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CHANGES IN THE INCOMES OF AGE GROUPS, 1984-1989

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# CHANGES IN THE INCOMES OF AGE GROUPS, 1984-1989<sup>1</sup>

## I. Introduction

In recent years there has been great interest in the economic status of the aged, especially in connection with the debates about the appropriate level of Social Security benefits and Medicare coverage and financing. The economic status of the aged relative to other age groups has been of particular interest in these debates. This paper examines changes in the before-tax cash income of the aged and of other age groups from 1984 to 1989. Earlier research found that the real income of the aged rose substantially, both absolutely and relative to the income of the nonaged, from about 1970 to the mid-1980s (Radner 1986, 1987a, 1987b). It is shown here that from 1984 to 1989 the real income of the aged rose slowly, and fell slightly relative to the income of the nonaged. The different rates of income growth for different age groups are explored in this paper, with the emphasis on differences between the aged and nonaged. This paper also serves as an update of an earlier paper that contained estimates for the 1967-1984 period (Radner 1987a). The estimates in this paper generally are consistent with those presented in the earlier article.

The aged are not a homogeneous group, as noted by many analysts. For example, the "young old" have a higher average income than the "old old" do, and aged married couples have a

higher average income than aged widows do. Within each of the subgroups of the aged there is also a wide range of incomes. In this paper, detailed age groups within the aged group are emphasized. Subgroups of the aged based on type of family unit and sex of head, and based on race are also examined. The nonaged, of course, are also not a homogeneous group. Detailed age groups within the nonaged group are shown. Summary estimates for the aged and nonaged are also presented, but the wide diversity present in both groups should be kept in mind when those estimates are examined.

Where possible, medians, rather than means, are used in this paper. Medians generally are more representative of the typical unit in a group than means are because means are affected by extreme values. In many cases comparisons made using medians differ substantially from those made using means. In general, the aged are less well off relative to the nonaged when medians are used because the distribution of income is more highly skewed for the aged than for the nonaged. When inequality and the composition of total income are examined, means are used because medians are not appropriate.

## A. Summary of Findings

Important changes in the real income of the aged from 1984 to 1989 include:

1. The ratio of aged to nonaged median incomes fell slightly each year from 1984 to 1988; the 1989 ratio was unchanged from the 1988 value.
2. The rate of growth in the median income of the aged was substantially lower than in the 1967-1984 period.
3. Inequality in the income of the aged rose.
4. Poverty rates for aged persons fell slightly.
5. The increase in mean total income of the aged was the net result of substantial increases in earnings and pensions and a substantial decrease in property income.
6. The composition of total income of the aged shifted slightly toward earnings and pensions and away from property income and Social Security benefits.
7. The median incomes of socioeconomic subgroups of the aged generally changed only slightly relative to the median income for all units.

## B. Data and Definitions

The data used here are from the Current Population Survey (CPS) conducted by the Bureau of the Census. Most of the estimates shown are from the March 1990 and March 1985 CPS microdata files, but microdata files from several other years and

some published estimates are also used. Income is defined as cash income before taxes, the definition ordinarily used in the CPS. Although some analysts have used broader definitions of income (e.g., including noncash income), estimates for most broader definitions are controversial and are not available for a long time span.

In some of the estimates in this paper, total income is separated into five major income types: earnings (wages and salaries, self-employment income); Social Security benefits (including Railroad Retirement benefits); property income (interest, dividends, rent, royalties, estate and trust income); pensions (government and private pensions, annuities); and other income (Supplemental Security Income, public assistance, unemployment and workers' compensation, and other regularly received income types).

The income recipient units used are "family units." A family unit is either a family (two or more related persons living together) or an unrelated individual (a person who lives with no relatives).<sup>2</sup> Families are classified according to the age of the householder (unit head).

In most of the estimates shown in this paper, income amounts were adjusted for differential needs associated with size of family unit and age of head using the equivalence scale implicit in the poverty thresholds. Although no fully satisfactory adjustment for differential needs is available, that scale is not an extreme one and is used widely.<sup>3</sup> For the estimates presented

in this paper, the use of that scale is preferable to the use of no adjustment.

