SOCIAL SECURITY, ECONOMIC GROWTH, AND THE RISE IN ELDERLY WIDOWS' INDEPENDENCE IN THE TWENTIETH CENTURY*

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The percentage of elderly widows living alone rose from 18% in 1940 to 62% in 1990, while the percentage living with adult children declined from 59% to 20%. This study finds that income growth, particularly increased Social Security benefits, was the single most important determinant of living arrangements, accounting for nearly one-half of the increase in independent living. Unlike researchers in earlier studies, we find no evidence that the effect of income became stronger over the period. Changes in age, race, immigrant status, schooling, and completed fertility explain a relatively small share of the changes in living arrangements.

The twentieth century has witnessed an historic shift in the living arrangements of the elderly. At the turn of the century just 15% of widows 65 and older lived alone, but by 1990 the percentage had risen to 62%. This increase in independent living has been mirrored by a decline in the share of elderly widows living with adult children, from 71% to 20%. Although these patterns have been documented, there remains considerable debate about the relative importance of the factors responsible for this trend. As the baby boom generation nears retirement and as plans to reform Social Security intensify, it has become even more important to disentangle the roles of the numerous demographic and economic changes occurring over this period. The goal of the present study is to determine which factor or combination of factors can account for the observed changes and thereby clarify the potential direction of future trends.

Several hypotheses have been proposed to explain the long-run changes in living arrangements. According to one theory, declines in fertility have reduced the availability of family members with whom widows may live (Kobrin 1976; Ruggles 1994; Treas 1977) and therefore have reduced the probability of coresidence. At the same time, younger women's rate of labor force participation has risen sharply. Employment outside the home may have made it more difficult for daughters to care for their elderly parents, thus causing a decline in coresidency. Alternatively, the rise in labor force participation may have made the presence of a grandparent in the home more valuable as a potential source of childcare or other assistance.

Health care, health status, and life expectancy also have improved substantially throughout the century. Elderly persons with fewer health problems ought to be better able to live on their own (Wolf and Soldo 1988; Worobey and Angel 1990); therefore these improvements may have contributed to the observed changes in living arrangements. Researchers also have emphasized the role of cultural factors or tastes in determining changes in household structure, including the rise in individualism and the loss of "traditional" values (Fletcher 1970; Smith 1979). If attitudes toward coresidence changed over this period, the change is likely to be reflected in observed behavior (Kobrin 1976; Kramarow 1995; Ruggles 1994).

Finally, the great change in the propensity to live alone has occurred along with a substantial expansion of the Social Security program, changes in income transfer programs targeting poor elderly persons, and significant economic growth. These improvements in the economic condition of the elderly may have made independent living a feasible option (Beresford and Rivlin 1966; Michael, Fuchs, and Scott 1980; Pampel 1983; Schwartz, Danziger, and Smolensky 1984).

Studies examining changes in living arrangements have reached different conclusions about the relative importance of these alternative hypotheses. Wolf (1995), for instance, using data from a number of different countries, concludes that the effect of demographic changes far outweighs the impact of increases in income. Similarly, Borsh-Supan et al. (1992) do not find that growing income increases the probability that elderly persons will live alone, relative to living with their children. In contrast, Michael et al. (1980) and Costa (1997) conclude that income is the primary factor determining changes in coresidency. Still other authors argue that the effect of economic status has varied over time as tastes for coresidence have changed (Ruggles 1996; Ruggles and Goeken 1992).

We examine this issue anew, improving on past studies in a number of dimensions. First, we analyze changes in living arrangements and their correlates over a 50-year period, drawing on data from each the last six decennial censuses (1940–1990). This time frame allows us to study changes in behavior since the inception of the Social Security program, as well as to focus on the portion of the century in which the largest changes in living arrangements occurred. Second, we incorporate measures of Social Security income that may

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provide more reliable proxies for the financial status of elderly widows than did the variables used in past studies. Third, we use a number of demographic and economic controls to consider each of the competing hypotheses discussed above. And finally, we examine simultaneously the choice of living alone, living with adult children, living in group quarters, or living in another arrangement.

Our measure of income is particularly noteworthy. Ruggles (1996) and Ruggles and Goeken (1992) find that coresidency was related positively to economic status earlier in the century (before about 1960), but negatively thereafter. They conclude that the differences in economic effects represent a change in attitudes toward coresidence. In these studies, however, occupation is used as a measure of economic status; this variable is likely to be a poor proxy for economic status, especially for widows whose economic position is likely to be correlated more strongly with their deceased husbands' occupation. The analysis is hampered further in that the occupation variable is missing or unreliable for nearly half of the elderly individuals in the sample (Ruggles 1996:255). Kramarow (1995) employs an alternative proxy for income, using average annual earnings of workers in the state in which the elderly individual lived.

Our measures of Social Security income and potential welfare benefits allow us to gauge more directly the resources available to the elderly population. By analyzing this information beginning in 1940, we also can shed new light on Ruggles' hypothesis that the relationship between income and living arrangements has changed.

The remainder of the paper is organized as follows: In the next section we describe the data and the sample in detail. Then we describe the long-run trends in living arrangements and their correlates, and move on to discuss the econometric model. The parameter estimates are discussed next, along with a variety of counterfactual simulations that illustrate the roles of various factors in explaining the long-run changes in living arrangements. In the final section we summarize and interpret the findings.

DATA AND SAMPLE

The primary data used in our analyses are drawn from the 1940–1990 decennial censuses as compiled in the Integrated Public Use Microdata Series (IPUMS) and described by Ruggles and Sobek (1995). The IPUMS provides a large sample of elderly individuals and a consistent set of explanatory variables over the period of interest. We refer briefly to statistics calculated from the 1880, 1900, 1910, and 1920 censuses to document changes in living arrangements before the enactment of Social Security. All of our multivariate analyses, however, are restricted to the 1940–1990 censuses, covering the period for which aggregate measures of Social Security income are available.

Using the IPUMS, we can consistently identify four living arrangements across years: living alone, living with an adult child (i.e., a child age 20 or older), living in group quarters, and all other living arrangements (including living with siblings and other relatives). A widow is defined as living in group quarters if she lives with five or more individuals who are unrelated to the household head. In addition to this measure we use data on age, race, education, number of children ever born, residence in a metropolitan area, state of residence, and whether the person was born outside the United States.

Personal income is available for census years 1950–1990. Actual income, however, is likely to depend on the choice of living arrangements, either directly through legislated provisions in public programs, or indirectly through chosen behaviors. Under current law, for example, benefits from the Supplemental Security Income (SSI) Program are reduced by one-third if the recipient lives in another person's household. Thus, all else being equal, SSI recipients who live with others will have lower incomes than those who do not. Similarly, if a widow has no option for coresidence and must manage on her own, she may work in order to increase her income, whereas she would not do so if she were sharing a residence with a child.

