and Goeken, 1992). That is, until about 1960 the elderly preferred to live with their children, so older persons with high incomes used to be more likely to live with their children than were the elderly with low incomes. However, this study used reported occupation in the census as the primary measure of economic status, and this variable is missing for about one-half of the elderly. It is therefore not clear whether the results are generalizable to the entire population. Kramarow (1995) examined the effect of income on living arrangements by using average annual earnings of workers in the state in which the elderly individual lived. We use more direct measures of the income available to an elderly widow to examine this phenomenon. Specifically we examine the effects of income from the Social Security program and potential welfare benefits on living arrangements. Currently Social Security is the most important source of income for the majority

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[1]Estimates of crowding out of familial cash transfers by Aid to Families with Dependent Children, Unemployment Insurance, and other programs have been derived (Cox and Jakubson, 1995; Lampman and Smeeding, 1983; Schoeni, 1996; Schoeni, 1994), as have been the effects of Aid to Families with Dependent Children on the living arrangements of single mothers (Ellwood and Bane, 1985; Hilton and Shelton, 1996; Hutchens, Jakubson, and Schwartz, 1989; Moffitt, Reville, and Winkler, forthcoming).

2

of widows; for two-thirds of all widows in 1990, benefits from Social Security accounted for at least one-half of their total income from all sources. (Estimate based on authors' tabulations from the 1990 census.) For widows not receiving Social Security income, or who have sufficiently low benefits, the Supplemental Security Income program (SSI) provides a guaranteed source of income. As we discuss below, assistance of this sort was particularly important in the early years of the Social Security program when Social Security coverage was far from universal.

The inclusion of benefits from the SSI program and its precursor the Old-Age Assistance program (OAA) represent an important additional contribution of this study. The effects on living arrangements of poverty programs targeted towards single mothers through the Aid to Families with Dependent Children program has been examined relatively extensively (Ellwood and Bane, 1985; Hilton and Shelton, 1996; Hutchens, Jakubson, and Schwartz, 1989; Moffitt, Reville, and Winkler, forthcoming), while similar aspects of the OAA/SSI have been ignored. The one exception to this omission is a recent study by Costa (1997b), who examines the effect of OAA benefits on living arrangements in 1940 and 1950. We examine the effects of OAA/SSI throughout the entire period 1940-1990, and simultaneously examine Social Security and OAA/SSI.

The remainder of the paper is organized as follows: In the next section we describe the data and sample. Section 3 describes the long-term trends in living arrangements and its correlates, while the econometric model is described in Section 4. The parameter estimates are discussed in Section 5 along with a variety of counterfactual simulations that demonstrate the role of the various factors in explaining the long-run changes in living arrangements. The final section summarizes and interprets the findings.

2 Data and Sample

2.1 The Decennial Censuses

The primary data used in the analyses are drawn from the 1940, 1950, 1960, 1970, 1980, and 1990 censuses as compiled in the Integrated Public Use Microdata Series (Ruggles and Sobek, 1995). This source provides a large sample of elderly individuals and a consistent set of explanatory variables over the time period of interest. We refer briefly to statistics calculated from the 1880, 1900, 1910, and 1920 censuses to document changes in living arrangements prior to the enactment of the Social Security Act in 1935, but all of our multivariate analyses are restricted to the 1940-1990 censuses,

the period for which measures of (Social Security) income of the elderly are available.

The information utilized from the census micro data include age, race/ethnicity, education, number of children ever born, residence in a metropolitan area, state of residence, and whether the person was born outside of the U.S. To these data we add age–specific estimates of female (period) life expectancy for each year, drawn from the U.S. Social Security Administration (1992). Personal income is available for the census years 1950-1990. However, the difficulty with this measure is that income itself is likely to depend on the choice of living arrangements, either directly through institutional provisions, or indirectly through chosen behaviors. For example, by law, benefits from SSI are reduced by one-third if the recipient lives in the household of another. Thus ceteris paribus, SSI recipients who co-reside will have lower incomes than those who do not. Similarly, if an elderly individual has no options for co- residence and must get by on her own, she may work in order to increase her income, while if she were sharing a residence with a child she would not do so.

To eliminate the endogeneity problem we use two measures of income. First, we use the average Social Security income of widows in each year, calculated by race and single years of age, as reported in various issues of the Social Security Bulletin. Our measure of average benefits is calculated over all persons including those with zero Social Security income. (See the appendix for further details of the calculation of average Social Security benefits and the data sources.) Second, we merge to the micro data the maximum OAA/SSI benefit available in the state in which the elderly person resides in the given year. This measure varies by state and year. (The OAA/SSI data are discussed further in the appendix.)

Using the IPUMS, four living arrangements can be consistently identified across each census year: living alone, living with an adult child (i.e., a child 20 or older), living in an institution, and all other living arrangements. A widow is defined as living in an institution (or group quarters) if she lives with five or more individuals who are unrelated to the household head, which is the strategy suggested by Ruggles and Sobek in order to make the definitions consistent over all census years.

2.2 Sample Selection

Our analysis examines widows age 65 and older, who constitute 56 percent and 48 percent of all women of that age in 1940 and 1990, respectively. In addition, we select on widows who have given

birth to at least one child (which is the best proxy available for whether they currently have any living children) because one of the living arrangement options that we consider is living with a child; we discuss the implication of this sample selection when we describe the results in Section 5.[2] By focusing solely on widows we abstract from the decision to marry. The women in this sample all chose to marry and became widowed through an exogenous event.[3]

3   Long-Term Trends and Correlates

The fraction of the population in each of the four categories of living arrangements in each census year is shown in table 1.[4] The change in the fraction living alone is startling. Between 1880 and 1990 the fraction living alone increased by 52 percentage points or over 300 percent. At the same time, institutionalization increased by 6.3 percentage points. Corresponding to increases in these modes of living arrangements, there was a substantial decrease in the proportion of elderly women living with their adult children, from 69 percent to 20 percent.

Table 2 shows the average, by year, of the variables that represent the primary social and demographic factors that are thought to explain the change in living arrangements. The (weighted) averages are calculated for widows age 65 and over with at least one child ever born.

A (crude) proxy for health status that is available over the entire 1940-1990 period is the remaining number of years a woman, of a given age, can expect to live, i.e., age-specific period life expectancy.[5] Female life expectancy at age 65 increased from 13.4 in 1940 to 18.8 in 1990. Figure 1 plots the proportion of widows living alone by year for 70 and 80 year olds, along with average life expectancy at the corresponding age. The change in life expectancy over time is roughly consistent

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[2]The number of surviving children is not available in the census years that are analyzed; therefore, children ever born is used as a proxy. Thus it is possible that some of the women in our sample are childless at the time the data are collected. Also note that two variables that we use in our analysis are not available for all women in every year: the number of children ever born (in 1940 and 1950) and schooling (in 1950) were asked only of "sample line persons." Therefore, we restrict the sample to these "sample line persons" in 1940 and 1950. Sampling weights are used in the analyses to control for the selection process. See Ruggles and Sobek (1995) for details of the sample and the weights.

[3]Certainly the decision to remarry is not exogenous, but the probability of remarriage among elderly women is so small as to make it most unlikely to affect the results. Over the 11 year period covered by the Retirement History Survey (1969-1979) only 4 percent of the widows remarried (authors' calculation). By the end of the RHS sample period these women were ages 68-73 and thus likely had slightly higher remarriage probabilities than the population of women we examined, which includes all women age 65 and over.

[4]Table 1 does not exclude widows who never gave birth to a child, but all estimates are very similar when these widows are excluded, changing no more than a few percentage points in all instances.

