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**HOW OLDER PEOPLE IN THE UNITED STATES
AND GERMANY FARED IN THE GROWTH YEARS
OF THE 1980S—A CROSS-SECTIONAL
VERSUS A LONGITUDINAL VIEW**

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Abstract

This paper uses data from the United States *Panel Study of Income Dynamics* and the *German Socio-Economic Panel* to show how persons living in younger and older households fared during the period of strong economic growth that followed the deep recession of the early 1980s. Cross-sectional comparisons of trough and peak years suggest that the fruits of economic recovery were relatively equally shared between persons living in younger and older households in both countries. However, longitudinal data shows that persons living in older households in both countries received a substantially smaller share of the rewards of recovery, with the entire distribution of income of persons living in older households shifting to the left in the United States. Part of the reason why persons living in older households in Germany did relatively better than persons living in older households in the United States is that yearly adjustments in the German social security retirement system are tied to increases in wages rather than prices as is the case in the United States.

Introduction

Most analyses of how economic well-being and income distribution changed in the United States and in other nations over the 1980s and the early part of the 1990s are based on comparisons of cross-sectional data.¹ (See Levy and Murnane 1992 for a review of the United States literature, and Gottschalk and Smeeding forthcoming for a review of such studies within an international context.) Most recently, Karoly and Burtless (1995) use cross-sectional data to explore the concentration of affluence and poverty in the United States, Beach and Slotsve (1996) to examine income inequality in Canada, Jenkins (1996) in the United Kingdom, and Daly, Crews, and Burkhauser (forthcoming) in the United States and Germany.

While much can be learned from these studies, the nature of the data used limits the scope of the questions that can be answered. Cross-sectional data provide a useful way of comparing groups in a given year—e.g., workers, older people, children, those receiving social assistance transfers, those living in a given geographical location, those in the bottom or top tier of the income distribution—with similarly defined groups in another year. However, the composition of these groups may change over time. To follow the fortunes of a specific group of people over time, it is necessary to use longitudinal data. While these two alternative data sources may lead to the same conclusions, they need not do so.

As we will show, it is critical to recognize the difference in these two perspectives of how economic fortunes change when considering the economic well-being of older persons. In both the United States and Germany policymakers are evaluating reforms in their social security retirement systems that will reduce the financial pressure that their aging baby boom cohorts will bring to those systems over the next three decades. In their deliberations it is inevitable that comparisons of the relative economic well-being of younger and older populations will be made. Here we show how the economic well-being of persons living in older households in these two

countries changed over the growth period of the 1980s business cycle, contrasting cross-sectional views of these changes with longitudinal analyses, which follow the same individuals over the period. In both countries longitudinal analyses yield much more pessimistic outcomes than cross-sectional comparisons. However, in the United States older cohorts are found to have become absolutely worse off during this period of economic growth as well as relatively worse off compared to younger persons.

Data

The data used in both the cross-sectional and longitudinal analyses are from the United States *Panel Study of Income Dynamics* (PSID) and the 1997 Syracuse University English Language Public Use File of the *German Socio-Economic Panel* (GSOEP). Although most economists take for granted that any examination of changes in economic well-being or income distribution will be sensitive to the years being considered, research in this area has frequently failed to distinguish changes associated with movements in the business cycle from changes that occur between two similar points in business cycles.² Here data constraints limit our analysis to only one part of a business cycle. Hence, our analysis is one that shows how the fruits of economic growth were distributed during the approximate trough to peak years of the 1980s business cycle. Because business cycle troughs and peaks in the two countries occurred over slightly different years, in each country, we use the years that mark the deepest part of the recession and the highest point of the subsequent peak rather than comparing the same calendar years in each country. We chose our trough and peak years based on macroeconomic indicators of real gross domestic product, real personal income, and the unemployment rate. For the United

States, the period of observation is 1983 to 1989. For Germany, the analysis covers 1984 to 1991.³

We use the 1984 and 1990 waves of the PSID, which provide income information for years 1983 and 1989 respectively, for both our cross-sectional and longitudinal analyses. The PSID contains information on approximately 15,000 individuals over this period. In the cross-sectional analyses, the data samples for 1984 and 1990 contain all observations in the PSID that have nonzero sampling weights. Thus, there are individuals in the 1984 sample who are not present in the 1990 sample, and vice versa. The longitudinal sample is comprised of the 12,628 individuals who are in both the 1984 and 1990 waves of the PSID. In the longitudinal case, the 1990 sampling weights are used in all estimations. (See Hill 1992 for a fuller discussion of the PSID weighting procedures).

We use the 1985 and 1992 waves of the GSOEP, which provide income information for years 1984 and 1991 respectively, for both our cross-sectional and longitudinal analyses. The GSOEP contains information on approximately 14,000 individuals over this period. The cross-sectional analyses and longitudinal samples of the GSOEP used here are constructed similarly to those of the PSID. Since 1990 the GSOEP has included a representative sample of households living in the reunited eastern states of Germany. However, in these analyses we restrict our sample to individuals living in the western states of Germany. For a more detailed discussion of these data see Wagner, Burkhauser, and Behringer (1993).