To address the endogeneity problem we use two measures of income from other data sources. First, we calculate the average Social Security income of widows in each year, by race and single years of age, using data reported in various issues of the *Social Security Bulletin*.[1] Second, we merge to the microdata the maximum OAA/SSI benefit available in the state in which the elderly person lives in the given year. (Old Age Assistance [OAA] was the precursor to the SSI program.) This measure varies by state and year. All income measures are expressed in 1990 dollars; we also adjust these measures for state differences in the cost of living, using the method employed by Fuchs, Michael, and Scott (1979).

There exists no consistent measure of health status among the elderly over this entire period. As a crude proxy, we use age-specific female (period) life expectancy for each year (Bell, Wade, and Gross 1992).

The analysis is restricted to widows 65 and older, who constitute 56% and 48% of all women of that age respectively in 1940 and 1990. In addition, because we are interested in examining the choice of living arrangements conditional on one's resources at the time when the decision is made, we exclude childless women from the sample.[2] As a result of this selection criterion, all women in our sample had (at least to some extent) the option of living with a child.[3]

1. Individual reports of Social Security income are not available in the census microdata until 1970.

2. Because the number of surviving children is not available in all census years, we make our actual selection on women who have given birth to at least one child.

3. Two of the variables used in our analyses 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 a subset of individuals. 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 (Ruggles and Sobek 1995). This selection yields a smaller sample size for 1940 (9,732) and 1950 (9,360) than for other years. Furthermore, 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. Certainly the decision to remarry is not exogenous, but the probability of remarriage among elderly women is so small that the results are most unlikely to be affected. Over the 11-year period covered by

LONG-RUN TRENDS AND CORRELATES

Table 1 shows the percentage of the population in each of the four living arrangements in each census year. (Table 1 does not exclude widows who never gave birth to a child, but all estimates are very similar when these widows are excluded. They change no more than a few percentage points in all instances.) The change in living arrangements is startling: Between 1880 and 1990 the fraction living alone increased by 52 percentage points or over 500%; living in group quarters also increased dramatically, by 6.3 percentage points or 175%. Coincident with increases in these modes of living arrangements was a substantial decrease in the percentage of elderly widows living with their adult children, from 68% to 20%.

Demographic and Social Change

In this section we discuss the averages, by year, of the variables representing the primary social and demographic factors that are thought to explain the change in living arrangements. The averages are calculated for widows 65 and older who gave birth to at least one child.

Female life expectancy (our crude proxy for health status) at age 65 increased from 13.4 in 1940 to 18.8 in 1990. The change in life expectancy over time is consistent with the change in residency patterns; the correlation between the two series is 0.97 for ages 70 and 80, for example. In a cross-section, however, the variation by age in the share living alone does not closely parallel the variation in life expectancy. Figure 1 displays the patterns for 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 decline in the share of elderly persons living with children is also consistent with the decrease in completed family size. As shown in Table 2, the number of children ever born (in our sample of women with at least one child) declined by 30% from 4.4 in 1940 to 3.1 in 1990. We also find a large increase in the number of women with exactly one child (conditional on having at least one); this fraction increased in our sample from 14% to 21% between 1940 and 1990 (not shown). Although childless widows are excluded from the analytic sample, the fraction of childless widows has increased over time from 12% to 16%, probably further affecting independent living.

Schooling may be considered a measure of lifetime wealth; as a result, it would be correlated positively with the ability to live alone if privacy were a normal good. It has also been argued that schooling affects preferences and may, for example, increase the desire for independence (Caldwell 1982). Over the sample period, elderly widows' average level of schooling increased substantially. The fraction of women with eight or fewer years of schooling declined steadily from 81% to 33%, while the share with at least a high school diploma increased from 12% to 49%.

TABLE 1. LIVING ARRANGEMENTS OF WIDOWS 65 AND OLDER: 1880–1990 (PERCENTAGES)

Year	Alone	With Adult Children	In Group Quarters	With Others
1880	9.3	67.8	3.6	19.4
1900	14.6	70.6	3.4	11.1
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

Note: Sample includes all widows regardless of whether they had a child.

Several studies have found differences in living arrangements across racial and ethnic groups (Angel and Tienda 1982; Hernandez 1989). Some evidence also suggests that immigrants may be more likely than natives to live in extended families (Boyd 1991). As shown in Table 2, we do not see large changes in the racial composition of the elderly population, but the percentage of elderly widows born outside the United States has declined substantially from 24% in 1940 to just 10% in 1990.

Labor force participation by younger women (i.e., the daughters of those in our sample) increased markedly during the 50 years in question, rising from 34.0% in 1942 to 74.9% in 1990 among women age 25–44. This change also might have affected the choice of living arrangements among the elderly. The exact timing of the change, however, does not strongly support this hypothesis. Between 1940 and 1960 the share of widows living alone nearly doubled, from 18.4% to 36.1%, while the share of younger women working increased by only about 6 percentage points, from 34.0% to 39.9%. The largest between-census rise in "daughters'" labor force participation was an increase of 17.7 percentage points in the 1970s (from 47.9% in 1970 to 65.6% in 1980), while the share of widows living alone increased by just 8.7 percentage points during that period. Similarly, younger women's labor force participation rose by an additional 9.3 percentage points in the 1980s, while widows' living arrangements changed very little.

Income Changes

The economic status of the elderly improved substantially over this period. The largest source of income for elderly widows is public programs, specifically Social Security and OAA/SSI. In 1990 two-thirds of all widows received at least half their total income from Social Security.[4] For widows not

the Retirement History Survey (1969–1979) only 4% of the widows remarried (authors' calculation). By the end of the RHS sample period, these women were ages 68–73; thus their remarriage probabilities were slightly higher than those of the population of women we examined, which includes all women 65 and older.