[5]We know of no consistent time series measure of morbidity although such a measure would be preferable to life expectancy as a proxy for ability to live independently.

with the change in residency patterns. However, in a cross section, the variation by age in the share living alone does not closely parallel the variation in life expectancy. Figure 2 shows the patterns for the year 1990. The variation in the share living alone across age follows an inverted U-shape, while life expectancy (as well as health status) declines monotonically with age.

The fall in the share of elderly living with children is consistent with the fall in completed family size. As shown in table 2, the number of children ever born (among our sample of women with at least one child) declined from 4.4 in 1940 to 3.1 in 1990. There has also been a large increase in the number of women with exactly one child (conditional on having at least one), with this fraction increasing from 14 percent of our sample to 21 percent between 1940 and 1990 (not shown). Although childless widows are excluded from the analytic sample, the fraction of childless widows has also increased over time from 12 percent to 16 percent, likely further affecting independent living.

Schooling may be considered a measure of lifetime wealth and, as a result, would be positively correlated with the ability to live alone if privacy were a normal good. Over the sample period the average schooling level of elderly widows increased substantially. The fraction of women with 8 or fewer years of schooling declined steadily from 81 percent to 33 percent while the proportion with at least a high school degree increased from 12 percent to 49 percent.

Differences in living arrangements among racial and ethnic groups have been documented (Angel and Hogan, 1992; Angel and Tienda 1982; Hernandez, 1989; Mutchler, 1990). There is also some evidence suggesting that immigrants may be more likely than natives to live in extended families (Boyd, 1991). As shown in table 2, the proportion of the population that is white has stayed fairly constant over time, declining only slightly in recent years, while the proportion of elderly widows that is foreign born has declined substantially.

Labor force participation of women (i.e., daughters) increased substantially during the fifty years, rising from 34.0 percent in 1942 to 74.9 percent in 1990 among women 25-44 years old. However, the majority of the rise in the propensity to live alone preceded the period in which daughters' labor force participation rose the most. Between 1940 and 1960 the share of widows living alone doubled, from 18.4 percent to 36.1 percent, while the share of daughters working increased by only 6 percentage points, from 34.0 percent to 39.9 percent. The largest between-census rise in daughter's labor force participation was 17.7 percentage points (47.9 versus 65.6

6

percent), which occurred in the 1970s. But during this same 10-year period the share of widows living alone increased by 8.7 percentage points; this was a significant change, but not as large as the change between 1950 and 1960 or 1960 and 1970. In addition, while labor force participation continued to rise significantly by 9.3 percent in the 1980s, living arrangements of widows changed very little.

Economic status of the elderly increased substantially over this time period, and the largest source of income among widows has been income from public programs, in particular, from the Social Security and OAA/SSI programs. The generosity of these programs has varied over time, and it is likely that the legislated changes in benefit schedules affected the choice of living arrangements. In our analyses we examine the effects of the two programs. Certainly other dimensions of economic status have also changed over time, but information on non-Social Security income and wealth is not available for our entire sample period, nor are we confident of the exogeneity of such measures. However, because of these omissions, our income measures are capture the effects of changes in economic status more generally, not just the effects of Social Security and OAA/SSI.

Social Security: The Social Security program was enacted in 1935 and expanded greatly in the subsequent decades. The expansions included both increases in the generosity of benefits as well as increases in the scope of coverage.[6] As described above and in the appendix, the measure used in the multivariate anályses is the average amount of widows' benefits received, calculated by single years of age and by race, across the entire population of widows, including widows who were not receiving assistance. In table 3 we summarize the distribution of Social Security benefits. We report both the share of women who received Social Security and the average widow's benefit received among those widows receiving a positive amount. In 1940 the average monthly benefit received by widows was $186 (in 1990 dollars). By 1990 this figure had increased to $559. At the same time, the fraction of the elderly female population that was receiving benefits increased from 1.2 percent to 94.9 percent.

As depicted in figure 3, the rise in average benefits over time closely resembles the rise in the propensity of widows to live alone. Moreover, within a given year the differences in the propensity

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[6]The Social Security Bulletin Annual Statistical Supplement contains a summary of the changes in the Social Security law since its inception.

to live alone among widows of different ages is closely related to the differences in the average amount of Social Security benefits received by these women (figure 4). In 1960, the propensity to live alone declined monotonically with age, as did the average Social Security benefit. By 1990 the variation in the propensity to live alone across ages had changed substantially, following an inverted U-shape instead of declining monotonically. Similarly, the average amount of benefits in 1990 followed an inverted U-shape with age.

One might argue that an increase in Social Security benefits need not correspond to an increase in the financial well-being of older Americans if Social Security replaces, or crowds-out private savings (Feldstein 1974; Feldstein, 1982) and/or labor income (Burkhauser and Turner 1978; Burkhauser and Turner 1982). We very much doubt that crowding out is an important phenomenon for our sample. With respect to the effect of Social Security on private savings, we note that the Social Security program itself, as well as the large increases in benefits, were largely unanticipated. One would not have expected individuals to have saved less prior to 1935 in anticipation of the program, nor would savings behavior in the 1940s through the 1960 have anticipated the tremendous increase in benefits. As for crowding-out of labor force participation, the fraction of elderly widows with strong ties to the labor force has always been small and is unlikely to have changed much as a result of Social Security. In 1948 the participation rate of women age 65 and over was 8.9 percent, it increased to 9.3 percent by 1968 and fell to 7.7 percent in 1988 (U.S. Bureau of Labor Statistics, 1989).

OAA/SSI: A second important source of income available to the elderly comes from the OAA/SSI programs. Prior to the implementation of the SSI program in 1974, poor elderly could receive benefits from OAA, which was a particularly important source of income before the wide spread coverage of Social Security. In 1940 21.7 percent of the population 65 and older were receiving payments from the program. As Social Security grew, the fraction of the income of the elderly attributable to OAA began to shrink. In 1940 OAA benefits comprised 96.7 percent of total payments from the two programs. This percentage fell continuously to 72.7 percent in 1950, 21.4 percent in 1960, 9.2 percent in 1970, and then 3.6 percent in 1980 under the new ·title of SSI (Parsons, 1991).

Benefits from OAA were completely determined by the states with partial funding provided

8

from the federal government up to specified limits. Despite the clearly delineated limits in federal matching funds, there existed a substantial amount of variation in generosity across states. In 1960, for example, the maximum monthly benefit available ranged from $40 in Mississippi to $275 in Washington state. Federal limits on matching funds increased over time with changes in federal legislation. These changes resulted in corresponding changes in benefits on the state level, thus inducing variation within state over time in addition to the cross-state variation.

The state-run programs of OAA were replaced in 1974 by the SSI program. The SSI program consists of two parts: a federally guaranteed monthly income for all aged, blind, and disabled individuals, and an optional state supplemental benefit. In 1990 the federal guarantee for a single individual living in her own home was $386 per month, with a reduction of one-third if the individual lived in the household of another. Individuals with incomes below the guarantee level receive transfers from the federal government to increase their income to the guaranteed amount. The maximum possible benefit is therefore the amount an individual with no other income would receive.

In addition to this federal portion of the program, states have the option of increasing the guarantee to any amount they wish, resulting in substantial variation in benefit levels across states. In 1990 43 states (including the District of Columbia) supplemented the federal program, with maximum benefits ranging from $752 (or $366 above the Federal level) in Connecticut to $387.70 (just $1.70 over the Federal level) in Oregon. Moreover, the differences across states in potential monthly benefits are larger than would be expected given differences in the cost of living.[7]

Because the amount of the OAA/SSI transfer an individual receives depends on her other income (as well as the state maximum), the amount of the benefit actually paid measures not just the generosity of the federal and state programs, but also the underlying poverty of the recipient. Two states with identical guarantees may pay out very different amounts in benefits if the pre-transfer incomes of the eligible populations differ greatly. Furthermore, because the amounts paid depend in part on living arrangements, a measure of average benefits actually received across states would not be independent of the choice of whether to live alone. Therefore, the measure of OAA/SSI generosity that we use in our models is the maximum potential benefit that a widow could receive as a single individual living independently given her state of residence.[8] The mean

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[7]See McGarry (1996) for a more detailed discussion of the SSI program and the decision of individuals to claim benefits.