Measuring Economic Well-Being

Although we will measure the economic well-being and position in the income distribution of individuals, most people share resources with other coresident individuals and have access to

income that does not flow directly to them. For this reason a broader unit, such as a family or a household, is used to collect information on income from which individual income is derived. There is much disagreement about who should be included in the income-sharing unit definition.

The United States Current Population Survey (CPS) family definition, based on marriage or blood relationship, is often used as the income-sharing unit in the United States income distribution literature (e.g., Burtless 1996; Karoly 1996; Karoly and Burtless 1995) but the CPS household definition, based on common residence, is closer to what is used in most cross-national studies (e.g., Gottschalk and Smeeding forthcoming). Atkinson, Rainwater, and Smeeding (1995) argue that using the blood or marital relationship definition rather than the less restrictive common residence definition produces a bleaker picture of the income distribution because it categorizes a larger number of individuals as single-person sharing units even when they reside and share the benefits of living with others.⁴ The PSID and GSOEP sharing-unit definitions fall somewhere between the strict CPS family and broad CPS common residence definitions in that they include unmarried nonblood-related cohabitants in the “family” but exclude other unmarried nonblood-related residents. For convenience of discussion, we will use the word “household” to describe the PSID and GSOEP sharing units in our analysis, although they are not exactly comparable to the CPS household definition. We also assume that household members equally share household income during the period they are together.⁵

While measures of income distribution are not affected by the cost-of-living index used, measures of economic well-being are. Boskin (1995) offers the most systematic criticism of the CPI-X index used in most measures of economic well-being in the United States and proposes alternative indices for the 1980s that are between 1.0 and 1.5 percentage points below the CPI-X index. While using alternative cost-of-living measures affects the magnitude of our results, they

do not alter our major points.⁶ Hence, we use the CPI-X index in this paper to remain consistent with the literature. We use the International Monetary Fund Consumer Price Index for Germany. All incomes are converted to 1991 monetary units.

Household income is defined as the sum of all income held by individuals residing in a single dwelling, and is measured as post-tax and post-transfer money income. Pre-tax, post-transfer family money income, including cash government transfers, is the most common yardstick for economic status in the United States. It is obtained by summing all sources of income for all household members during a calendar year. To obtain a more comprehensive income measure we added the cash value of food stamps in the United States and the imputed rental value of owner-occupied housing in each country. However, we are interested in making cross-national comparisons and because taxes play a much larger role in Germany than in the United States, we look at household income net of income taxes and Social Security contributions in both countries.⁷

To account for the fact that \$1,000 per week provides a higher standard of living for a single-person household than it does for individuals belonging to larger households, household income is adjusted by an equivalence factor. There is no universally accepted equivalence scale, but the scale used here is one commonly used by cross-national researchers. It has an elasticity with respect to household size of 0.5.⁸ In all cases, income is adjusted for household size for the year in which the income is recorded.

Defining the Older Population

Our interest in examining the effects of economic growth on the income distribution and economic well-being of persons living in older households is premised on the idea that these

individuals, who are primarily out of the labor force, are less likely to benefit from growth than persons living in younger households. Thus, we base our definition of the older population on Social Security eligibility rules and the resulting retirement ages in the two countries. The German retirement system offers greater opportunity for early retirement than does the United States system and the median retirement age in Germany is lower than in the United States. In the United States, while some employer pensions allow for retirement prior to age 62, the earliest age of eligibility for Social Security retirement benefits is 62. Hence, for the United States we divide our population into those persons who live in households whose head is aged 62 or older and those persons who live in households with younger heads.⁹ In Germany, during this period, early Social Security retirement age could begin as early as the late 50s, but by age 60 more than one-half of workers were either retired or had significantly decreased their labor market activity. Hence, we define older households in Germany as those having a head who is aged 60 or older.

To further examine the impact of economic growth on persons living in older households and to separate these effects from retirement decisions, we further divide the population of older households into two groups: the young-old and the old-old. An old-old household is one in which the head is aged 70 or older; this age definition is used in both countries. A young-old household is defined as one in which the head is aged 62 through 69 in the United States and aged 60 through 69 in Germany. Individuals in the young-old households are likely to be affected by both macroeconomic events and transitions into retirement. Most individuals in old-old households will be out of the labor force over the entire period.

In the cross-sectional analyses using either the PSID or the GSOEP, a person's population subgroup assignment is defined in each year by the characteristics of the household in which the person lives in that year. Thus, the same individual could be included in the younger household

group in a trough year and in the older household group in a peak year. For the longitudinal analyses, a person's population subgroup assignment is defined by the household characteristic of the household in which the person lived in the trough year.