4. Estimate is based on authors' tabulations from the 1990 census.

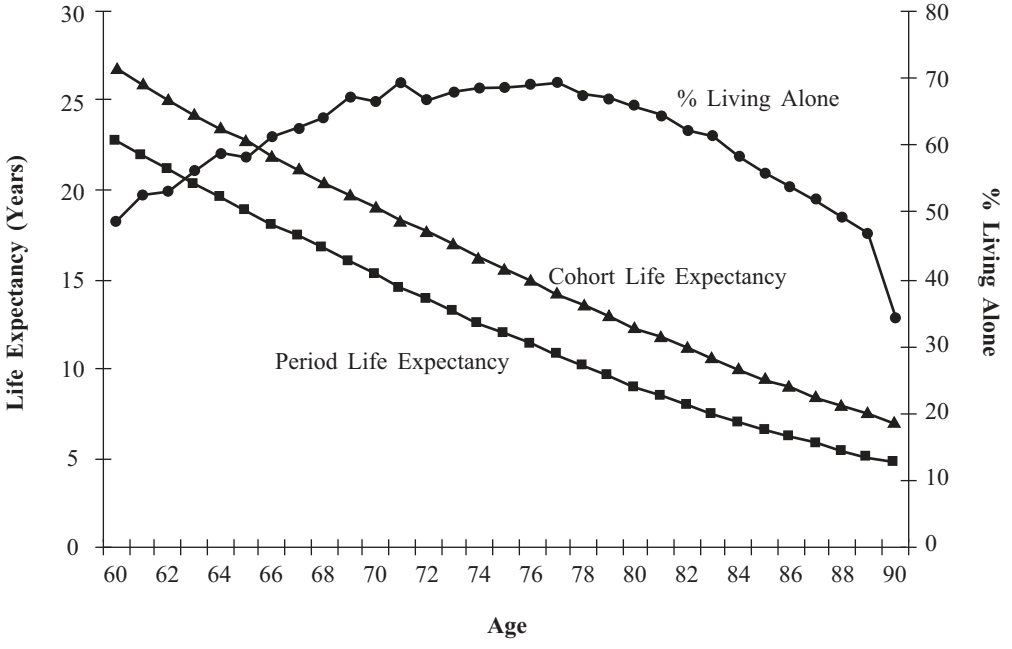
TABLE 2. MEANS OF VARIABLES BY CENSUS YEAR

Year	*N*	Number of Children Ever Born	Years of Schooling		White	Foreign-Born	Female Labor Force Participation, Ages 25–44[a]
			< 9	≥ 12			
1940	9,732	4.4	0.81	0.12	0.91	0.24	34.0[b]
1950	9,360	4.2	0.74	0.16	0.91	0.23	36.4
1960	39,025	4.0	0.72	0.17	0.91	0.20	39.9
1970	51,209	3.5	0.61	0.23	0.92	0.17	47.9
1980	62,939	3.2	0.47	0.35	0.90	0.14	65.6
1990	79,158	3.1	0.33	0.49	0.88	0.10	74.9

[a]Estimates of female labor force participation for 1940–1970 are taken from U.S. Bureau of the Census (1989); estimates from 1980 and 1990 are taken from the U.S. Bureau of the Census (1996).

[b]Estimate of labor force participation is for 1942 because information for 1940 was not available.

FIGURE 1. SHARE OF ELDERLY WIDOWS LIVING ALONE AND FEMALE LIFE EXPECTANCY BY AGE, 1990



receiving Social Security income, or for those with sufficiently low benefits, SSI provided a guaranteed source of income. As we discuss below, assistance of this type was particularly important in the early years of the Social Security program, when Social Security coverage was far from universal; yet it has received little attention in the literature.[5] The generosity of the Social Security and OAA/SSI 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 separately the effects of the two programs. Certainly other dimensions of economic status have changed as well, 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. Because of these omissions, however, our income measures are likely to capture some of the effects of changes in economic status more generally, not only the effects of Social Security and OAA/SSI.

5. The one exception to this omission is a recent study by Costa (1999), which examines the effect of OAA benefits on living arrangements in 1940 and 1950. We discuss this study further in the "results" section.

Social Security. The Social Security program was enacted in 1935 and expanded greatly in subsequent decades. The expansions included increases both in the generosity of benefits and in the scope of coverage.[6] The measure used in the multivariate analyses 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 Social Security.[7]

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 who received a benefit. 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 1.0% to 94.9%. In addition, Social Security benefits were a virtually risk-free source of income that elderly persons could expect to receive for the rest of their lives.

It is difficult to imagine that such large changes in government transfers did not have a major impact on the living arrangements of elderly persons; evidence from aggregate time-series data supports this claim. The rise in average benefits over time closely resembles the increase in widows' propensity to live alone (Tables 1 and 3). Moreover, within a given year the differences in the propensity to live alone, among widows of different ages, are closely related to the differences in the average amount of Social Security benefits received by these women (Figure 2).[8]

OAA/SSI. A second potentially important source of income is the OAA/SSI program. Before 1974, when the federal SSI program was implemented, poor elderly persons could receive benefits from state-operated OAA programs. These benefits were a particularly important source of income before the establishment of the widespread coverage provided by Social Security. In 1940, 21.7% of the population 65 and older received payments from the OAA program.

As Social Security grew, the fraction of income received by the elderly that was attributable to OAA began to shrink. In 1940, OAA benefits accounted for 96.7% of total payments from the two programs. This percentage declined steadily, and reached 3.6% in 1980 under the newer title SSI (Parsons 1991).

Benefits from OAA were determined by the states; the federal government provided partial funding up to specified limits. Despite the clearly delineated limits in federal matching funds, generosity varied greatly across states. In 1960, for example, the maximum monthly benefit ranged from $40 in Mississippi to $275 in Washington State, a difference far greater than the difference in the cost of living. Over time, states implemented a number of changes in real benefit levels, due in part to changes in federal limits on matching funds. These changes resulted in considerable variation within states as well as across states.

TABLE 3. SOCIAL SECURITY AND OAA/SSI COVERAGE AND BENEFITS, 1940–1990

Year	Social Security		Average Maximum OAA/SSI Benefits[a]
	Percentage With Benefits	Average Benefits Among Recipients	
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

[a]To calculate the average maximum OAA/SSI benefit, we restricted the sample to widows living in the 17 states that had OAA/SSI maximums in each of the six census years. This sample represents 37% of the observations from the full sample.

The state-operated programs of OAA were replaced in 1974 by the SSI program. The latter 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 another person's household. Persons with incomes below the guarantee level receive transfers from the federal government to increase their income to the guaranteed amount. Therefore the maximum possible benefit is the amount that an individual with no other income would receive.

In addition to this federal portion of the program, states have the option of increasing the income guarantee, which results in substantial variation in benefit levels across states. In 1990, 42 states and the District of Columbia supplemented the federal program; maximum benefits ranged from $752 (or $366 above the federal level) in Connecticut to $387.70 (just $1.70 over the federal level) in Oregon.[9]

To estimate accurately the role of OAA/SSI income in determining living arrangements, we must identify a measure of generosity that is independent of that choice. Consider the process for calculating benefits in the SSI program: An eligible individual's income is subtracted from the government guarantee, and this difference is the benefit to which the individual is entitled. As stated above, the guar-