The income of each family unit was divided by the appropriate equivalence scale value to obtain adjusted income. The value for a one-person unit (all ages) was used as the base for the scale; the adjusted amounts can be interpreted as income per equivalent adult. The scale values used were: one person (under age 65), 1.023; one person (age 65 or older), 0.943; two persons (under age 65), 1.322; two persons (age 65 or older), 1.189; three persons, 1.567; four persons, 2.010; five persons, 2.377; six persons, 2.684; seven persons, 3.055; eight persons, 3.377; and nine persons or more, 3.999.<sup>4</sup>

It is important to note that aged one-person units (unrelated individuals) are assumed to need about 8 percent less income than nonaged unrelated individuals do and aged two-person families are assumed to need about 10 percent less income than nonaged two-person families do. These aged-nonaged differentials are controversial and their use makes the adjusted income of the aged relatively higher than it would be if no aged-nonaged differentials were used.

Underreporting of income amounts has been found to be an important problem in the CPS (Radner 1982). In 1987, total income estimated from the CPS was 11 percent below independent control aggregates, but the shortfall was far greater for some income types, such as property income (U.S. Bureau of the Census 1991b). Underreporting of total income is thought to be higher for older age groups than for younger ones. Thus, aged-nonaged

income ratios would rise somewhat if adjustments for underreporting were made (Radner 1986). The estimates in this paper are not adjusted for underreporting.

A change in CPS processing implemented by the Bureau of the Census beginning with income data for 1988 affected estimates of change somewhat. Compared with the old processing system, the new system increased aggregate total income by almost 1 percent (U.S. Bureau of the Census 1990a). The median total income of aged households was increased by 0.8 percent, while the median total income of nonaged households was increased by 0.3 percent. Increases for some income types were substantially larger than the increase for total income. For example, in terms of aggregate amounts, property income rose about 4 percent, and pensions and self-employment income each rose about 3 percent. Comparisons between 1984 and 1989 should be interpreted with the effects of this processing change in mind.

Constant dollar estimates in 1982 dollars are used here to compare income estimates for different years. The personal consumption expenditure (PCE) implicit price deflator from the National Income and Product Accounts was used to compute these constant dollar estimates.<sup>5</sup> The same price deflator was used for both aged and nonaged units.<sup>6</sup>



## II. Historical Perspective

It is important to put the income changes from 1984 to 1989 into historical context. The relationship between the mean income of the aged and the mean incomes of other age groups from 1947 to 1989 has been characterized by a relative decline for the aged followed by a relative improvement. The most recent time period showed a small relative decline for the aged. Table 1 shows the ratios of the mean income of aged family units to the mean incomes of other age groups for selected years. These estimates, which are derived from published estimates, are not adjusted for differential needs; the levels of these ratios would be higher if such an adjustment had been made.<sup>7</sup> Changes in these ratios, however, are affected only slightly by the lack of that adjustment.

The mean for aged units fell relative to the mean for each other age group from 1947 to 1967; the aged-nonaged ratio fell from 0.67 in 1947 to 0.50 in 1967.<sup>8</sup> From 1967 to 1979 the aged-nonaged ratio rose from 0.50 to 0.54, but the mean for aged units fell or changed little relative to the means for the 35-64 age groups. From 1979 to 1984, however, the mean for aged units rose sharply relative to the mean for every other age group; the aged-nonaged ratio rose from 0.54 to 0.65, a dramatic rise in so short a period. From 1984 to 1989 the aged-nonaged ratio fell slightly from 0.65 to 0.63; the mean for aged units fell relative to the mean for the 45-54 age group, rose relative to the mean for the under 25 age group, and changed little relative to the means for

the other age groups. Thus, in the 1947-1967 and 1979-1984 periods the aged showed strong shifts relative to all other age groups, while the changes in the 1967-1979 and 1984-1989 periods were mixed with respect to the different nonaged age groups.

The 1989 aged-nonaged ratio was slightly below the 1947 ratio.<sup>9</sup> The ratios of the mean for aged units to the means for the 35-64 age groups were lower in 1989 than in 1947. The ratio of the mean for aged units to the mean for the 25-34 age group was slightly higher in 1989 than in 1947 and the ratio of the mean for aged units to the mean for the under 25 age group was substantially higher in 1989 than in 1947.