[8]This approach has been used in a number of studies to examine the effects of welfare programs on socio-economic

maximum OAA/SSI benefit available to our sample is reported in table 3 alongside the mean Social Security widows' benefit.

The link between Social Security and OAA/SSI and the choice of living arrangements is further strengthened by examining changes in living arrangements prior to 1935 (table 1). The Social Security Act of 1935 not only established the program of OASDI (what is typically referred to as Social Security) but also authorized the federal government to assist states in providing cash relief to the poor. Prior to 1930, the share of widows living alone was roughly stable, increasing only slightly from 9 percent in 1880 to 11 percent in 1920 (the latest year for which data are available prior to 1935). Although recent revisionist histories have suggested that elderly men and married women benefited from the economic changes that occurred in the late 1800s and early 1900s (Gratton, 1996; Haber and Gratton, 1994), the limited available evidence demonstrates that the economic status of widows may have remained very low even in the 1920s. In addition, there was very little public assistance for the elderly except through the Civil War Pension system (Quadagno, 1988). Individual states did not begin legislating state assistance programs for the poor elderly until the mid 1920s (although Alaska had a program as early as 1915). By 1930 there were 18 states with such programs and this figure increased further to 30 in 1935 (Myers, 1985). Thus the passage of the Social Security Act in 1935 corresponds to a profound change in the provision of cash assistance to the elderly and, as we have seen, to the beginning of the trend towards independent living among elderly widows.

In sum, the changes over time in income, health status (as proxied by life expectancy), fertility, female labor force participation, and schooling levels are all consistent with the trend towards independent living. We now turn to the multivariate analyses to disentangle the relative effects of the competing factors.

4   Econometric Model

We consider the choice of living arrangements in a utility maximizing framework where the utility of each possible living arrangement is compared, and privacy is a good. The individual chooses the living arrangement which yields the highest possible utility among the four options: alone, with at least one adult child, in an institution, all other arrangements.

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behavior. See Moffitt (1992) for a review.

We specify a reduced form multinomial logit model for the four choices of living arrangement:

$$prob(Y = j) = \frac{e^{X\beta_j}}{\sum_{k=1}^{4} e^{X\beta_k}}$$

We set $\beta_{alone} = 0$, so that estimated effects are measured relative to living alone. The matrix X includes the individual specific variables discussed earlier: age, race, immigrant status, schooling, number of children, and life expectancy, as well as our measures of Social Security and OAA/SSI. We hypothesize that the effects of Social Security and OAA/SSI will differ across the income distribution. Those elderly with relatively low lifetime incomes are also likely to have lower than average Social Security benefits, and a lower probability of coverage. The effect of Social Security ought therefore to be less strong for this group. Conversely, those with low lifetime income are more likely to be eligible for benefits from the OAA/SSI programs. The effect of these programs ought therefore to be greater. We use schooling level as a proxy for lifetime income and interact indicators of low schooling — 0-4 and 5-8 years of schooling — with our measures of Social Security and OAA/SSI.

Legislated maximum OAA/SSI benefits did not exist in some states in some years; therefore, OAA/SSI benefits (and all variables with which it is interacted) take the value of 0 in these cases, and an indicator for "no legislated maximum" is included in the models. (The appendix includes a list of states with maximum OAA payments in each census year.) The parameter estimates based on this specification were very similar to parameter estimates derived from models that excluded widows living in states without a legislated maximum.

In some states, participation in the OAA/SSI program may result in the state placing a lien on the recipient's property for the total amount of transfers received. Such lien laws may make participation in OAA/SSI less attractive, which would reduce participation in OAA/SSI and reduce income of the elderly, which in turn reduces the probability of independent living. We therefore include an indicator of whether lien laws existed, and as with the benefit level, interact this variable with schooling.

Recently there has been considerable debate about the receipt of welfare by immigrants and there is evidence to suggest that immigrants participate in welfare programs at a higher rate than do natives (Hu, forthcoming). Therefore, the effect of OAA/SSI is allowed to vary by immigrant status. Furthermore, immigrants may be less likely to be covered by the Social Security program

11

than natives because they have not lived in the U.S. long enough to have worked the minimum number of quarters to qualify for benefits. Therefore, an interaction of the immigrant indicator variable and Social Security benefits is also included.

We combine observations in each census year, resulting in a sample of 251,433 widows. Year- and state-effects are included in the model to control for unobservable changes over time (e.g., changes in daughter's labor force attachment) and differences in taste for coresidence across states. Sampling weights are used in the analyses to account for the fact that key information is only available for "sample line persons" in 1940 and 1950, as described in Section 2; however, very similar estimates are obtained when the analyses are conducted without the weights. Robust standard errors are reported, with clustering permitted at the state level within each year. Finally, variation over time in the effects of the covariates is explored in subsection 5.2.

One of the limitations of the multinomial logit model is the assumption of independence of irrelevant alternatives. As a result, the robustness of the estimates to alternative specifications was explored. In particular, following Hausman and McFadden (1984), and given our focus on the comparison of living alone versus with adult children, we re-estimated the models but i) excluded widows who were living in institutions, and then ii) excluded widows living with others. The parameter estimates representing the contrast between living alone and living with adult children from these two three-choice models were virtually identical to the estimates from the four-choice model.

5 Results

The parameter estimates from the multinomial logit estimation are contained in appendix table A.1. Each column contains the estimates for the given outcome (i.e., adult children, institution, others) relative to living alone. Because living with "others" contains a conglomeration of various types of living arrangements, we do not discuss the results here but include them for the sake of completeness.

Interpretation of the magnitudes of the estimates is not straightforward. We therefore discuss the results in the context of estimated derivatives and simulations. Before proceeding, however, we draw the readers' attention to one set of coefficient estimates, that of the estimated year effects. There has been much talk in the popular press about the "breakdown of the American family" and

the unwillingness of the younger generation to care for the elderly. If this were true, and if the year indicators are capturing a changing taste for coresidence, we would expect to see a significant decline over our period of observation. There is a significant fall in the probability of living with children from 1940-1970. After 1970, however, the decline reverses itself. Apparently the continued decline in coresidence observed in the raw data is due to more than changes in tastes.

In the following section we first discuss the marginal effects of the covariates for the comparison of living alone and living in an institution relative to living with adult children, and these results are presented in table 4. We then estimate the model using subsets of the data to test if the effects of the covariates differ over time (table 5). Finally, we conduct a series of counterfactual experiments to illustrate how the distribution of living arrangements might appear under certain changes in the variables of interest (table 6).

5.1 Estimated effects

Living With Children versus Alone

The derivatives in table 4 report the change in the probability of living in the given state, versus alone, for a change in the explanatory variables. These derivatives are evaluated at the means of the right hand side variables. Note that in all columns the interpretation of the magnitudes of the effects requires some care because there are numerous interaction terms.

Consistent with the notion that privacy is a desirable good, increases in Social Security benefits have a negative effect on the probability of living with children. For widows with more than 8 years of schooling, a $100 increase in monthly Social Security benefits decreases the probability of living with children by 6.97 percentage points. As expected, the effect is smaller (by 1.15 percentage points per $100) for those with just 0-4 years of schooling, who may have lower than average benefits or who may be less likely to have had an employment history that entitles them to benefits. For the same reason, the effect of Social Security is also smaller for immigrants (by 1.14 percentage points per $100).