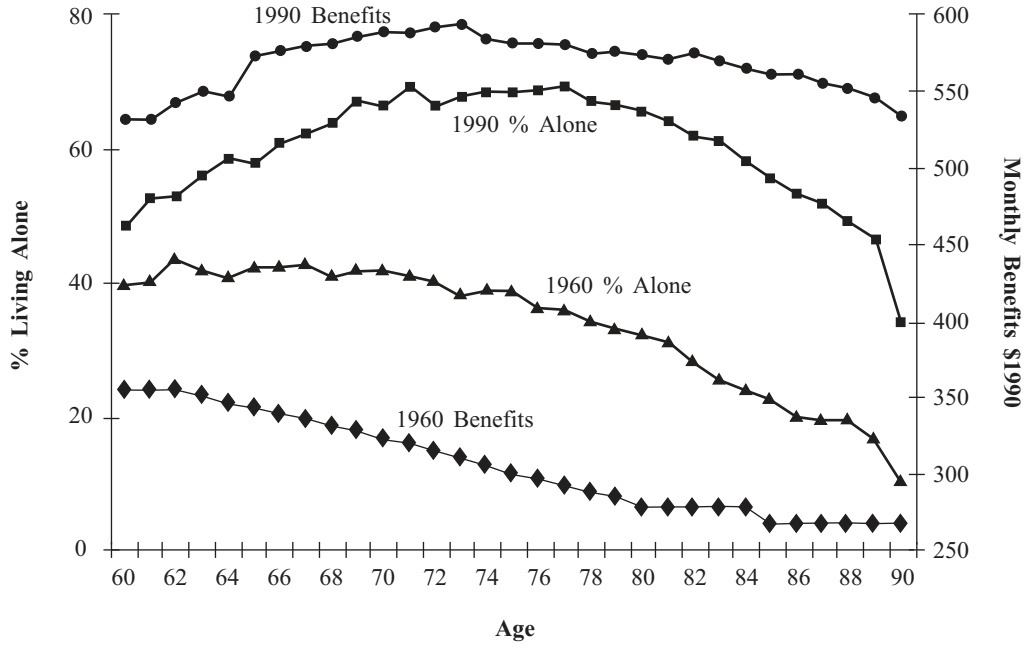
6. The *Social Security Bulletin Annual Statistical Supplements* (U.S. Social Security Administration, various years) contain summaries of the changes in the Social Security law since its inception.

7. The construction of this measure is described in detail in the appendix.

8. One might argue that increases in Social Security benefits need not correspond to increases in the older Americans' financial well-being if Social Security replaces or crowds out private savings (Feldstein 1974, 1982) and/or labor income (Burkhauser and Turner 1978, 1982). We doubt, however, that crowding out of savings is an important phenomenon in our sample because the Social Security program itself, and the large increases in benefits, were largely unanticipated.

9. See McGarry (1996) for a detailed discussion of the SSI program and individuals' decision to claim benefits.

FIGURE 2. SHARE OF ELDERLY WIDOWS LIVING ALONE AND AVERAGE SOCIAL SECURITY BENEFITS BY AGE, 1960 AND 1990



antee is reduced by one-third if the individual lives in another person's household. Thus the amount of average benefits actually paid in a state is a function of the choice of coresidence and of pretransfer income (which is also likely to be related to living arrangements). The average benefit paid in a state is therefore endogenous.[10] To avoid this problem, we use the state-specific maximum benefit payment, which has been employed widely in studies examining the effects of welfare programs on socioeconomic behavior. (For a review, see Moffitt 1992.)

For years in which assistance was available under the OAA program, the process for determining benefits is less straightforward. States did not guarantee that they would bring incomes to the legislated maximum, and payments sometimes varied with state budgets (e.g., Quadagno 1988).[11] Therefore using the average amount of benefits actually received, a method followed by Costa (1999) and Friedberg (1999), has the advantage of approximating more closely the income received by the poor elderly.

We are concerned, however, that such a measure is still likely to depend on the underlying choices made by the elderly, whereas we see no reason why the legislated maximums would be endogenous. Therefore, in our empirical work, we focus on results using state maximums for both the OAA and the SSI programs, but we report estimates from both approaches and comment on the difference.

Prior periods. When we compare trends in living arrangements before and after the passage of the Social Security Act in 1935, we find additional support for the potential role of income changes. The share of widows living alone was fairly stable during the last two decades of the 1800s and the beginning of the 1900s, increasing only slightly from 9% in 1880 to 11% in 1920 (the latest year for which data are available before 1935).

Although recent histories support the notion that elderly married women and all elderly men benefited from the economic changes that occurred in the late 1800s and early 1900s (Gratton 1996; Haber and Gratton 1994), there is no evidence indicating how much (if at all) widows benefited from these changes. In addition, little public assistance was available for the elderly during this period, except through the Civil War pension system (Quadagno 1988). Public almshouses existed, but they generally provided bleak living conditions and housed only a tiny fraction of the elderly population (Haber and Gratton 1994; Scott 1997). Individual states did not begin to legislate assistance programs for the poor elderly until the mid-1920s (although Alaska operated such a program as early as 1915). By 1930, 18 states had established assistance programs; this figure had increased to

10. For example, if a particularly large fraction of widows in one state have a desire for independence and choose to live alone more often than widows in another state, then, all else being constant, the average benefits paid will be higher in the state with the independently inclined widows.

11. The maximums were frequently binding, however. For example, 21.4% of payments were at the state maximums in 1945 (Federal Security Agency 1944).

30 by 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 toward 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 generally consistent with the decline in coresidency. We now turn to the multivariate analyses to disentangle the relative effects of these competing factors.

ECONOMETRIC MODEL

We consider the choice of living arrangements in a utility-maximizing framework in which the utility of each possible living arrangement is compared. The individual chooses the living arrangement that yields the highest possible utility among the four alternatives: alone, with at least one adult child, in group quarters, and in all other arrangements.

This specification ignores the children's wishes and desires. If a parent is to coreside with a child, both parties must agree to the relationship. We do not have information on nonresident children, and therefore can do little to control for characteristics of the child that may affect his or her willingness to provide housing for the parent or to consent to such a relationship. If characteristics of parents and children (such as schooling) are correlated, then the estimated coefficients on the parental variables may capture, in part, the role of the child's characteristics. With a presumed positive correlation, these coefficient estimates will be biased away from zero. Our measures of income, however, are exogenous in this sense because they are measured at the group level.

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

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

We set $\beta_{\text{alone}} = 0$ 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: Widows with relatively low lifetime incomes are likely to have lower than average Social Security benefits and a lower probability of coverage. Therefore the effect of broad increases in Social Security benefits ought to be less strong for this group. Conversely, widows with low lifetime incomes are more likely to be eligible for benefits from the OAA/SSI programs; the effect of these programs therefore will 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 formal education—with our measures of Social Security and OAA/SSI benefits.

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

In some states, if the individual participates in the OAA/SSI program, the state places a lien on his or her property for transfers received. Such lien laws may make participation in OAA/SSI less attractive, thus reducing participation in OAA/SSI and decreasing the incomes of the elderly, and reducing in turn the probability of independent living. Therefore we include an indicator of whether lien laws existed, and (as with the benefit level) interact this variable with schooling.[12]

In the face of considerable recent debate about immigrants' receipt of welfare, evidence suggests that immigrants participate in welfare programs at higher rates than natives (Hu 1998). State laws requiring U.S. citizenship or a period of residency within the state also may affect immigrants and natives differently. Therefore we allow the effect of OAA/SSI to vary by immigrant status. Furthermore, immigrants may be less likely than natives to be covered by the Social Security program because it is less likely that they have worked long enough in the United States to qualify for benefits; thus we also include an interaction of the immigrant indicator variable with Social Security benefits.