### III. The 1984-1989 Period

The estimates shown in the remainder of this paper have been adjusted for size of unit and age of head and were obtained from microdata files. Also, medians, rather than means, are used in most cases. Aged-nonaged ratios based on medians generally are lower than those ratios based on means. Comparable estimates are available as far back as 1967. A few estimates for 1967 and several other years and for the 1967-1984 period are shown here for purposes of comparison.

A. Economic conditions

Comparisons between the aged and the nonaged are affected by overall economic conditions. In general, the real income of the aged is less sensitive to current conditions and more sensitive to past factors than is the income of the nonaged. Past earnings and past saving have a strong influence on the current income of the aged. Current labor market activity, on the other hand, has the strongest influence on the income of the nonaged. It should be noted, however, that current labor market conditions and the current level of interest rates also have some impact on the income of the aged.

The period from 1984 to 1989 was a period of substantial economic growth following the severe recession of 1981-82. In contrast, the period from about 1970 to the mid-1980s contained two severe recessions and generally was a period of weaker economic performance. Real Gross National Product rose 3.3 percent per year from 1984 to 1989. The increase was highest for 1988 (4.5 percent) and lowest for 1989 (2.5 percent).<sup>10</sup> Interest rates generally fell, then rose. For example, the average 6-month Treasury bill rate fell from 9.8 percent in 1984 to 6.0 percent in 1986 and 1987, then rose to 8.0 percent in 1989. The overall unemployment rate fell steadily from 7.4 percent in 1984 to 5.2 percent in 1989. Thus, interest rates and unemployment were lower in 1989 than in 1984. The inflation rate generally fell, then rose. The PCE implicit price deflator rose 3.8 percent for 1984, rose 2.4 percent for 1986, then rose 4.6

percent for 1989. Thus, the inflation rate was slightly higher for 1989 than for 1984 (Council of Economic Advisers 1991).

#### B. Aged and Nonaged Median Incomes

The ratio of aged to nonaged median incomes adjusted for size of unit and age fell slightly each year from 1984 to 1988, from 0.727 in 1984 to 0.693 in 1988 (table 2).<sup>11</sup> The 1989 ratio was unchanged from the 1988 value. The 1989 ratio was slightly below the 1982 value. The decline of 4.7 percent in the ratio from 1984 to 1989 was in contrast to the rapid 20.4 percent rise in the ratio from 1979 to 1984. The 1967 to 1984 period showed a 38.2 percent rise in the ratio. Prior to the 1984-1989 period, the most recent decline in the aged-nonaged ratio for a period of at least 4 years appears to have been in the 1964-1970 period. Based on estimates of mean income unadjusted for differential needs, the aged-nonaged ratio fell in 5 of the 6 years in that period, with only a very small rise in 1968. The decline in the ratio of means was from 0.55 in 1964 to 0.49 in 1970.

Changes in aged-nonaged income ratios do not provide information about the levels of rates of change in median income for the aged and nonaged, but only about differences between those rates. An unchanged ratio, for example, could result from rising, falling, or unchanged median incomes for the aged and nonaged. Annual rates of growth in real median income for the 1967-1989 period are shown for aged and nonaged family units in table 3. For the 1984-1989 period, both the aged and the nonaged

showed increases in real median income. Growth in the income of the aged (0.6 percent per year), however, was substantially below growth in the income of the nonaged (1.6 percent per year).

The annual growth rate of the income of the aged was substantially lower in the 1984-1989 period than in any of the other periods shown. The annual growth rate of the income of the nonaged in the 1984-1989 period was higher than in two of the other three periods shown. For the entire 1967-1989 period, the growth rate of the income of the aged was much higher than the growth rate of the income of the nonaged (2.6 percent per year compared with 1.3 percent per year).

For the first three of the four subperiods shown, growth in the income of the aged exceeded growth in the income of the nonaged. The difference in growth rates was particularly striking in the 1979-1984 period, in which the income of the aged rose by 3.4 percent per year and the income of the nonaged fell by 0.3 percent per year. Thus, the rapid increase in the income of the aged relative to the income of the nonaged in the 1979-1984 period resulted from both a decline in the income of the nonaged (associated with the effects of two recessions) and a large rise in the income of the aged.