Changes in Economic Well-Being in the United States and Germany

In Table 1 we use cross-sectional data and longitudinal data from the trough and peak years of the 1980s business cycle to compare changes in economic well-being and income inequality for the entire population and for our two age subgroups. Our cross-sectional results for the United States population are similar to those of other researchers (e.g., Karoly and Burtless 1995; Karoly 1993; Daly, Crews, and Burkhauser forthcoming; Burkhauser and Poupore 1997). Economic growth following recession brought substantial increases in average economic well-being. In the United States, median household size-adjusted income rose by \$1,902, an increase of 10.71 percent between 1983 and 1989.¹⁰ Our cross-sectional results for Germany are also consistent with past research (e.g., Burkhauser and Poupore 1997; Burkhauser, Holtz-Eakin, and Rhody forthcoming). In Germany median real income increased by 18.86 percent between 1984 and 1991.¹¹

Increases in overall economic well-being during the growth years is shown to have yielded greater inequality in household size-adjusted incomes measured by the 90/10 ratio—i.e., the household size-adjusted income of the person at the 90th percentile relative to that of the person at the 10th percentile. In both countries these measures increased by about 8 percent in the cross-section. However, Germany had much lower income inequality than the United States throughout the period.¹²

The positive picture of increased economic well-being for the total cross-sectional population extends to cross-sectional views of the older and younger subsamples in the two countries. In both the United States and Germany increases in household size-adjusted median income are positive for persons living in older households and rise about the same percentage as for younger households. Such comparisons would suggest that the fruits of economic growth were allocated approximately equally between young and old over the period. However, this conclusion is dramatically challenged when the perspective moves from cross-sectional to longitudinal.

To be included in the PSID and GSOEP longitudinal samples, a person had to be observed in both trough and peak years; hence, the number of observations in the longitudinal sample in the trough year in both countries is smaller than in the cross-sectional trough year sample. This reflects attrition both because of death and nonresponse.¹³ Despite these problems, cross-sectional and longitudinal comparisons of the total population in the two countries between trough and peak years are similar. Among persons observed in these years, income inequality and average economic well-being rose using either cross-sectional or longitudinal data. The increase in household size-adjusted median income in the cross-sectional comparisons in the United States was 10.71 percent. The increase in median income in the longitudinal comparisons is 12.92 percent. In Germany the two values are 18.86 and 20.77 respectively.

It is in the age subgroup comparisons that important differences are found between the cross-sectional and longitudinal views of household size-adjusted income. While cross-sectional increases in economic well-being in the cross-section were similar for persons living in younger and older households in both countries during the growth years of the 1980s, the longitudinal comparisons tell quite a different story.

In the United States, rather than rising by 9.10 percent as it does in the cross-section, when we actually follow the fate of persons living in older households in 1983 we find a drop of 8.76 percent in their median income. In contrast the median income of persons living in younger households in the United States rises from 11.03 percent in the cross-sectional comparison to 16.86 in the longitudinal comparison. Those findings suggest a much different view of how the returns to growth are distributed.

In Germany, our longitudinal measure of changes in economic well-being are also dramatically different from our cross-sectional pictures. The median income of persons living in older households increases by 19.08 percent in the cross-section but only by 7.45 percent longitudinally. Median income of persons living in younger households increases by 20.06 percent in the cross-section but 25.52 percent longitudinally. Hence, while the absolute level of economic well-being of persons living in older German households did not decline longitudinally, as was the case in the United States, it nevertheless rose by a substantially smaller fraction than did median household size-adjusted income of persons living in younger households.

Changes in the cross-sectional population due to the entry of new cohorts and the exit of older ones masks the fate of older people in both countries. It is the entry of higher income “new” old that is driving the improvements in cross-sectional comparisons of the average economic well-being of persons living in older households.

How the Distribution of Income Changed During Economic Growth: A Critique of Summary Measures

Traditional summary measures of income inequality—such as the 90/10 ratio or the Gini, Thiel, and coefficient of variation indices—are well established methods for summarizing inequality in an income distribution. (See Atkinson 1983 for a discussion of these measures.) By

design, however, these measures summarize an entire distribution with one value. Because few distributions with known properties can be completely described by one parameter, however, the use of these summary indices produces an incomplete view of the underlying distribution of interest.

Kernel density estimation is an elegant alternative to using traditional summary statistics to measure income inequality. It provides a picture of the entire income distribution in terms of the income density function, from which we can observe the distribution's location, spread and modality simultaneously. It can also capture absolute increases in income levels via shifts in the density function to the right. Hence, it can show that increases in inequality can arise from a variety of types of changes in the shape of the density function. One type, a "squashing down" in the middle combined with a "stretching" at each end, is typically discussed in the literature (see, for example, Danziger and Gottschalk 1995, Figure 5.1, p. 99). But this is only one possibility, as our data will show. Changes in modality are also revealed by changes in "clumping" at different points along the income scale.