We combine observations in each census year, thereby obtaining a sample of 251,423 widows. We include year and state effects to control for unobservable changes over time and differences among states, including changes in daughters' labor force attachment, nursing home availability, Medicaid coverage, and tastes for coresidence.[13] Below we explore variation over time in the effects of the covariates.

RESULTS

What are the effects of income and demographic variables on the probabilities of living with children and living in group quarters, relative to the probability of living alone? (Because living with "others" is a conglomeration of various arrangements, we do not discuss the results here, although we include them in the tables for completeness.) Interpretation of the estimated coefficients from a multinomial logit

12. Other characteristics of state OAA laws also may affect participation. In particular, some states had "relative responsibility" laws requiring children to support their parents if they were able to do so. Because the details of these laws and the strength of enforcement varied greatly across states (Epler 1954), we do not attempt to control for them here. States also differed in residency requirements, U.S. citizenship requirements, and whether the OAA program was funded by local governments or was entirely state-supported. Table 5 displays estimates from models that incorporate some of these additional policy variables.

13. We use sampling weights in the analyses to account for the fact that key information is available only for "sample line persons" in 1940 and 1950, as described in note 3. We obtain very similar estimates, however, when the analyses are conducted without the weights. We report robust standard errors, with clustering permitted at the state level within each year.

model is not straightforward; therefore we present the results in the context of estimated derivatives and simulations. The coefficient estimates themselves can be found in McGarry and Schoeni (1998).

Estimated Effects

The derivatives displayed in Table 4 report the change in the probability of living in the given arrangement—with adult children, in group quarters, with others—relative to living alone, associated with a change in the explanatory variables. We evaluate these derivatives at the means of the right-hand-side variables; all coefficients on the income variables are multiplied by 100. In all columns, the magnitudes of the effects must be interpreted carefully because numerous interaction terms are present.

Living with adult children versus living alone. In keeping with the notion that privacy is a normal good, increases in Social Security benefits have a negative effect on the probability of living with children. For widows born in the United States who have more than eight years of schooling, a $100 increase in monthly Social Security benefits decreases the probability of living with children by 6.26 percentage points. As expected, the effect is smaller (by 1.21 percentage points per $100) for those with just 0–4 years of schooling; these individuals may receive lower than average benefits or may be less likely to have an employment history that entitles them to benefits. For the same reasons, the effect of Social Security is smaller for immigrants.

OAA/SSI is targeted toward a relatively small share of the elderly population: those with low income. Therefore we expect the effect of OAA/SSI to be concentrated among poorer widows (i.e., widows with relatively few years of schooling). The direct effect of OAA/SSI is actually positive, but it is not estimated very precisely. As expected, however, among those with low levels of schooling, larger benefits are associated with a significantly lower probability of living with children: For widows with four or fewer years of schooling, a $100 increase in monthly OAA/SSI benefits decreases the probability of living with children by 0.25 percentage points (0.0082 – 0.0057). In general, the effects of OAA/SSI are modest when compared with the effects of Social Security. This is not surprising, given the relative scope of these programs over most of this period.

Lien laws will make welfare participation less attractive if the elderly wish to leave their homes to their heirs. Similarly, children may 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. For widows with 5–8 years of schooling, lien laws increase the probability of living with children by 2.28 percentage points. The effect for widows with even less schooling, however, is not significantly different from zero. It may be that very poor widows have no property to protect from such laws.[14]

TABLE 4. DERIVATIVES OF SELECTED VARIABLES IN THE BASELINE MULTINOMIAL LOGIT MODEL

	Adult Children	Group Quarters	Others
SS Benefit	–0.0626	0.0038	–0.0069
	13.43	2.70	8.21
SS × Educ = 0–4	0.0121	0.0043	0.0085
	6.54	6.08	7.51
SS × Educ = 5–8	0.0035	0.0021	0.0041
	3.45	4.13	5.11
SS × Foreign-Born	0.0092	–0.0076	0.0017
	2.11	5.04	0.91
OAA/SSI Maximum	0.0057	0.0009	0.0009
	1.71	1.67	1.34
OAA/SSI × Educ = 0–4	–0.0082	0.0011	–0.0011
	3.17	0.14	1.49
OAA/SSI × Educ = 5–8	–0.0020	0.0000	–0.0016
	1.44	0.50	1.87
OAA/SSI × Foreign-Born	0.0010	–0.0001	0.0051
	1.22	0.42	3.67
OAA/SSI Missing	0.0296	0.0143	0.0079
	2.70	3.82	2.37
Lien Law	0.0042	–0.0035	0.0113
	0.96	0.70	2.81
Lien Law × Educ 0–4	–0.0022	0.0112	–0.0028
	0.14	2.39	0.15
Lien Law × Educ 5–8	0.0228	–0.0009	0.0013
	3.08	0.54	1.38
Lien Law × Immig	0.0092	–0.0061	–0.0012
	0.46	1.15	0.06
Education: 0–4	0.0429	–0.0264	–0.0163
	1.74	4.28	1.67
Education: 5–8	0.0256	–0.0113	–0.0124
	1.64	2.44	1.75
Education: 9–11	–0.0045	–0.0028	–0.0013
	1.64	2.11	1.02
Education: 13 or More	–0.0529	0.0035	–0.0054
	11.47	1.53	5.56
Education Missing	0.0917	0.0142	0.0091
	9.74	6.75	3.35
Number of Children	0.0297	–0.0052	–0.0057
	30.80	8.23	1.79
Foreign-Born	0.0392	0.0128	–0.0320
	1.93	2.27	1.95
Life Expectancy	0.0020	–0.0135	0.0062
	0.62	19.06	4.32
Black	0.0184	–0.0190	0.0873
	7.85	2.50	23.10
Other Race	0.1505	–0.0158	0.0668
	12.26	1.31	13.28

Notes: Derivatives on the income variables and their interactions are multiplied by 100. Absolute value of *t* statistic is listed below derivative. Model also includes controls for age, metro area of residence, year effects, and state effects.

14. Although an indicator of homeownership is available in the census, we do not include this variable because it is endogenous to the decision about living arrangements.

Additional children (conditional on having at least one child) increase the probability that a widow will live with an adult child. This finding supports 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 2.97 percentage points.

Because education is a proxy for unobserved economic status, we expect widows with fewer years of schooling to be more likely to live with their children. The estimates imply that widows with 13 or more years of schooling are 5.29 percentage points less likely to live with children than are widows with 12 years of formal education. We must combine the interactions of schooling, Social Security, OAA/SSI, and lien laws to estimate the net effect of schooling on living arrangements for less highly educated widows. Combining the direct and interaction effects and evaluating Social Security and OAA/SSI at their averages, we find that for widows with 0–4 years of schooling, the probability of living with children is 5.55 percentage points higher than for widows with exactly 12 years of schooling ($0.0121 \times (3.25) - 0.0082 \times (3.15) - 0.0022 \times (0.388) + 0.0429$).