### C. Medians of Detailed Age Groups

For all ages, real median income in constant 1982 dollars (adjusted for size of unit and age) rose from \$13,330 in 1984 to \$14,303 in 1989, an increase of 1.4 percent per year (table 4).

As noted earlier, for aged units the rise was only 0.6 percent per year (from \$10,271 to \$10,598), while for nonaged units the rise was 1.6 percent per year (from \$14,116 to \$15,303).

Looking only at summary aged and nonaged groups hides many interesting and important differences. There were substantial differences in income growth within both the aged and nonaged groups. Within the aged group, rates of income growth ranged from 0.4 percent per year for the 75-79 age group to 1.7 percent per year for the 70-74 age group. Rates of growth were higher for the 65-74 age groups than for the 75 or older age groups.<sup>12</sup> Within the nonaged group, increases ranged from 0.6 percent per year for the 25-29 age group to 2.5 percent per year for the 50-54 age group.

In addition to the 50-54 age group, which had the highest rate of growth of any age group, the 40-49 and 60-64 age groups also had relatively high rates of growth--at least 2.2 percent per year. The 75-79 age group had the lowest rate of increase of any age group, 0.4 percent per year, and the 80-84 and 85 or older age groups also had relatively low rates of increase--less than 1.0 percent per year.<sup>13</sup> In contrast, for the 1967-1984 and 1979-1984 periods, each detailed aged age group had a higher rate of growth in median income than each nonaged age group (Radner 1987a).

Relative medians (all ages = 1.00) are shown for detailed age groups for 1984 and 1989 in table 5. These relative medians are derived from the medians shown in table 4 by dividing the median for the age group by the all ages median. In both years,

relative medians were low at young and old ages and reached a peak in the 50-54 age group (figure 1). The 85 or older age group had the lowest relative median of any age group in both years.

Changes in relative medians are closely related to the rates of income growth shown in table 4. The relative median for the 65 or older age group fell from 0.77 in 1984 to 0.74 in 1989. Almost all the detailed aged age groups experienced declines in their relative medians, although only the 75-79 and 85 or older age groups showed substantial declines. The 70-74 age group showed a small rise. The under 40 age groups also had declines and the 40-54 and 60-64 age groups experienced increases.

From 1967 to 1984, in contrast, the relative median for each detailed aged age group rose sharply. The median of each detailed aged age group rose relative to the median for each detailed nonaged age group from 1967 to 1984.

#### D. Inequality

In addition to changes in the median or mean, changes in the distribution of income are also important. One way of examining the distribution is through the use of income shares of income quintiles. For aged units, the income share of the bottom income quintile fell from 5.6 percent in 1984 to 5.4 percent in 1989 (table 6).<sup>14</sup> In contrast, the share of the top quintile rose from 48.1 percent to 48.9 percent and the share of the top 5 percent of the distribution rose from 20.5 percent to 21.1 percent for

aged units. These changes continued in the same direction as in the 1979-1984 period.

Inequality, as measured by the Gini concentration ratio, rose from 0.416 to 0.426 for aged units.<sup>15</sup> The Lorenz curve shifted outward, with no intersection; thus, there was an unambiguous increase in inequality. This increase continued an increase from 1979 to 1984.

For nonaged units, the share of the bottom quintile rose slightly from 3.9 percent to 4.0 percent and the share of the top quintile rose from 44.1 percent to 44.4 percent from 1984 to 1989. The share of the bottom quintile had fallen sharply and the share of the top quintile had risen sharply from 1979 to 1984 for nonaged units.

The Gini ratio for nonaged units rose slightly from 0.397 in 1984 to 0.399 in 1989. The Lorenz curves for the 2 years, however, did intersect; therefore, there was no unambiguous change in inequality. There had been a substantial rise in the Gini ratio from 1979 to 1984.

For both 1984 and 1989, the Gini ratio for aged units was higher than the Gini ratio for nonaged units, but the aged and nonaged Lorenz curves intersected. Therefore, inequality among aged units was not unambiguously higher than inequality among nonaged units.