Lorenz curves also provide a picture of the income distribution, but they only provide information about spread and offer nothing about the other two characteristics. Moreover, one can use the density function estimates to derive nonparametric estimates of distribution functions, standard summary indices, and Lorenz curves, if required. For these reasons we use kernel density estimation here to evaluate how the income distribution changed in the United States and Germany during the expansion years of the 1980s for individuals in our older and younger subgroups.

In their simplest forms, kernel estimators are smoothed histograms. Data in a neighborhood around a point are used to estimate the distribution of a variable of interest (e.g.,

income) over a population. However, while histograms restrict observations to any one neighborhood group, kernel estimators theoretically allow an observation to be included in an infinite number of neighborhood groups, which results in a smoothing of the distribution shape. In practice, an observation is included in a finite number of groups, where the number of groups is equal to the sample size. The idea underlying kernel density estimation is a viewing window that slides over the data; the estimate of the density depends on the number of observations that fall within the window as it passes along the income scale.

In all estimates, weighted adaptive bandwidth kernel estimators are used with the Epanechnikov kernel function. Kernel estimators are well established in the statistics and econometrics literatures; an excellent reference on kernel estimators is Silverman (1986). The specifics of the methodology employed here may be found in Burkhauser, Crews, Daly, and Jenkins (1996).

Changes in the Income Distribution: Cross-Sectional versus Panel Views

In Table 1 we provided summary measures of economic well-being (mean and median) and income distribution (90/10 ratio) and showed how they are affected by the use of cross-sectional and longitudinal data. Here we use kernel density estimations for that purpose. In Figures 1a and 1b we show the kernel density estimates of the cross-sectional distribution of income among persons living in older households in the United States and Germany. In both countries the distribution in the peak year (1989 in the United States and 1991 in Germany) is to the right of the distribution for the trough year (1983 in the United States and 1984 in Germany), with less density in the left tails and more in the right. Thus, persons living in older households are shown to be experiencing an overall improvement in their economic well-being during the

expansion period of the 1980s. Increased income inequality among them can also be seen in the two figures as a widening of the distributions and lower heights of the peak-year densities. These figures confirm the findings in Table 1, but they also show that the trough year distribution in the United States was bimodal, which is not discernable from the summary measures of economic well-being.

Figures 2a and 2b present the kernel density estimates for persons living in younger households. Again, in both countries the mass in the right tail significantly increased in the peak year, and the dispersion of the distribution also increased. However in Germany a small increase in the left tail also occurred over the seven years of economic growth. Burkhauser and Crews (1997) and Daly, Crews, and Burkhauser (forthcoming) show this to be the result of economic losses among persons living in households without a working primary adult. Germany has a bimodal distribution in the trough year, while the peak year distribution is unimodal.

We now turn to longitudinal views of changes in income distribution. Figure 3a shows the distribution of household size-adjusted income in 1983 and in 1989 for persons in the United States who were living in a household with a head aged 62 or more in 1983. This figure is in stark contrast to the cross-sectional picture presented in Figure 1a. Now, the distribution in the peak year is to the left of the distribution in the trough year, showing large losses in economic well-being among this population over the six-year period ending in 1989. As was discussed in relationship to Table 1, two causes are most likely behind the disparate views of economic well-being among persons living in older households in the United States. First, the new entrants, the new old, included in the cross-sectional analyses but not in the longitudinal analyses have higher levels of income than their older counterparts. Second, as persons living in older households age,

they reduce work and increasingly depend on pensions and Social Security that in general do not fully replace labor earnings.

The longitudinal view of change in the economic well-being of persons living in older German households is shown in Figure 3b. Unlike their United States counterparts, these individuals still are found to experience gains in economic well-being, although not to the same degree as in the cross-section. The distribution in the peak year has become unimodal, but with a slightly heavier left tail than in the trough year (1984) distribution. These results suggest that the German Social Security system, which has as its explicit goal the maintenance of persons at approximately their same relative position in the income distribution, was more successful in maintaining the economic well-being of persons living in older households over time than was the United States Social Security system.

This is in part due to how benefits in the two systems are adjusted over time. In the United States, benefit increases are intended to offset inflation and, hence, increases are based on price changes using the Consumer Price Index. In Germany, Social Security benefit increases are intended to allow retirees to share in economic growth and, hence, increases are based on wage increases as defined by changes in average gross Social Security covered income. (See Bundesminister für Arbeit und Sozialordnung 1991, and Jacobs and Schmähl 1989 for more on German Social Security benefits.) To the extent that covered wages rise faster than prices, the German system will allow the older population to obtain a greater share of the returns to economic growth.

Figures 4a and 4b contain the kernel density estimates using panel data for persons living in younger households. These are little different than the cross-sectional estimates, except that the left tail does not gain any mass in the longitudinal sample estimates for Germany. This is in

large part due to changes in income affecting individuals in nonworking households. (Burkhauser and Crews 1997).