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. These calculations (again evaluated at the average Social Security and OAA/SSI benefit) demonstrate that immigrants are 7.58 percentage points more likely than natives to live with children.

Life expectancy, as a crude proxy for health, has no effect on living arrangements, but we find a strong age trend: Older widows are significantly more likely than younger widows to live with children (not reported in tables). Age is quite likely to capture the effects of health status or frailty, although it also may reflect a depletion of assets consistent with the life cycle model of behavior.

In studies that attempt to quantify the effects of changes in preferences over time, it is typically assumed that all of the change in behavior that exists after controlling for observable factors can be attributed to culture or preferences. We control for these changes using year effects. After adjusting for the factors listed in Table 4, we find a significant decrease in the probability of living with children from 1940 to 1970. Moreover, we observe a turnaround after 1970; the year effects imply a substantially higher probability of living with children in 1980 and 1990 than in 1970. One interpretation of this pattern is that preferences or culture changed between 1940 and 1970, with an increase in the desire to live independently. The year effects, however, represent all factors specific to each year that are not captured in the model, including wealth of the elderly and their children, daughters' labor force participation, health status, government provision of medical care, culture and preferences, and many other factors. Therefore the year effects cannot be interpreted as solely representing changes in preferences or culture.

Living in group quarters versus living alone. Living in group quarters includes living in an institution. Factors that explain this type of arrangement have been studied less thoroughly than those explaining coresidence with children, even though institutionalization has grown increasingly common. The patterns evident here suggest that greater Social Security benefits increase the probability of living in group quarters, except for immigrant women. OAA/SSI benefits also have a positive effect on living in group quarters versus living alone, but the magnitude of the effect is small and is statistically significant only at the .10 level.

The presence of more children provides widows with more options for shared living arrangements. At the same time, having more children may increase the probability that widows receive assistance and can remain in their own home. In Table 4, additional children significantly reduce the probability of living in group quarters, by 0.52 percentage points for each child. Because the probability of this type of arrangement is small on average, this difference is substantial.

Less highly educated widows are less likely than better-educated widows to live in group quarters, and this effect is monotonic. Although the derivative for the immigrant variable is significantly different from zero, with all interactions taken into account, immigrants are no more likely than natives to live in group quarters. The estimates also imply that each additional year of expected life is associated with a 1.35 percentage point decline in the probability of living in group quarters.

Finally, we observe that the year indicators (not reported in Table 4) demonstrate an increase in the probability of group residency, and these unexplained year effects are responsible for much of the estimated change. This trend could represent changes in tastes for institutional care or, more likely, changes in the availability of government assistance (Medicaid) to pay for such care, beginning in the late 1960s.

Alternative Specifications

We have found that income plays an important role in the choice of living arrangements. Here we assess the sensitivity of our results to our choice of income measures. We begin by considering the measure of OAA/SSI employed by Costa (1999) and Friedberg (1999). Both authors use the average benefit actually received rather than the maximum potential benefit in the state of residence. Earlier we discussed the potential endogeneity of this measure. For comparison, however, we present this specification as Comparison 1 in Table 5; for convenience, the estimates from Table 4 are replicated as "baseline" in Table 5.

We find very similar effects of Social Security income on living arrangements when these two different measures of OAA/SSI benefits are used. A $100 increase in Social Security benefits decreases the probability of living with children by 6.01 percentage points, compared with 6.26 in our original specification (Comparison 1). The effect is reduced again for widows with low levels of schooling and for immigrants.

The effects of OAA/SSI benefits are very different, however. The main effect of OAA/SSI is negative when average benefit level is used, but the effect is not larger among the least highly educated widows, as we had ex-

TABLE 5. ALTERNATIVE SPECIFICATIONS OF OAA/SSI: DERIVATIVES OF LIVING WITH ADULT CHILDREN VERSUS LIVING ALONE

	Baseline[b,c]	Comparison 1[b,d]	Comparison 2[a,d]	Comparison 3[a,c]	Comparison 4[b,c]
SS Benefit	–0.0626	–0.0601	–5.1827	–5.1967	–0.0668
	13.43	12.79	7.47	7.49	13.29
SS × Educ = 0–4	0.0121	0.0111	1.9581	1.8417	0.0237
	6.54	5.93	6.39	6.28	7.12
SS × Educ = 5–8	0.0035	0.0036	0.5590	0.6086	0.0082
	3.45	3.01	3.38	3.60	3.03
SS × Foreign-Born	0.0092	0.0101	0.9509	1.0062	0.0089
	2.11	2.24	2.13	2.32	2.71
OAA/SSI	0.0057	–0.0126	–3.3508	0.3908	0.0056
	1.71	1.76	1.86	0.39	1.87
OAA/SSI × Educ = 0–4	–0.0082	0.0039	–1.7223	–0.3471	–0.0073
	3.17	0.80	1.84	1.52	2.29
OAA/SSI × Educ = 5–8	–0.0020	0.0050	0.5946	–0.0258	–0.0017
	1.44	1.12	0.02	0.33	1.17
OAA/SSI × Foreign-Born	0.0010	0.0056	–0.5506	0.1822	
	1.22	0.85	0.23	1.42	
OAA/SSI Missing	0.0296			2.8907	0.0273
	2.70			0.54	2.72
Lien Law	0.0042	0.0081	0.0047	0.0007	0.0028
	0.96	1.73	1.38	0.62	0.67
Lien Law × Educ 0–4	–0.0022	0.0127	0.0126	–0.0019	0.0016
	0.14	1.53	1.24	0.13	0.38
Lien Law × Educ 5–8	0.0228	0.0250	0.0244	0.0248	0.0223
	3.08	4.04	3.63	3.00	3.01
Lien Law × Foreign-Born	0.0092	0.0090	0.0008	0.0037	
	0.46	0.12	0.54	0.04	
Citizenship Requirement					–0.0229
					1.66
Citizenship Requirement × Educ = 0–4					0.0006
					0.13
Citizenship Requirement × Educ = 5–8					0.0075
					0.01
Residency Requirement					–0.0265
					2.02
Residency Requirement × Educ = 0–4					0.0245
					1.35
Residency Requirement × Educ = 5–8					0.0055
					0.39
County Administered					–0.0190
					1.38
County Administered × Educ = 0–4					0.0337
					1.88
County Administered × Educ = 5–8					0.0060
					0.28
Locally Financed					–0.0002
					0.01
Locally Financed × Educ = 0–4					0.0038
					0.57
Locally Financed × Educ = 5–8					0.0186
					2.27

Notes: Absolute value of *t* statistic is listed below the derivative. The models also include all variables listed in Table 4.