Rates of income growth for income quintiles are closely related to changes in income shares and in inequality. The real mean income of aged units rose 1.1 percent per year from 1984 to 1989 (table 7).<sup>16</sup> The various income quintiles of aged units,



however, showed quite different rates of income growth, although no quintile had a high rate of growth. For aged units, the rate of increase ranged from 0.1 percent per year for the bottom income quintile to 1.5 percent per year for the top quintile and 1.7 percent per year for the top 5 percent of the distribution.<sup>17</sup> This pattern of higher rates of increase at higher income levels was roughly similar to the pattern for the 1979-1984 period, although the earlier period had higher rates of growth.

The real mean income of nonaged units rose 1.7 percent per year. The increases by income quintile ranged only from 1.6 percent per year for the second, third, and fourth quintiles to 2.0 percent per year for the bottom quintile. This pattern is very different from the pattern for the 1979-1984 period, in which the bottom three quintiles showed declines in income while the top quintile showed substantial growth.

#### E. Poverty

Another aspect of the distribution of income is the poverty rate. Poverty rates for 1984 and 1989, based on the official definition of poverty, are shown for detailed age of person groups in table 8.<sup>18</sup> In both years poverty rates were relatively high at young and old ages. The poverty rate for aged persons was above the rate for each age group in the 30-64 age range, but below the rate for children, in both years. In both years the poverty rate for all aged persons was below the rate for all nonaged persons.

There was a wide range of poverty rates among detailed aged age groups in both years. Within the aged group, in each year poverty rates rose as age increased. In 1989, the rates ranged from 8.2 percent for the 65-69 age group to 18.4 percent for the 85 or older age group.

From 1984 to 1989, poverty rates generally fell slightly. The poverty rate for all persons fell from 14.4 percent to 12.8 percent, the rate for aged persons fell from 12.4 percent to 11.4 percent, and the rate for nonaged persons fell from 14.7 percent to 13.0 percent. The decline for nonaged persons was larger than the decline for aged persons, both in percentage point terms and as a percentage of the rate. The rate fell for each detailed age group except the 85 or older age group, in which there was no change. The decline for the aged continued a general trend. The decline for the nonaged reversed the rise from 1979 to 1984.

There is controversy about the appropriate level for the poverty thresholds (e.g., Ruggles 1990). The current level of the thresholds reflects both the initial level chosen and the method chosen for updating that level over time. Even if the official threshold levels that were specified initially are accepted, those thresholds have been indexed for price change but not for changes in the standard of living. If the official thresholds had been indexed to reflect increases in average income, the thresholds would be at a higher level now. Because of this uncertainty about the appropriate level for the thresholds, percentages below thresholds that are somewhat higher than the official thresholds sometimes are examined.

The percentage of each age group with income below 150 percent of the poverty threshold is shown in table 8. A comparison of the percentages below the official threshold and below 150 percent of that threshold in a given year is informative. In both years the percentage below 150 percent of the threshold was more than double the percentage below the official threshold for each aged age group; no other age group doubled its percentage in either year. Thus, relatively higher percentages of aged persons than nonaged persons were not far above the official threshold.

As in the case of poverty rates, percentages below 150 percent of the threshold were relatively high for old and young persons. In both years the percentage of each aged age group below 150 percent of the threshold was higher than the percentage for each age group in the 25-64 age range. The 85 or older and 80-84 age groups had the highest percentages below 150 percent of the threshold of any group in both years (for the 85 or older age group, 38.6 percent in 1989 and 40.3 percent in 1984). In both years the percentage of aged persons below 150 percent of the threshold was substantially higher than the percentage of nonaged persons below 150 percent of the threshold.

Percentages below 150 percent of the threshold fell slightly from 1984 to 1989. In 1989, 27.2 percent of aged persons were below 150 percent of the threshold. That percentage fell from 29.1 percent in 1984. For nonaged persons, the percentage fell from 23.7 percent in 1984 to 21.2 percent in 1989. The percentage for each aged age group fell from 1984 to 1989.

## F. Changes in Income Types

The discussion in the next two sections is in terms of means, rather than medians. This shift to means is made because the relationship between changes in amounts of total income and changes in amounts of income types (and the composition of total income discussed in the next section) cannot be analyzed in a straightforward manner using medians.<sup>19</sup> In addition to entire age groups, income quintiles of aged units are also examined here so that income change and composition at different income levels can be analyzed.