The direct effect of OAA/SSI is not significantly different from zero, as one might expect since the majority of the population is ineligible for the program, but among those with low levels of schooling, larger benefits are associated with a significantly lower probability of living with children. For widows with 0-4 years of schooling, a $100 increase in monthly OAA/SSI benefits decreases

the probability of living with children by 0.34 percentage points (i.e., 0.0085-0.0051). Lien laws are expected to make welfare participation less attractive if the elderly are altruistic and wish to leave property to their heirs. Children may also be more willing to permit a parent to live with them if their inheritance is being reduced by the amount of public support provided to the parent. Thus, the effect of lien laws should be to increase the share living with children versus alone. This hypothesis is borne out in the data with the positive coefficient on the interaction of lien laws with 5-8 years of schooling. Taken together, widows with 5-8 years of schooling who live in states with lien laws are 2.29 percentage points more likely to live with children than alone. However, the interaction with 0-4 years of schooling is not significant or positive. It may be that the very poorest have no property to protect.

Additional children (conditional on having at least one child) increase the probability that a widow will live with an adult child, lending support to the argument that a decline in fertility has been partly responsible for the change in living arrangements. The estimates imply that each additional child increases the probability of living with a child by 2.98 percentage points.

As we mentioned earlier, we consider schooling a proxy for lifetime wealth. One would therefore expect more educated widows to be more likely to live alone than those with less schooling. We find that widows with 13 or more years of schooling are 5.27 percentage points less likely to live with children relative to widows with 12 years of schooling.

To estimate the difference in the probability of living with children by immigrant status one must include the interaction of the immigrant indicator variable with Social Security and with OAA/SSI. Doing so implies that immigrants are 7.20 percentage points more likely to live with children than are natives (evaluated at the means of all variables). Life expectancy, as our proxy for health, has no effect on living arrangements. But there is a strong age trend (shown in Table A.1) with older widows being significantly more likely to live with children than are younger widows. To a large degree, age is likely to be capturing the effects of health status.

Living in an Institution versus Alone

Factors that explain institutionalization have been less well investigated than those explaining coresidence with children. The patterns evident here suggest that greater Social Security benefits increase the probability of living in an institution, exception for immigrant women. OAA/SSI has

14

no effect on institutionalization.

Additional children provide widows with more options for living arrangements (column 1) but also increase the possibility that widows will receive help at home, which appears to allow widows to avoid institutionalization. The effect of additional children here is significantly different from zero but quite small, decreasing by 0.58 percentage points for each child.

Less educated widows are less likely to be institutionalized than are more educated widows. The effect, however, while largest for the least schooled, is not monotonic. Taking all interactions into account, immigrants are 1.38 percentage points less likely to be institutionalized than are natives. Life expectancy has a significant effect on the probability of living in an institution; each additional year of expected life decreases the probability of living in an institution by 1.37 percentage points.[9]

5.2 Changes Over Time

To test whether the relationship between the various factors and living arrangements changed over time, we re-estimated the multinomial logit model on subsets of the data. In order to continue to control for state-effects, we estimated models pooling data for two census years at a time, i.e., 1940-1950, 1950-1960, 1960-1970, 1970-1980, and 1980-1990. The marginal effects of the key covariates are reported in table 5 for the comparison of living with children versus living alone.

Throughout the period, greater income translated into a higher probability of widows living alone. Importantly, there is no evidence of an increase in the effects of income over this time period. In fact, the largest effect is for the earliest period, 1940-1950. The marginal effect among widows with between 5 and 8 years of schooling, which includes most widows, changed from -0.179 to -0.011 to -0.032 to -0.031 to -0.029 over this period. As a result, counter to Ruggles (1996) and Ruggles and Goeken (1992), we do not find that widows with higher income were more likely to live with children prior to 1960. Our evidence is consistent with earlier analyses of widows by Beresford and Rivlin (1966) for 1952 and 1960, and analyses of men by Costa (1997a) for 1910.

It should also be noted that the magnitude of the effect estimated by pooling all six years of data is somewhat higher than the estimate derived when pooling any two censuses (except the 1940

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[9]The availability and price of nursing home beds likely also plays a role in the probability of institutionalization. Because these supply factors are likely to be endogenous to the choice of living arrangements and because we do not have data on these variables, we assume that such differences are controlled for by state and year effects.

and 1950 censuses). In addition, the effects of OAA/SSI are not very stable over time. The only significant negative effects are for the period 1970-1980, notably the period capturing the change from OAA to SSI. Similarly, the effects of lien laws fluctuates across the time periods.

The effects of education are fairly consistent across years, especially the comparisons among widows with 12 or more years of schooling. In addition, the effect of additional children is very stable over time, with one additional child increasing the probability of living with an adult child by 2-3 percentage points. Except for 1980-1990, life expectancy has the expected negative effect on the probability of living with children; however, this effect is relatively small. An increase in life expectancy by 5.4 years, which is equal to the increase among 65 year old women between 1940 and 1990, would have led to at most (i.e., evaluated at the 1950-1960 coefficient estimate of -0.0070; the estimate for 1940-1950 is larger but not statistically significantly different from 0) a 3.8 percentage point decline in the share of widows living with adult children.

5.3 Simulations

To illustrate more clearly the effects of each factor, we conduct the following thought experiment based on the initial specification of the multinomial logit model whose estimates are reported in table A.1. We set the value of all regressors equal to their 1940 levels. We then change one variable at a time, setting it equal to its 1950, 1960, 1970, 1980 and 1990 values and calculate the predicted probability of living alone (and all other living arrangements) at each point. Table 6 reports these results. The top row reports the actual probability of each living arrangement in each year. The second row show the predicted probabilities calculated from the estimates in table A.1 and the mean values of the variables specific to that year; note that the predictions agree closely with the actual values.

Moving across the third row we set the mean value of Social Security benefits equal to the value appropriate for the year at the head of the column (1940, 1950, 1960 and so forth) but keep all other variables in the equation at their 1940 values. This experiment calculates the effect of changes in Social Security benefits on living arrangements holding all other variables constant. The simulated probabilities of living alone are quite close to the calculated probabilities at the head of each column. The change from 1940 to 1990 due just to changes in Social Security benefits (a change from 0.157 to 0.451) is equal to 62 percent of the total change (a change from 0.157 to

16

0.633).

The subsequent rows repeat the exercise for other variables. Changes in the number of children explain just 1.6 percentage points of the 47.6 percentage point increase in the share living alone. Recall that widows who have never given birth to a child were excluded from the sample. Given the rise in the share of widows with no children from 12 percent to 16 percent between 1940 and 1990, our estimate of the effects of fertility is too low. Some fraction of the 4 percentage point increase in childless women would have lived with children. Adding these widows back into the decomposition would imply an upper bound of an additional 4 percentage points (i.e., 16-12) of the decline in the share of widows living with a child could be explained by changes in fertility. Therefore, the total change explained by fertility could be no more than 5.6 percentage points, or about 12 percent of the decline in the share of widows living with children. In sum, other than fertility, social and demographic factors explain relatively little of the change in living arrangements among elderly widows between 1940 and 1990.[10]

We can use this same framework to forecast future living arrangements under assumptions about the rate of change of the regressors in our model. The most important predictor of living alone is income, as measured by Social Security in our analysis. While the increase in Social Security coverage experienced from 1940-1970 cannot be repeated, and it is unlikely that the increases in generosity of benefits seen in the 1970s will continue, we might expect to see an increase in Social Security benefits in the future as cohorts with almost universal coverage reach retirement age, and as the labor force attachment and real wages of women (in particular women whose husband's died at a relatively young age) increase. To approximate this increase we set average Social Security benefits for widows equal to the average for all persons receiving a worker's benefit in 1995, i.e., $719, instead of its 1990 value for widow's benefits of $529. The model implies that an increase in Social Security benefits of this magnitude, with all other covariates remaining at their 1990 mean values, will increase the share living alone from 0.633 (table 6) to 0.755, while the share living with children will decline from 0.223 to 0.133.