[a]Log

[b]Level

[c]Maximum OAA/SSI

[d]Mean OAA/SSI

pected. In regard to the overall fit of the statistical model as measured by an *F* statistic, the model that includes the maximum OAA/SSI benefit is preferable to the model that uses the average benefit level. If the average benefit level is used along with a log specification rather than a linear specification of all income variables, as in Costa (1999), we find that the main effect is significantly negative; also, as expected, the effect is larger among the least highly educated widows (Comparison 2).

Comparison 3 reports estimates from a specification that is identical to the baseline model except that the income variables are measured in logs. The estimates imply that a one-log-point increase in Social Security benefits will increase by 5.20% the share living alone among widows with more than eight years of schooling. In the next section we describe simulations that examine the share of the change in living arrangements explainable by changes in Social Security benefits, based on the baseline specification. The share of the change between 1940 and 1990 that one can explain by Social Security using the baseline model (47%) is almost identical to the share based on Comparison 3 (48%). Yet although the effects of Social Security are similar in these two models, the effects of OAA/SSI are not statistically significant in the log specification.

Finally, we also investigate the importance of characteristics of the OAA/SSI program other than the presence of lien laws (Comparison 4). Here we include variables indicating the existence of U.S. citizenship requirements, the existence of state residency requirements, an indicator for whether the program was administered at the county level, and an indicator for whether the program was financed locally. These policies differ among states and over time.

None of the coefficient estimates on these additional policies is very large. Also, given the negative effects of Social Security, the two main effects that are statistically significant (citizenship and residency requirements) are of unexpected sign: Both of these policies make it more difficult for widows to receive benefits, and thus should increase the probability of living with adult children.

Changes Over Time

Ruggles (1996) and Ruggles and Goeken (1992) argue that elderly persons with higher income were more likely to live alone during the first half of the twentieth century, and that this relationship had reversed by about 1960. As discussed in the introduction, this finding is based on the occupational status of the elderly, not on their income, and occupational data are missing for about one-half of all elderly persons in their sample.

We reassess this question using our measure of income. Specifically, we reestimate the multinomial logit model over various periods, and compare the effect of income across the periods. To continue controlling for unobserved state fixed effects, we pool data for two census years at a time, and compare estimates for the following periods: 1940–1950, 1950–1960, 1960–1970, 1970–1980, and 1980–1990. Table 6 presents the marginal effects of the key covariates for the comparison between living with children and living alone.

Throughout the period, greater income translated into a lower probability of living with children. Within each educational category we see no evidence of an increase in the effects of income over this period—an important point. The marginal effect among widows with 5 to 8 years of schooling, which includes most widows, changed over the period: –0.209 in 1940–1950, followed by –0.017, –0.034, –0.026, and –0.031. Moreover, the respective average effects among all widows in each 10-year period are –16.5, –2.4, –3.2, –3.0, and –3.7. We find no evidence that income had a positive effect on the probability of living with adult children during the earliest years of this period.

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 as described in Table 4. First we set the value of all regressors equal to their 1940 levels. Then we change the value of one variable at a time, setting it equal to its 1950, 1960, 1970, 1980, and

TABLE 6. DERIVATIVES OF SOCIAL SECURITY VARIABLES IN MULTINOMIAL LOGIT MODELS, VARIOUS YEAR COMBINATIONS: LIVING WITH ADULT CHILDREN VERSUS LIVING ALONE

	1940–50	1950–60	1960–70	1970–80	1980–90
SS Benefit	–0.2041	–0.0450	–0.0382	–0.0348	–0.0414
	2.95	4.61	5.22	8.46	10.13
SS × Educ = 0–4	0.1750	0.0301	0.0247	0.0121	0.0195
	1.88	2.93	4.36	2.16	4.34
SS × Educ = 5–8	–0.0054	0.0276	0.0043	0.0085	0.0103
	0.94	2.93	1.48	2.62	2.54

Note: Models include all covariates listed in Table 4.

TABLE 7. SIMULATED LIVING ARRANGEMENTS BASED ON BASELINE MULTINOMIAL LOGIT ESTIMATES

	Alone						With Adult Children					
	t = 1940	*t* = 1950	*t* = 1960	*t* = 1970	*t* = 1980	*t* = 1990	*t* = 1940	*t* = 1950	*t* = 1960	*t* = 1970	*t* = 1980	*t* = 1990
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	0.489	0.596	0.633	0.653	0.604	0.470	0.338	0.256	0.223
All Covariates Evaluated at 1940 Except												
(SS)*t*	0.158	0.167	0.209	0.261	0.346	0.380	0.653	0.640	0.581	0.513	0.413	0.376
(OAA/SSI)*t*	0.158	0.154	0.158	0.153	0.169	0.169	0.653	0.656	0.654	0.657	0.646	0.646
(No. of chldrn)*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	0.653	0.649	0.648	0.643	0.638	0.628
(Life expect.)*t*	0.158	0.158	0.158	0.158	0.158	0.158	0.653	0.651	0.650	0.649	0.647	0.647
(Age)*t*	0.158	0.157	0.156	0.153	0.150	0.147	0.653	0.654	0.655	0.657	0.659	0.661
(Race)*t*	0.158	0.158	0.158	0.158	0.156	0.155	0.653	0.653	0.654	0.654	0.655	0.655
Year	0.158	0.200	0.274	0.343	0.308	0.302	0.653	0.621	0.550	0.506	0.556	0.566
	In Institution						With Others					
	t = 1940	*t* = 1950	*t* = 1960	*t* = 1970	*t* = 1980	*t* = 1990	*t* = 1940	*t* = 1950	*t* = 1960	*t* = 1970	*t* = 1980	*t* = 1990
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	0.062	0.063	0.059	0.165	0.155	0.157	0.111	0.085	0.084
All Covariates Evaluated at 1940 Except												
(SS)*t*	0.024	0.025	0.030	0.035	0.044	0.047	0.165	0.168	0.180	0.190	0.197	0.197
(OAA/SSI)*t*	0.024	0.024	0.024	0.025	0.022	0.022	0.166	0.166	0.165	0.165	0.164	0.164
(No. of chldrn)*t*	0.024	0.024	0.025	0.026	0.028	0.028	0.165	0.168	0.172	0.178	0.184	0.184
(Education)*t*	0.024	0.024	0.024	0.025	0.027	0.028	0.165	0.167	0.168	0.171	0.176	0.180
(Life expect.)*t*	0.024	0.018	0.017	0.015	0.013	0.013	0.165	0.173	0.175	0.178	0.182	0.182
(Age)*t*	0.024	0.023	0.023	0.022	0.022	0.022	0.165	0.166	0.166	0.168	0.169	0.170
(Race)*t*	0.024	0.024	0.024	0.024	0.023	0.023	0.165	0.165	0.165	0.164	0.166	0.167
Year	0.024	0.040	0.043	0.061	0.065	0.059	0.165	0.139	0.132	0.090	0.071	0.073

1990 values and calculating the predicted probability of living alone (and of all other living arrangements) at each point. The top row of Table 7 displays the actual probability of each living arrangement in each year. The second row shows the predicted probabilities calculated from the estimates of the baseline model and the mean values of all of the variables for that specific year; the predictions agree closely with the actual values. Subsequent rows report the outcomes of the simulations.