The Economic Fate of Persons Living in Older Households over Time

In Tables 2 and 3 we concentrate on persons living in older households to provide more insight into the characteristics of those least likely to share in the fruits of economic growth in this population. To try to separate changes in economic well-being that may be traced to reductions in labor force activity from changes due to adjustments in other sources of income, we divide our older subgroup into the young-old and the old-old. Table 2 contains summary measures of economic well-being for all persons in older households and for persons in the two older age subgroups for the two countries. When viewed cross-sectionally, not much is different from Table 1. Persons living in young-old households are seen as better off than are persons living in old-old households in both the trough and peak years in both countries. Changes in median household size-adjusted income are approximately the same in both subgroups—about an 8 percent gain in the United States and a 16 percent gain in Germany.

As was the case in Table 1, the longitudinal view is quite different. Median household size-adjusted income falls in both countries relative to the cross-section but in the United States the greater difference is among the old-old, while in Germany it is among the young-old. The median household size-adjusted income of the persons living in households headed by a person aged 70 and older in 1983 fell 10.22 percent over the next six years of substantial economic growth (versus an 8.73 percent increase as reported in the cross-section and a 7.20 percent decline experienced by the young-old) while in Germany the old-old saw an increase in their median economic well-being that was almost double that of the young-old.

Previous studies have shown that married older households have on average greater economic well-being than single person households. In Table 3 we show how people living in households with both a head and spouse compare to those people who live in a household with no spouse. For ease of discussion we will call the latter single-person households.¹⁴ In both countries, in the cross-section, the median income of persons living in older married households was greater than that of single-person older households in both periods. However, the percentage change in median income was greater for persons living in married households than for single-person older households in the United States. In contrast, single-person older households had a greater percentage gain in median income in Germany. In the United States, the longitudinal results show large drops in median income in both older married and single households, with the greatest percentage losses once again in single older households.¹⁵ In Germany, the longitudinal gains are less than were found in the cross-section for both persons living in older married and single households. But once again unlike the United States, older single-person households did relatively better over the period.

Conclusion

Cross-sectional views of economic well-being and income distribution have dominated the recent literature on the changing distribution of income in the United States and elsewhere. The analyses in this study confirm that household size-adjusted income increased over the economic expansion of the 1980s in both the United States and Germany, as did income inequality. We also find that the economic gains accruing to persons in older and younger households were approximately the same in both countries. However, conclusions about how the gains to

economic growth are distributed across the age distribution using cross-sectional data mask the fate of older cohorts over these growth years.

While little difference was found in how economic well-being and income distribution changed for the total populations in Germany and the United States when longitudinal rather than cross-sectional data are used, substantial changes in the relative returns to growth were found in both countries when younger and older cohorts were followed. Individuals living in United States households headed by someone aged 62 or older in 1983 not only received a smaller share of the fruits of economic growth over the next six years than those living in younger households but actually experienced substantial declines in their economic well-being. Moreover, the declines in economic well-being were greatest for persons in the oldest households and for persons in older single person households, most of whom were women.

While the longitudinal picture in Germany also showed that persons living in older households received a smaller share of economic growth than others, in contrast to the United States, their economic well-being increased. Also in contrast to the United States, in Germany the old-old and single-person households appeared to be better protected than other older households, although no subgroup of the older population in Germany was found to have lost ground during the economic expansion. Our kernel density estimates show more clearly than the summary measure how the choice of data—cross-sectional vs. longitudinal—affects the outcomes of relative measures of economic well-being found across the age distribution.

In creating pictures of the 1980s it is important to focus the lens appropriately. Using cross-sectional comparisons of older persons as evidence that across-the-board cuts in Social Security benefits are less harmful to older people than they would have been in previous decades, because the average income of older people has risen, would clearly miss the fact that while new

cohorts of older people are economically better off than previous cohorts, at least in the United States, income fell for the older cohort despite overall gains in economic growth. While the differences in outcome were not quite so dramatic for Germany, the use of cross-sectional comparison also exaggerate the gains to older cohorts during the trough-to-peak years of the 1980s business cycle in Germany.