Changes from 1984 to 1989 in constant dollar means of income types are shown by age of head in table 9. For the aged group as a whole, mean total income rose \$806 (5.7 percent). Mean earnings (for all units in the group, not just for those with earnings) rose \$532 (19.1 percent), pensions rose \$437 (22.7 percent), and Social Security benefits and other income each rose by less than \$100.<sup>20</sup> In contrast, mean property income fell by \$275 (7.0 percent).<sup>21,22</sup> The mean of total income excluding property income rose by \$1,081 (10.5 percent) for the aged. The rise in mean pension income resulted in part from an increase from 39 percent to 44 percent in the percentage of aged units receiving pension income. The other income types showed changes of less than one percentage point in the percentage receiving the type.

The changes in mean amounts in the 1984-1989 period differed greatly from those that occurred in the 1979-1984 period. In the

1979-1984 period, in which mean total income of the aged rose by \$2,350 (20 percent), property income rose by \$1,420 (57 percent), Social Security benefits rose by \$650 (14 percent), and pensions rose by \$390 (25 percent), while earnings fell slightly.<sup>23</sup> Mean total income excluding property income rose \$920 (9.9 percent) from 1979 to 1984, slightly less than the increase from 1984 to 1989. For the 1967-1979 period, earnings fell and Social Security benefits, property income, and pensions plus other income rose substantially.

Several income types had different effects on changes in the mean total income of the aged in the 1984-1989 and 1979-1984 periods. The increase in mean total income of the aged in the 1984-1989 period was held down relative to the increase in the 1979-1984 period by the changes in property income and Social Security benefits. After rising by \$1,420 in the earlier period, mean property income fell \$275 in the 1984-1989 period. Mean Social Security benefits rose \$650 in the earlier period, but rose only \$84 in the 1984-1989 period. The change in mean earnings, on the other hand, was a positive factor in the rise in total income in the later period. Mean earnings fell \$80 in the earlier period and rose \$532 in the 1984-1989 period. Although mean pension income rose \$437 in the 1984-1989 period, that figure was only slightly higher than the \$390 rise in the earlier period. Pension income was the only income type that was a substantial positive factor in the growth in mean total income of the aged in both periods.

Mean Social Security benefits of aged units rose 14 percent in the 1979-1984 period, but the rise was only 2 percent in the 1984-1989 period. Differences in the effects of price indexing of existing Social Security benefit amounts accounted for much of that difference. In the 1984-1989 period, automatic cost of living increases in Social Security benefits (which are based on changes in the Consumer Price Index for Urban Wage and Clerical Workers (CPI-W)) amounted to 17 percent, but the PCE implicit price deflator rose 20 percent. Thus, when the PCE implicit price deflator was used to deflate income, the automatic adjustments produced a decrease in real benefits of almost 3 percent. For the 1979-1984 period, automatic cost of living increases amounted to 48 percent, while the PCE deflator rose 38 percent, producing a real increase of about 7 percent. These real changes produced by automatic adjustments resulted from different rates of change of the CPI-W compared with the PCE deflator and the lagged nature of the automatic adjustments. Also, in the 1979-1984 period, legislation postponed the scheduled midyear 1983 automatic increase 6 months to the end of 1983.<sup>24</sup>

For the 65-74 age group from 1984 to 1989, mean earnings and pensions rose substantially, but mean property income fell. The percentage of that age group receiving pension income rose from 43 percent to 48 percent and the percentage receiving earnings rose from 38 percent to 40 percent. For the 75 or older age group, mean Social Security benefits, pensions, and earnings rose, while mean property income fell. The percentage of that

age group receiving pension income rose from 32 percent to 37 percent.

Changes in total income were dominated by changes in earnings for the age groups under age 55. In those age groups, earnings was the only income type that had a change as large as \$100 in mean income. The 55-64 age group, however, showed substantial increases in earnings and pension income, and other income also rose. In that age group, the percentage receiving pension income rose from 24 percent to 28 percent.