We also separately forecast the effects of the continued decline in fertility. In particular, we

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[10] It is unlikely that the entire increase of 4 percent in the number of childless came from women who were living with children. A more appropriate estimate would probably be closer to 40 percent (the average probability of coresidence with a child over all years) implying an additional 1.6 percentage point change for a total change of 3.2 percentage points.

17

simulate the living arrangements under the assumption that completed fertility among widows will fall from its current level of 3.1 to 2.1 children ever born, which is the fertility experienced by women who were 40-44 in 1995. In this scenario the share of widows living alone will increase slightly from 0.633 to 0.647, and the share living with children will fall from 0.222 to 0.201.

6   Summary and Interpretation of Findings

During the 50 years preceding the Social Security Act of 1935, and perhaps longer, the living arrangements of elderly widows were virtually unchanged; roughly 10 percent lived alone, 70 percent lived with adult children, and the remainder lived in institutions or with other individuals. Beginning around 1940, this long-standing tradition of intergenerational living arrangements began to change in fundamental ways. In particular, the share of widows living alone rose in the subsequent half-century from 18 percent to 62 percent, while the share living with adult children declined by the same magnitude.

The timing of this change coincides with the creation and expansion of Social Security. Our findings suggest that increases in Social Security coverage and benefits were the main forces driving the change in living arrangements through much of this century. And the relatively poor, and unchanging, economic position of widows prior to 1935 appears to be the primary reason why so few widows lived on their own prior to 1935. This result suggests that the crowding out of private family support through the Social Security program was substantial.

Our results shed light on the relative importance of several other explanations that have been offered in the literature. Socio-demographic factors, in particular declines in the number of children, played a role throughout this period, but this role was relatively small. Furthermore, we do not find evidence that preferences for independent living changed over this period; people have always preferred privacy, and when they had the income to act on their desire, they lived on their own. This result is consistent with recent findings for men in 1910 (Costa, 1997a) and older findings for women in 1952 and 1960 (Beresford and Rivlin, 1966).

A major gap in our knowledge of living arrangements of widows exists between 1920 and 1940. It would be helpful to know whether independent living began to increase in the 1920s and early 1930s, prior to the establishment of Social Security and the expansion of Old-Age Assistance. However, the depression is likely to confound any pattern during this period. Historical analyses are also limited

by the fact that information describing the set of people that widows may potentially live with, including the geographic proximity of children and relatives (Soldo, 1980), is not available. These data exist for contemporary analyses using surveys such as the Health and Retirement Survey, Assets and Health Dynamics Survey, and the National Survey of the Aged (Wolf and Soldo, 1988), but historical information is sparse or non-existent. But even with these limitations, the evidence is quite strong: throughout the 1900s widows have preferred to live independently, and when Social Security gave them the ability to act on that desire, they did.

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Data Appendix

Calculation of Average Social Security Benefits Individual level data on Social Security benefits is not available in the Census prior to 1970. We therefore use average benefits calculated by single years of age and race. Ideally we would like to use the average Social Security benefit received for all widows of a given age and race. For the majority of women these benefits are based on their status as widows of covered workers. For some women however, benefits are based on their own work histories. While the Social Security administration publishes data on average widows benefits (by age, race, and sex) and average workers' benefits (also by age, race and sex) we cannot identify workers benefits received by widows. We therefore use mean widows benefits as a proxy for mean benefits received by widows.

Fraction of Women Receiving Social Security Benefits: The average benefit received among recipients of benefits does not capture all aspects of the program. The fraction of women entitled to benefits also changes over time. We therefore deflate the average widows' benefit by including zero benefits for the fraction not eligible and calculating a weighted average (i.e. (mean benefit × fraction receiving benefits) + 0 × fraction receiving no benefits)). Here again, the data are less than perfect and we must make an assumption about coverage. It is not possible from administrative data to determine the number of widows receiving benefits because some widows receiving benefits from other than their widowed status, in particular from their own workers' benefit. In determining the average benefit received (above) we implicitly assumed that these benefits were similar in magnitude to average widows' benefits. Here, to calculate the fraction of widows receiving any benefit we assume that coverage is approximately constant over marital status. Specifically, we calculate the fraction of *women* (married, single, widowed or divorced), in the particular age category[11] (samples at older ages are too thin to permit disaggregation by race) who receive any benefit from the OASDI program and assume that rate applies to widows.

The denominator of the fraction (i.e., the number of women by age and year) is based on our

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[11]This fraction is calculated for single years of age except in the following instances when Social Security data were reported in broader age categories: 1940, 90+; 1950, 75-79, 80+; 1960, 80-84, 85-89, 90+; 1970, 90+; 1980, 90+; 1990, 90+.

counts from the IPUMS. The age categories for each year were chosen to match the categories listed in footnote 11. The numerator in each year (i.e., the age-specific number of women receiving any type of Social Security benefits, including workers' benefits, widows' benefits, disabled worker benefits, and spouses' benefits) was obtained from various Social Security publications.

States with Legislated Maximum OAA Payments: The states that had legislated maximum OAA benefits in each year are listed below.

1940: Alabama, Alaska, Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Iowa, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming.

1950: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Delaware, D.C., Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, Wisconsin, Wyoming.

1960: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Mexico, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming.

1970: Alabama, Alaska, Arkansas, California, Colorado, Delaware, Florida, Georgia, Indiana, Louisiana, Maine, Mississippi, Missouri, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah, West Virginia, Wyoming.

Table 1

Living Arrangements of Widows 65+: 1880-1990

Year	Alone	Adult Children	Institution	Others
1880	9.3	67.8	3.6	19.4
1900	14.6	70.6	3.4	11.4
1910	11.3	67.9	3.6	17.2
1920	10.9	67.2	3.9	18.0
1940	18.4	58.7	3.7	19.2
1950	24.2	50.3	6.0	19.5
1960	36.1	39.5	5.7	18.7
1970	50.3 .	28.4	8.3	13.0
1980	59.0	21.5	9.7	9.8
1990	61.7	19.5	9.9	9.0

Sample includes all widows regardless of whether they have a child.

Table 2

Means of Variables by Census Year

Year	Age	Number of children	Years of Schooling ≤ 8	Years of Schooling ≥ 12	White	Immigrant	Female Labor Force Participation: 25-44 year olds*
1940	73.8	4.4	0.81	0.12	0.91	0.24	34.0~
1950	74.1	4.2	0.74	0.16	0.91	0.23	36.4
1960	74.6	4.0	0.72	0.17	0.91	0.20	39.9
1970	75.6	3.5	0.61	0.23	0.92	0.17	47.9
1980	76.3	3.2	0.47	0.35	0.90	0.14	65.6
1990	76.9	3.1	0.33	0.49	0.88	0.10	74.9

~Estimate is for 1942 because 1940 was not available. *Estimates of female labor force participation for 1940-1970 are from *Historical Statistics of the United States Colonial Times to 1970*, and estimates for 1980 and 1990 are from *Statistical Abstract of the United States, 1996*.