Endnotes

1. For exceptions, see the recent literature on economic mobility based on longitudinal data, e.g., Duncan, Boisjoly, and Smeeding (1996), Burkhauser and Poupore (1997), and Burkhauser, Holtz-Eakin, and Rhody (forthcoming).
2. See Burkhauser, Crews, and Daly (forthcoming) for an analysis of the sensitivity of year-to-year cross-sectional comparisons of economic well-being to the years being compared.
3. See U.S. Bureau of the Census (1991) for more on these indicators.
4. Burkhauser, Crews, Daly, and Jenkins (1996) verify this claim using data from the CPS. While they found qualitatively similar overall results using the two definitions, the proportion of individuals in the lower tail of the distribution was larger using the CPS family-based definition.
5. Jenkins (1991) makes a strong case for studying the within-household distribution of income. Lazear and Michael (1988) attempt to do so with respect to adults and children in a given household.
6. Burkhauser, Crews, and Daly (forthcoming) show the effect of using the CPI-X index rather than one which does not overadjust for inflation on the “crossover” point—the percentile at which income in period $t + x$ is first equal to income in period t —in across year cross-sectional economic well-being comparisons.
7. The tax burden for families in the GSOEP was computed using tax calculation routines developed by Johannes Schwarze of the Deutsches Institut für Wirtschaftsforschung. A detailed discussion of the simulations is found in Schwarze (1995). For the United States we used the tax routine provided in the PSID data. In both the United States and Germany our tax models ignore local and state taxes on property or income. Sales taxes are also ignored. Tax-adjusted values for both these datasets are available in the Syracuse University Panel Study of Income Dynamics and German Socio-Economic Panel Equivalent File. See Burkhauser, Butrica, and Daly (1996) for a detailed discussion of these data.
8. Equivalence scales contain assumptions about the returns to shared living. Many equivalence scales, even complicated ones, can be approximated well by a single parameter scale (see Buhmann, Rainwater, Schmaus, and Smeeding 1988). An equivalence scale with an elasticity with respect to household size of 1 (the per capita scale) implies no economies of scale. An elasticity of 0 (i.e., with no adjustments to household income) implies an infinite number of individuals can live as well on a given household income as a single-person household with that income. An elasticity of 0.5 (the square-root scale) assumes that the true economies of scale lie directly between these two extremes. See Burkhauser, Smeeding, and Merz (1996) for a discussion of the sensitivity of different equivalence scales in cross-national comparisons. The household elasticity

implicit in the United States Bureau of the Census poverty scale is 0.56 (Buhmann et al. 1988). While most poverty studies in the United States use the Census poverty scale, it has been severely criticized (see, for example, Citro and Michael 1995). Other recent studies using the square-root equivalence scale are Burkhauser, Crews, and Daly (forthcoming), Burkhauser, Crews, Daly, and Jenkins (1996), Karoly and Burtless (1995), and Atkinson, Rainwater, and Smeeding (1995).

9. For a discussion of the transfer from work to retirement in the United States, see Quinn and Burkhauser (1994). For a discussion of the retirement process in Germany, see Jacobs and Schmähl (1989).
10. Note that much of this growth is the result of business cycle recovery from the serious recession of 1982-1983. However, Burkhauser, Crews, Daly, and Jenkins (1996) show that on average economic growth did occur over peak-to-peak and trough-to-trough comparisons of the United States business cycle of 1979 (peak) to 1983 (trough) to 1989 (peak) to 1992 (trough) for the overall population as well as for persons living in younger and persons living in older households using cross-sectional data from the CPS.
11. The number of years of economic growth in Germany was larger than in the United States. Our purpose here is not to compare changes in absolute economic well-being between the two countries. Rather it is to compare how the relative economic well-being of persons living in younger and older households changed in the two countries over this growth period.
12. Other measures of income inequality, such as the Gini and Theil (0) coefficient, also show that income inequality in Germany rose during the growth years of the 1980s but that the level of inequality in Germany was substantially lower than in the United States during all years. For examples of other comparisons of United States and Germany income inequality, see Daly, Crews, and Burkhauser (forthcoming), and Burkhauser and Poupore (1997).
13. Despite the fact that our longitudinal subsample is restricted to those who are still in the sample in the peak year, there is little difference between average economic well-being and the 90/10 ratio of these subsamples and the full cross-sectional samples.
14. The vast majority of married households contain only two persons. The vast majority of households with no spouse contain one person who is a female.
15. Here, we restrict households to the same marital status in the two years for the longitudinal analyses, and exclude households with transitions in marital status. Due to small sample sizes, we do not evaluate changes in the economic well-being of the transition of households separately. Burkhauser, Butler, and Holden (1991) found that women were particularly at risk of drops in economic well-being following the death of a spouse due to lower personal pension and Social Security benefits and a greater than equivalence scale drop in Social Security benefits in the transition from joint married couple benefits to survivor benefits.

Table 1. Summary Measures of Household Size-Adjusted Income and Income Inequality for Persons by Age of Head Using Cross-Sectional and Longitudinal Data from the United States and Germany