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, and so forth) but keep all other variables in the equation at their 1940 values. In this experiment we calculate the effect of changes in Social Security benefits on living arrangements with all other variables held constant. The change from 1940 to 1990 due only to changes in Social Security benefits (a change from 0.158 to 0.380) is equal to 47% of the total change (from 0.158 to 0.633).

In subsequent rows we repeat the exercise for other variables; all except the year indicators show relatively modest effects. The year effects explain a substantial share of the time trend, especially through 1970; after 1970, however, the share of the change in living arrangements explained by the year indicators begins to decline.

Changes in the number of children explain only 1 percentage point of the 47.5 percentage point increase in the share living alone. Recall that widows who have never given birth are excluded from the sample. Given the rise in the share of childless widows from 12% to 16% between 1940 and 1990, our estimate of the effects of fertility is too low. To obtain an estimate of the size of fertility effects with childless women included in the analysis, consider the following calculation. The fraction of the population without

children increased by 4 percentage points, from 12% to 16%. Assume that if these women had children, their average probability of coresidence would be equal to 0.64 (the probability of coresidence in 1940).[15] Then the total change in the probability of coresidence due to changes in fertility would be .010 + (0.64) (0.04) = 0.0356, the probability of living with children, or 7.5% of the total 47.6 percentage point change.

Forecasts

We can also use this 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. Although the increase in Social Security coverage experienced from 1940 to 1970 cannot be repeated, and although it is unlikely that the generosity of increases in 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 women's labor force attachment and real wages increase (particularly among women whose husbands died at a relatively young age). To approximate this increase, we set average Social Security benefits for widows equal to the average for all persons receiving workers' benefits in 1995 ($719) rather than the average 1990 value of $529 for widows' benefits. 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 forecast separately the effects of the continued decline in fertility. In particular, we simulate the living arrangements under the assumption that completed fertility among widows will decrease from its current level of 3.1 to 2.1 children ever born, the fertility experienced by women ages 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 decline from 0.222 to 0.201.

SUMMARY AND INTERPRETATION OF FINDINGS

During the 50 years preceding the Social Security Act, and perhaps before that time, elderly widows' living arrangements were virtually unchanged: Roughly 10% lived alone, 70% lived with adult children, and the remainder lived in group quarters or in other arrangements. Beginning around 1940, however, this long-standing tradition of intergenerational living arrangements began to change in fundamental ways. In particular, the share of widows living alone increased in the subsequent half-century from 18% to 62%, while the share living with adult children declined by the same magnitude.

Our results suggest that increases in Social Security coverage and benefits, and perhaps more general increases in economic status, were the main forces governing the increase in the propensity to live alone: They explain 47% of the change between 1940 and 1990. These figures suggest that Social Security largely replaced or "crowded out" the family in providing for the elderly. If privacy is viewed as a normal good by both parents and their children, then this substantial crowding out implies that the benefits of Social Security reached across generations.

Our results clarify the relative importance of several other explanations that have been offered in the literature. Sociodemographic factors, particularly declines in the number of children, played a role throughout this period. This role was relatively small, however, explaining slightly less than 10% of the change.

The evidence does not support the hypothesis that the elderly preferred living jointly in the earlier decades of the 1940–1990 period but preferred to live alone during the rest of the 1900s. If income allows the elderly to act more fully on their preferences, and if the elderly preferred to live with their children, then (all else being equal) one would expect elders with higher incomes to be more likely to live jointly during the first half of the 1900s. We did not find that outcome: Elderly persons with higher incomes were more likely to live alone throughout the entire 1940–1990 period. In addition, evidence from 1910 based on a direct measure of income finds that elders with higher income were more likely to live alone (Costa 1997).

Moreover, direct evidence on preferences from survey data implies a preference for privacy (Kasschau 1978; McAuley and Blieszner 1985; Morgan et al. 1962). In a time-series analysis from 1957 to 1978, Crystal (1982) actually finds a slight increase in the fraction of the population who view coresidence as a "good idea." In addition, Haber and Gratton (1994) provide evidence from writings of the late 1800s and early 1900s documenting the tension present in coresident living arrangements, and conclude that both parents and children preferred autonomy. Of course, a consistent time series of stated preferences for independent living throughout the 1900s is not available. The weight of the evidence, however, suggests that during the 1940–1990 period and probably earlier, elderly persons have preferred privacy; when their income has been sufficient, they have chosen to live on their own.

Our knowledge between 1920 and 1940 is seriously lacking. It would be helpful to know whether independent living began to increase in the 1920s and early 1930s, before the establishment of Social Security and the expansion of Old Age Assistance. The Depression, however, is likely to confound any pattern existing during that period.

We offer a further caution. Historical analyses such as these are limited by the unavailability of information describing the set of people with whom widows potentially might live, including the geographic proximity of children and relatives. Although these data are present in contemporary surveys such as the Health and Retirement Survey, the

15. The probability of coresidence for this sample is likely to be lower than the population average because childless women would have fewer children than average and also are likely to have higher incomes and more schooling; all of these factors decrease the probability of coresidence.

Assets and Health Dynamics Survey, and the National Survey of the Aged (Wolf and Soldo 1988), historical information is sparse or nonexistent.

APPENDIX

Calculation of Average Social Security Benefits

Individual-level data on Social Security benefits are not available in the census before 1970. Therefore we use average benefits calculated by single years of age and by race. Ideally we would 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. Although the Social Security Administration publishes data on average survivors' benefits (by age, race, and sex) and average workers' benefits (also by age, race, and sex), we cannot identify workers' benefits received by widows. Therefore we use mean widows' benefits as a proxy for mean benefits received by (female) survivors.

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. Therefore we deflate the average widows' benefit by including zero benefits for the fraction not eligible and calculating a weighted average: (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 to determine from administrative data the number of widows receiving benefits because some widows are receiving benefits for reasons other than their widowed status, particularly from their own status as workers.

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 (samples at older ages are too thin to permit disaggregation by race) who receive any benefit from the Old Age, Survivors, Disability Insurance program, and assume that this rate applies to widows. (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+.)

The denominator of the fraction (the number of women by age and year) is based on our counts from the IPUMS. The numerator in each year (the age-specific number of women receiving any type of Social Security benefits, including workers' benefits, widows' benefits, disabled workers' benefits, and spouses' benefits) was obtained from various Social Security publications.

States With Legislated Maximum OAA Payments

The following states had legislated maximum OAA benefits in each year:

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, District of Columbia, 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.

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