Table 3

Social Security and OAA/SSI Coverage and Benefits: 1940-1990

Year	Social Security Fraction with Benefits	Social Security Average Benefits Among Recipients	OAA/SSI Average Maximum Benefits*
1940	1.0%	$186	$292
1950	15.9	193	298
1960	60.6	244	355
1970	81.1	339	431
1980	93.5	496	424
1990	94.9	559	464

*For calculation of OAA/SSI average maximum benefits, the sample is restricted to widows residing in the 17 states that had OAA/SSI maximums in each of the 6 census years. This represents 91,898 observations over the 1940-1990 period, which is 37% of the 251,433 observations in the full analytic sample.

Table 4
Derivatives of Selected Variables in Multinomial Logit Models

	Adult Children	Institution	Others
SS benefit	-0.0697	0.0002	-0.0114
	(16.10)	(6.49)	(10.21)
SS*Educ=0-4	0.0115	0.0042	0.0087
	(6.06)	(5.64)	(7.13)
SS*Educ=5-8	0.0040	0.0022	0.0041
	(3.63)	(4.05)	(5.06)
SS*Immigrant	0.0114	-0.0079	0.0013
	(2.64)	(5.13)	(0.94)
OAA/SSI maximum	0.0051	0.0001	0.0006
	(1.29)	(0.73)	(0.93)
OAA/SSI*Educ=0-4	-0.0085	0.0008	-0.0010
	(3.48)	(0.18)	(1.63)
OAA/SSI*Educ5-8	-0.0028	-0.0001	-0.0014
	(1.80)	(0.81)	(1.89)
OAA/SSI*Immigrant	0.0013	0.0002	0.0047
	(1.33)	(0.59)	(3.59)
OAA/SSI missing	0.0185	0.0119	0.0062
	(1.57)	(3.09)	(1.60)
Lien law	0.0019	-0.0030	0.0114
	(0.71)	(0.62)	(2.81)
Lien law* Educ=0-4	-0.0071	0.0099	-0.0039
	(0.40)	(1.93)	(0.53)
Lien law*Educ=5-8	0.0210	-0.0012	0.0016
	(2.81)	(0.39)	(1.33)
Lien law*Immig	0.0085	-0.0065	-0.0019
	(0.37)	(1.26)	(0.16)
Education: 0-4	0.0473	-0.0240	-0.0156
	(2.11)	(3.79)	(1.40)
Education: 5-8	0.0265	-0.0110	-0.0134
	(1.69)	(2.32)	(1.82)
Education: 9-11	-0.0051	-0.0028	-0.0014
	(1.80)	(2.11)	(1.10)
Education: 13 or more	-0.0527	0.0036	-0.0054
	(11.33)	(1.47)	(5.51)
Education missing	0.0910	0.0149	0.0098
	(9.83)	(6.85)	(3.44)
Number of children	0.0298	-0.0052	-0.0058
	(30.70)	(8.28)	(1.81)
Immigrant	0.0312	0.0136	-0.0306
	(1.46)	(2.31)	(1.92)
Life expectancy	0.0016	-0.0137	0.0058
	(0.97)	(19.79)	(3.87)

Models also include the covariates listed in Table A.1. Derivatives on the income variables and their interactions are multiplied by 100. Absolute value of t-statistic in parentheses.

Table 5
Derivatives of Selected Variables in Multinomial Logit Models
Various Year Combinations: Living With Adult Children Versus Living Alone

	'40-'90	'40-'50	'50-'60	'60-'70	'70-'80	'80-'90
SS benefit	-0.0697	-0.1605	-0.0390	-0.0388	-0.0416	-0.0485
	(16.10)	(2.22)	(3.84)	(5.92)	(8.47)	(9.60)
SS*Educ=0-4	0.0115	0.1636	0.0298	0.0269	0.0138	0.0328
	(6.06)	(1.70)	(2.83)	(4.85)	(2.31)	(4.99)
SS*Educ=5-8	0.0040	-0.0187	0.0281	0.0072	0.0103	0.0191
	(3.63)	(1.08)	(2.91)	(2.30)	(3.17)	(3.45)
SS*Immigrant	0.0114	0.0778	0.0300	0.0074	-0.0022	-0.0233
	(2.64)	(2.46)	(0.86)	(0.09)	(0.56)	(1.66)
OAA/SSI maximum	0.0051	0.0006	0.0045	-0.0020	-0.0052	0.0094
	(1.29)	(0.60)	(0.28)	(0.22)	(1.85)	(2.40)
OAA/SSI*Educ=0-4	-0.0085	0.0070	-0.0017	-0.0014	-0.0070	-0.0045
	(3.48)	(1.34)	(0.12)	(0.69)	(2.25)	(1.00)
OAA/SSI*Educ=5-8	-0.0028	0.0149	0.0033	-0.0007	-0.0039	-0.0058
	(1.80)	(1.13)	(1.61)	(0.26)	(1.89)	(1.81)
OAA/SSI*Immigrant	0.0013	-0.0030	-0.0062	0.0001	0.0047	0.0054
	(1.33)	(0.34)	(0.86)	(0.33)	(1.96)	(1.02)
OAA/SSI missing	0.0185	0. 0522	0.0019	0.0009	-0.0133	na
	(1.57)	(2.80)	(0.35)	(0.45)	(1.22)	
Lien law	0.0019	-0.0005	-0.0276	-0.0095	-0.0139	-0.0004
	(0.71)	(0.57)	(1.66)	(0.37)	(1.99)	(0.40)
Lien law* Educ=0-4	-0.0071	-0.0376	-0.0171	0.0165	0.0005	0.0023
	(0.40)	(1.56)	(0.38)	(1.20)	(0.22)	(0.01)
Lien law* Educ=5-8	0.0210	0.0127	0.0186	0.0262	0.0124	0.0186
	(2.81)	(0.82)	(2.09)	(2.89)	(1.29)	(1.84)
Lien law*Immig	0.0085	-0.0054	-0.0116	-0.0039	0.0014	0.021519
	(0.37)	(0.88)	(0.90)	(0.63)	(0.11)	(0.99)
Education: 0-4	0.0473	0.0127	0.0452	-0.0045	0.0226	-0.0895
	(2.11)	(0.51)	(0.04)	(0.75)	(1.04)	(2.52)
Education: 5-8	0.0265	0.0021	0. 0039	0.0195	0.0038	-0.0412
	(1.69)	(0.11)	(1.23)	(0.75)	(0.28)	(1.57)
Education: 9-11	-0.0051	-0.0004	0.0073	-0.0020	-0.0130	-0.0041
	(1.80)	(0.81)	(0.23)	(0.14)	(2.68)	(1.44)
Education: 13 or more	-0.0527	-0.0308	-0.0367	-0.0641	-0.0600	-0.0410
	(11.33)	(1.18)	(2.27)	(6.22)	(8.80)	(10.06)
Education missing	0.0910	na	na	na	0.0838	0.0688
	(9.83)				(9.50)	(8.11)
Number of children	0.0298	0.0222	0.0263	0.0300	0.0284	0.0278
	(30.70)	(9.19)	(12.24)	(23.05)	(29.35)	(33.47)
Life expectancy	0.0016	-0.0134	-0.0070	-0.0055	-0.0032	0.0016
	(0.97)	(1.45)	(2.40)	(3.95)	(3.94)	(0.68)

Models also include the covariates listed in Table A.1 except for the indicators for year that are not identified. Na=not applicable. Derivatives on the income variables and their interactions are multiplied by 100. Absolute value of t-statistic in parentheses.