	United States						Germany					
	Cross-Sectional ^a			Longitudinal ^b			Cross-Sectional ^c			Longitudinal ^d		
	1983	1989	Percent Change	1983	1989	Percent Change	1984	1991	Percent Change	1984	1991	Percent Change
All Persons												
90/10 Ratio	5.72	6.23		5.72	6.08		3.30	3.55		3.23	3.48	
Mean Income	20,581	23,885	16.05	20,732	24,546	18.40	27,763	33,123	19.31	27,460	33,812	23.13
Median Income	17,761	19,663	10.71	17,919	20,235	12.92	25,154	29,897	18.86	25,284	30,536	20.77
Sample Size (individuals)	15,508	15,201		12,628	12,628		13,731	11,296		8,817	8,817	
Persons Living in Older Households^e												
90/10 Ratio	5.64	6.09		5.64	7.00		3.60	3.91		3.17	3.44	
Mean Income	21,071	23,847	13.17	21,589	20,310	-5.92	25,075	29,892	19.21	25,348	28,608	12.86
Median Income	17,808	19,429	9.10	18,457	16,923	-8.76	22,145	26,370	19.08	23,357	25,098	7.45
Sample Size (individuals)	2,314	2,488		1,719	1,719		2,115	2,150		1,131	1,131	
Population Proportion	18.29	21.09		16.38	16.38		24.93	28.25		21.48	21.48	
Persons Living in Younger Households^f												
90/10 Ratio	5.78	6.25		5.84	6.04		3.23	3.42		3.19	3.49	
Mean Income	20,471	23,895	16.73	20,565	25,376	23.39	28,655	34,395	20.03	28,038	35,236	25.67
Median Income	17,761	19,720	11.03	17,822	20,826	16.86	26,086	31,319	20.06	25,709	32,269	25.52
Sample Size (individuals)	13,194	12,713		10,909	10,909		11,616	9,146		7,686	7,686	
Population Proportion	81.71	78.91		83.62	83.62		75.07	71.75		78.52	78.52	

^aPost-transfer post-tax household size adjusted income per individual in 1991 dollars based on cross-sectional data from the *Panel Study of Income Dynamics* (1984, 1990).

^bPost-transfer post-tax household size adjusted income per individual in 1991 dollars based on longitudinal data from the *Panel Study of Income Dynamics* (1984, 1990). Sample restricted to individuals observed in both years.

^cPost-transfer post-tax household size adjusted income per individual in 1991 deutsche marks based on cross-sectional data from the *German Socio-Economic Panel* (1985, 1992).

^dPost-transfer post-tax household size adjusted income per individual in 1991 deutsche marks based on longitudinal data from the *German Socio-Economic Panel* (1985, 1992). Sample restricted to individuals observed in both years.

^eHead of household is aged 62 or older for United States households and aged 60 or older for German households. In the longitudinal analyses, the age of the household head is for the initial year.

^fHead of household is younger than age 62 for United States households and younger than age 60 for German households. In the longitudinal analyses, the age of the household head is for the initial year.

Source: Authors' calculations based on the *Panel Study of Income Dynamics* (1984, 1990) and the *German Socio-Economic Panel* (1985, 1992).

Table 2. Summary Measures of Household Size-Adjusted Income and Income Inequality for Persons Living in Older Households by Age of Head Using Cross-Sectional and Longitudinal Data from the United States and Germany

	United States						Germany					
	Cross-sectional ^a			Longitudinal ^b			Cross-sectional ^c			Longitudinal ^d		
	1983	1989	Percent Change	1983	1989	Percent Change	1984	1991	Percent Change	1984	1991	Percent Change
All Persons Living in Older Households^e												
90/10 Ratio	5.64	6.09		5.64	7.00		3.60	3.91		3.17	3.44	
Mean Income	21,071	23,847	13.17	21,589	20,310	-5.92	25,075	29,892	19.21	25,348	28,608	12.86
Median Income	17,808	19,429	9.10	18,457	16,923	-8.31	22,145	26,370	19.08	23,357	25,098	7.45
Sample Size (individuals)	2,314	2,488		1,719	1,719		2,115	2,150		1,131	1,131	
Persons Living in Older Households with a Head Younger than Age 70^f												
90/10 Ratio	5.75	5.90		5.67	4.86		3.46	3.42		3.06	3.24	
Mean Income	23,705	26,826	13.17	23,573	21,815	-7.46	27,475	33,616	22.35	27,184	30,342	11.62
Median Income	20,291	21,974	8.29	20,224	18,767	-7.20	25,154	29,565	17.54	25,301	26,896	6.30
Sample Size (individuals)	1,382	1,401		1,111	1,111		1,120	1,248		699	699	
Population Proportion	52.36	53.97		57.35	57.35		43.45	48.39		51.80	51.80	
Persons Living in Older Households with a Head Aged 70 or Older^g												
90/10 Ratio	3.96	5.80		3.88	5.61		3.73	3.91		4.67	3.64	
Mean Income	18,177	20,355	11.98	18,920	18,286	-3.35	23,232	26,399	13.63	23,375	26,744	14.41
Median Income	15,149	16,471	8.73	16,080	14,436	-10.22	20,402	23,637	15.86	20,995	23,382	11.37
Sample Size (individuals)	932	1,087		608	608		995	902		432	432	
Population Proportion	47.64	46.03		42.65	42.65		56.55	51.61		48.20	48.20	

^aPost-transfer post-tax household size adjusted income per individual in 1991 dollars based on cross-sectional data from the *Panel Study of Income Dynamics* (1984, 1990).