Table 6

Simulated Living Arrangements Based on Multinomial Estimates in Table A.1

1940-1990

	Alone						Adult Children					
Value of Covariates	$t='40$	$t='50$	$t='60$	$t='70$	$t='80$	$t='90$	$t='40$	$t='50$	$t='60$	$t='70$	$t='80$	$t='90$
Actual probabilities	0.165	0.213	0.334	0.478	0.570	0.602	0.636	0.586	0.459	0.335	0.257	0.225
All covariates evaluated at t	0.158	0.208	0.332	0.488	0.595	0.633	0.653	0.604	0.470	0.339	0.257	0.223
Evaluated at 1940 except:												
SS_t	0.158	0.169	0.223	0.291	0.408	0.451	0.653	0.639	0.576	0.503	0.390	0.351
OAA/SSI_t	0.158	0.155	0.157	0.153	0.164	0.164	0.653	0.654	0.653	0.655	0.649	0.649
$(Number\ of\ children)_t$	0.158	0.160	0.163	0.169	0.173	0.174	0.653	0.647	0.640	0.626	0.615	0.614
$(Education)_t$	0.158	0.159	0.160	0.160	0.160	0.164	0.652	0.649	0.648	0.643	0.638	0.628
$(Life\ expectancy)_t$	0.158	0.159	0.159	0.159	0.159	0.159	0.653	0.651	0.650	0.649	0.646	0.646
$(Age)_t$	0.158	0.157	0.156	0.153	0.150	0.148	0.653	0.654	0.654	0.657	0.659	0.661
$(Race)_t$	0.158	0.158	0.158	0.158	0.156	0.155	0.653	0.653	0.653	0.654	0.655	0.655

	Institution						Others					
Value of Covariates	$t='40$	$t='50$	$t='60$	$t='70$	$t='80$	$t='90$	$t='40$	$t='50$	$t='60$	$t='70$	$t='80$	$t='90$
Actual probabilities	0.030	0.043	0.052	0.080	0.089	0.090	0.169	0.157	0.156	0.108	0.084	0.083
All covariates evaluated at t	0.024	0.033	0.040	0.061	0.063	0.060	0.165	0.155	0.158	0.111	0.085	0.084
Evaluated at 1940 except:												
SS_t	0.024	0.024	0.027	0.030	0.033	0.033	0.165	0.167	0.173	0.175	0.169	0.164
OAA/SSI_t	0.024	0.025	0.025	0.026	0.023	0.023	0.166	0.166	0.165	0.166	0.164	0.164
$(Number\ of\ children)_t$	0.024	0.024	0.025	0.027	0.028	0.028	0.165	0.168	0.172	0.178	0.184	0.184
$(Education)_t$	0.024	0.024	0.025	0.025	0.027	0.028	0.165	0.167	0.168	0.171	0.176	0.180
$(Life\ expectancy)_t$	0.024	0.018	0.017	0.015	0.013	0.013	0.165	0.173	0.174	0.177	0.181	0.182
$(Age)_t$	0.024	0.023	0.023	0.022	0.022	0.022	0.165	0.166	0.166	0.167	0.169	0.169
$(Race)_t$	0.024	0.024	0.024	0.024	0.023	0.023	0.165	0.165	0.165	0.165	0.166	0.167

Table A.1
Multinomial Logit Estimates and Descriptive Statistics: 1940-1990 (N=251,433)

		Adult Children		Institution		Others	
	Mean	Beta	Std Err	Beta	Std Err	Beta	Std Err
SS benefit	322.281	-0.3664	0.0228	-0.1696	0.0261	-0.2697	0.0264
SS*Educ=0-4	29.514	0.0842	0.0139	0.1299	0.0231	0.1257	0.0176
SS*Educ=5-8	112.566	0.0335	0.0092	0.0635	0.0157	0.0574	0.0113
SS*Immigrant	42.619	0.0421	0.0159	-0.1349	0.0263	0.0216	0.0231
OAA/SSI max	311.126	0.0266	0.0207	0.0144	0.0196	0.0172	0.0185
OAA/SSI*Educ=0-4	36.016	-0.0421	0.0121	-0.0042	0.0235	-0.0272	0.0167
OAA/SSI*Educ=5-8	113.741	-0.0169	0.0094	-0.0106	0.0131	-0.0206	0.0109
OAA/SSI*Immigrant	43.837	0.0166	0.0125	0.0160	0.0271	0.0530	0.0148
OAA/SSI missing	0.217	0.1298	0.0828	0.2982	0.0966	0.1305	0.0813
Lien law	0.388	0.0272	0.0384	-0.0343	0.0556	0.1186	0.0422
Lien law* Educ=0-4	0.060	-0.0220	0.0546	0.1805	0.0936	-0.0357	0.0675
Lien law* Educ=5-8	0.188	0.1043	0.0371	0.0235	0.0608	0.0596	0.0448
Lien law*Immig	0.089	0.0239	0.0649	-0.1191	0.0947	-0.0161	0.1025
Education: 0-4	0.139	0.1481	0.0703	-0.4259	0.1125	-0.1157	0.0824
Education 5-8	0.408	0.0781	0.0461	-0.1988	0.0858	-0.1091	0.0601
Education: 9-11	0.147	-0.0337	0.0188	-0.0706	0.0334	-0.0316	0.0289
Education: 13 or more	0.114	-0.2628	0.0232	-0.0498	0.0338	-0.1620	0.0294
Education missing	0.006	0.4998	0.0508	0.5223	0.0763	0.3305	0.0960
Number of children	3.539	0.1228	0.0040	-0.0560	0.0068	-0.0089	0.0049
Black	0.083	0.2027	0.0295	-0.2570	0.0653	0.8755	0.0398
Other race	0.015	0.8152	0.0695	0.0516	0.1054	0.9416	0.0749
Immigrant	0.160	0.1169	0.0802	0.2815	0.1220	-0.2300	0.1198
Life expectancy	10.616	-0.0088	0.0091	-0.2661	0.0134	0.0363	0.0094
Age: 70-74	0.244	0.0031	0.0336	-0.4586	0.0675	0.0627	0.0353
Age: 75-79	0.222	0.0275	0.0511	-0.6139	0.0987	0.0859	0.0613
Age: 80-84	0.165	0.2237	0.0720	-0.4839	0.1263	0.2645	0.0842
Age: 85-89	0.091	0.3926	0.0893	-0.2919	0.1507	0.4999	0.1054
Age: ≥ 90	0.045	0.7891	0.1026	0.2482	0.1642	0.9237	0.1267
Non-metro area	0.306	-0.3817	0.0220	-0.1769	0.0301	-0.2061	0.0218
Year: 1950	0.109	-0.2599	0.0546	0.3177	0.1160	-0.3784	0.0537
Year: 1960	0.138	-0.6287	0.0515	0.2107	0.0913	-0.6509	0.0665
Year: 1970	0.181	-0.8634	0.0704	0.4645	0.1017	-1.1604	0.0903
Year: 1980	0.222	-0.5865	0.1030	0.8549	0.1380	-1.1699	0.1352
Year: 1990	0.272	-0.5259	0.1292	0.8625	0.1558	-1.0848	0.1516
Constant		0.6836	0.1754	1.2089	0.2377	-0.2736	0.1650

*Parameters on the income measures, including interactions, are multiplied by 100. All models include state dummies. Omitted categories: Education, 12 years; Race, white; Age, 65-69; Year, 1940. Standard errors are adjusted for clustering within state and year.