^bPost-transfer post-tax household size adjusted income per individual in 1991 dollars based on longitudinal data from the *Panel Study of Income Dynamics* (1984, 1990). Sample restricted to individuals observed in both years.

^cPost-transfer post-tax household size adjusted income per individual in 1991 deutsche marks based on cross-sectional data from the *German Socio-Economic Panel* (1985, 1992).

^dPost-transfer post-tax household size adjusted income per individual in 1991 deutsche marks based on longitudinal data from the *German Socio-Economic Panel* (1985, 1992). Sample restricted to individuals observed in both years.

^eHead of household is aged 62 or older for United States households and aged 60 or older for German households. In the longitudinal analyses, the age of the household head is for the initial year.

^fHead of household is between aged 62 and 69 for United States households and between aged 60 and 69 for German households. In the longitudinal analysis, the age of the household head is for the initial year.

^gHead of household is aged 70 or older. In the longitudinal analyses, the age of the household head is for the initial year.

Source: Authors' calculations based on the *Panel Study of Income Dynamics* (1984, 1990) and the *German Socio-Economic Panel* (1985, 1992).

Table 3. Summary Measures of Household Size-Adjusted Income for Persons Living in Older Households by Marital Status in the United States and Germany

	United States						Germany					
	Cross-Sectional ^a			Longitudinal ^b			Cross-Sectional ^c			Longitudinal ^d		
	Percent			Percent			Percent			Percent		
	1983	1989	Change	1983	1989	Change	1984	1991	Change	1984	1991	Change
All Persons Living in Older Households^e												
Mean Income	21,071	23,847	13.17	21,589	20,310	5.92	25,075	29,892	19.57	25,348	28,608	12.86
Median Income	17,808	19,429	9.10	18,457	16,923	-8.31	22,145	26,370	19.08	23,357	25,098	7.45
Sample Size (individuals)	2,314	2,488		1,719	1,719		2,115	2,150		1,131	1,131	
Persons Living in Older Married Households^f												
Mean Income	24,055	27,818	15.64	25,137	23,428	-6.80	27,297	32,449	18.87	28,712	32,332	12.61
Median Income	20,874	22,753	9.00	22,440	20,024	-10.77	25,154	28,760	14.34	26,790	28,153	5.09
Sample Size (individuals)	1,380	1,463		894	894		1,430	1,476		666	666	
Population Proportion	63.75	63.98		54.81	54.81		60.93	60.94		51.17	51.17	
Single Person Older Households^g												
Mean Income	15,824	16,797	6.15	16,221	15,268	-5.88	21,612	25,903	19.85	21,142	23,880	12.95
Median Income	12,759	12,961	1.58	13,780	11,149	-19.09	18,524	23,188	25.18	19,590	21,797	11.27
Sample Size (individuals)	934	1,025		572	572		685	674		300	300	
Population Proportion	36.25	36.25		32.60	32.60		39.07	39.06		34.21	34.21	

^aPost-transfer post-tax household size adjusted income per individual in 1991 dollars based on cross-sectional data from the *Panel Study of Income Dynamics* (1984, 1990).

^bPost-transfer post-tax household size adjusted income per individual in 1991 dollars based on longitudinal data from the *Panel Study of Income Dynamics* (1984, 1990). Sample restricted to individuals observed in both years.

^cPost-transfer post-tax household size adjusted income per individual in 1991 deutsche marks based on cross-sectional data from the *German Socio-Economic Panel* (1985, 1992).

^dPost-transfer post-tax household size adjusted income per individual in 1991 deutsche marks based on longitudinal data from the *German Socio-Economic Panel* (1985, 1992). Sample restricted to individuals observed in both years.

^eHead of household is aged 62 or older for United States households and aged 60 or older for German households. In the longitudinal analyses, the age of the household head is for the initial year.

^fOlder household has a head and a partner. In longitudinal analyses, the marital status is the same in both years.

^gOlder household has a head but no partner. In longitudinal analyses, the marital status is the same in both years.

Source: Authors' calculations based on the *Panel Study of Income Dynamics* (1984, 1990) and the *German Socio-Economic Panel* (1985, 1992).

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2	Time? Money? Both? The Allocation of Resources to Older Parents	Couch, Daly, and Wolf	December 1995
3	Coresidence with an Older Mother: The Adult Child's Perspective	Soldo, Wolf, and Freedman	December 1995
4	Determinants and Consequences of Multigenerational Living Arrangements: The Case of Parent-Adult Child Coresidence	Schneider and Wolf	January 1997
5	Do Parents Divide Resources Equally among Children? Evidence from the AHEAD Survey	Dunn and Phillips	January 1997
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7	The Immigrant Sample of the German Socio-Economic Panel	Burkhauser, Kreyenfeld, and Wagner	January 1997
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9	Changes in Economic Well-Being and Income Distribution in the 1980s: Different Measures, Different Outcomes	Burkhauser and Crews	June 1997
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