Figure 1
Share of Widows Living Alone And
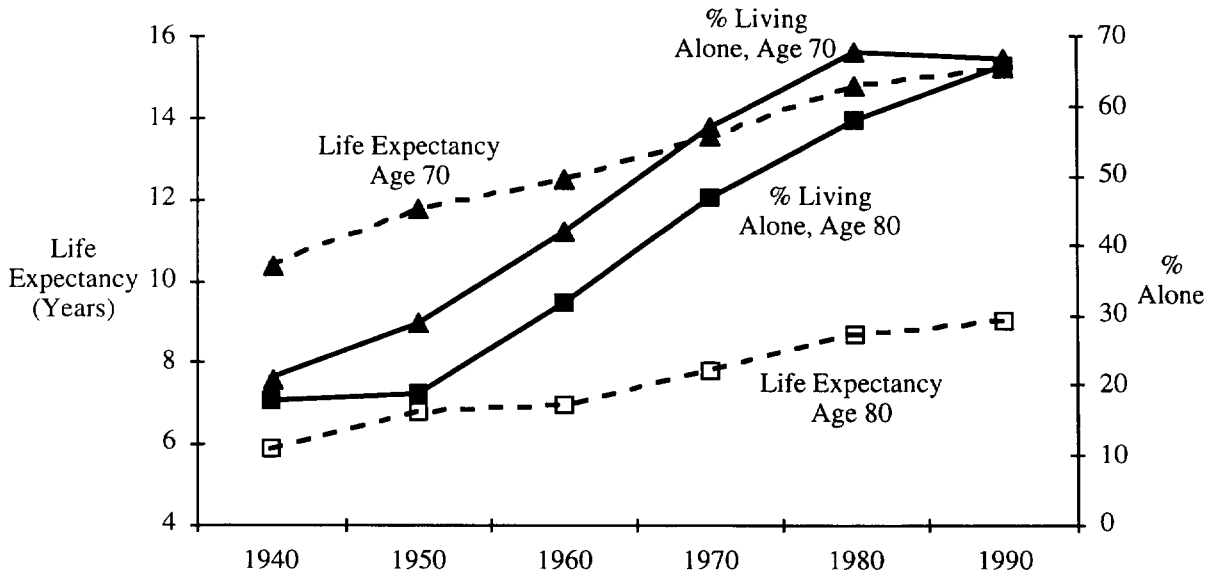### Female Period Life Expectancy
Ages 70 and 80, 1940-1990

Figure 2
Share of Elderly Widows Living Alone And
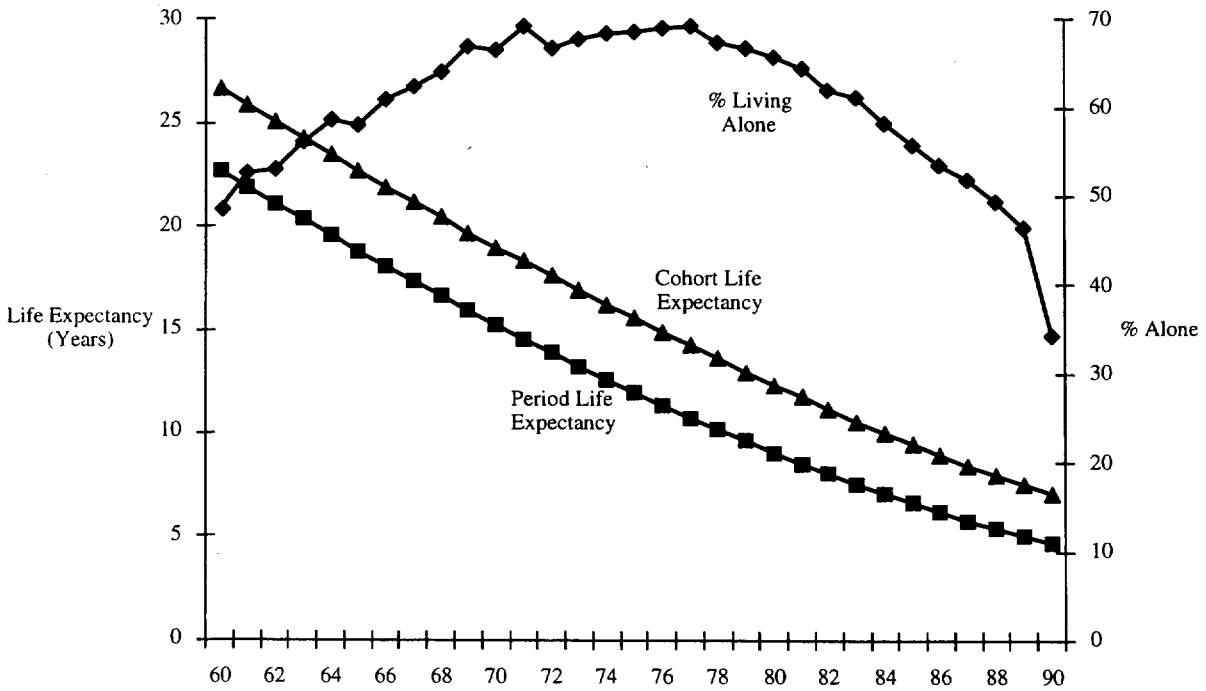### Female Life Expectancy by Age,
1990

Figure 3
Share of Elderly Widows Living Alone And
Average Social Security Widows' Benefits, 1940-1990

% Living Alone, 65 and older

Average Benefits

% Alone
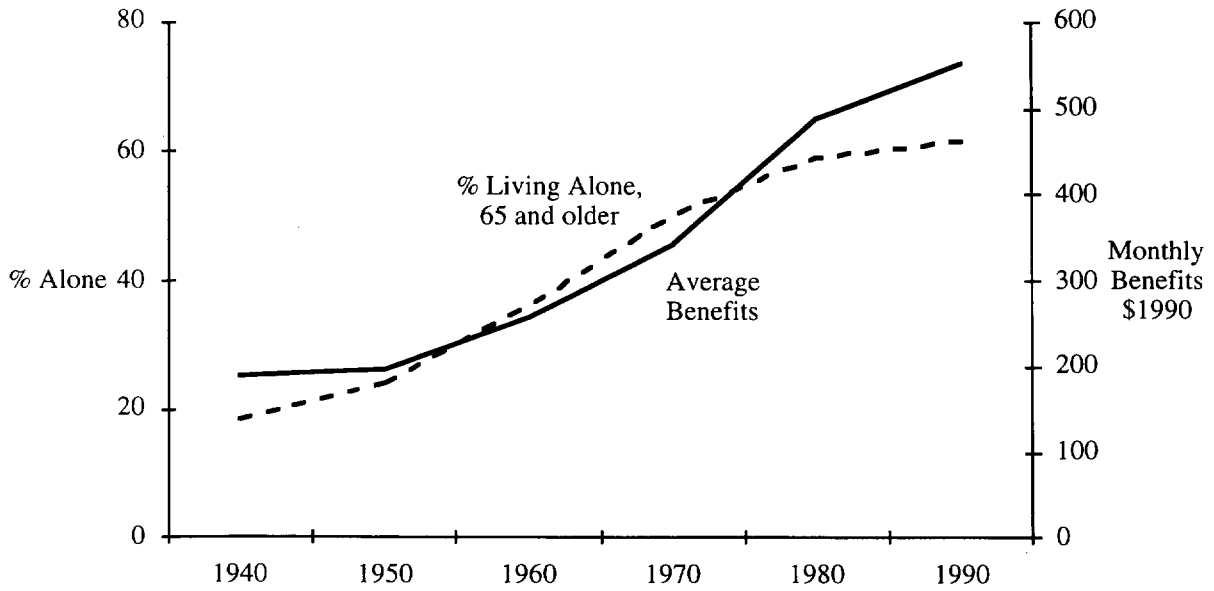
Monthly Benefits $1990

Figure 4
Share of Elderly Widows Living Alone And
Average Social Security Benefits by Age
1960 & 1990

1990-Benefits

1990-% Alone

1960-% Alone

1960-Benefits

% Alone

Monthly Benefits $1990