Changes in income types for aged units are shown for income quintiles in table 10. The third income quintile is sometimes used to represent "typical" units in the distribution. The third quintile of aged units showed an increase in total income of \$411 (4.0 percent). For that quintile, pensions rose \$275 (20.0 percent) and Social Security benefits rose \$116 (2.0 percent). The other three income types showed small dollar amount changes; mean property income fell by only \$6 and earnings rose by only \$55 (4.8 percent). The percentage receiving pension income rose from 48 percent in 1984 to 53 percent in 1989. From 1979 to 1984, for the third quintile, mean Social Security benefits rose \$630, property income rose \$410, pensions rose \$370, and earnings rose \$180. For the third quintile, the changes in Social Security benefits, property income, and, to a lesser extent, earnings in the 1984-1989 period held down the rise in total income relative to the rise in the 1979-1984 period.

The top quintile of aged units showed an increase in total income of \$2,549 (7.5 percent) from 1984 to 1989. For that

quintile, mean earnings rose \$2,291 (24.2 percent) and pensions rose \$1,296 (26.0 percent). Property income, however, fell by \$1,121 (8.4 percent). The percentage receiving earnings rose from 52 percent to 57 percent, and the percentage receiving pension income rose from 56 percent to 62 percent. From 1979 to 1984, the top quintile showed a rise of \$6,260 in total income. Property income rose \$5,240, Social Security rose \$1,090, pensions rose \$870, and earnings fell \$930. For the top quintile, the change in property income had a strong negative effect on change in total income in the 1984-1989 period relative to the 1979-1984 period, while the change in earnings had a strong positive effect.

#### G. Composition of Income

Different rates of growth for income types result in changes in the composition of total income. The composition of total income for age groups in 1984 and 1989 is shown in table 11. The age groups under age 55 showed little change from 1984 to 1989. For each of those age groups, earnings constituted more than 87 percent of total income in both years. For the 55-64 age group, there was a slight shift from property income to pensions. Earnings constituted about 71 percent of total income for that age group.

For the aged group, the share of earnings rose from 19.6 percent to 22.1 percent. This increase reversed a trend since 1967 (Radner 1987a). The share of pensions rose from 13.6



percent to 15.8 percent. The share of pensions plus other income generally has been rising since 1967. The share of Social Security fell from 36.4 percent to 35.0 percent, continuing the fall from 1979 to 1984. The share of property income fell from 27.5 percent to 24.2 percent, reversing a trend since 1967. The 65-74 and 75 or older age groups both showed decreased shares for property income and increased shares for pensions and earnings.

The composition of total income of aged units is shown by income quintile in table 12. In both years, the shares of earnings, property income, and pensions generally were higher in the higher income quintiles than in the lower income quintiles. The shares of Social Security benefits and other income were higher in the lower income quintiles than in the higher income quintiles.

The share of earnings rose slightly in the bottom four quintiles and rose sharply in the top quintile and the top 5 percent. The percentage of aged units with earnings rose from 52 percent to 57 percent for the top quintile and from 55 percent to 66 percent for the top 5 percent; there was little change for the other quintiles. The bottom quintile showed an increase in the share of Social Security, but all other quintiles showed a decrease. The share of property income fell sharply for the top two quintiles and the top 5 percent, fell slightly for the middle quintile, and showed essentially no change in the bottom two quintiles. The share of pensions rose for all groups, with the increase quite large for the top three quintiles. The percentage of aged units receiving pensions rose for each quintile. The

bottom quintile showed a fall in the share of other income, but the other groups showed little change.

For the third quintile of aged units, the share of earnings changed very little (from 11.1 percent to 11.2 percent), the share of Social Security fell from 56.6 percent to 55.5 percent (continuing the decline since 1979), the share of property income fell from 15.6 percent to 14.9 percent (reversing increases since 1967), and the share of pensions rose from 13.4 percent to 15.4 percent (continuing an increase since 1979). Only the change for earnings differed substantially from the change for the aged group as a whole.

#### H. Socioeconomic Subgroups of the Aged

Relative medians for aged units (the median for the aged subgroup divided by the all ages median) are shown by type of family unit, sex, and age in table 13. In both 1984 and 1989, husband-wife families in the 65-74 age group had the highest relative median of any of the groups shown (1.11 in 1984 and 1.09 in 1989) and female unrelated individuals in the 75 or older age group had the lowest relative median (0.48 in 1984 and 0.47 in 1989).

Changes in relative medians generally were small. In the 65-74 age group, four of the five groups showed an increase in relative median. In the 75 or older age group, four of the five groups showed a decrease. Unrelated individuals in the 65-74 age group generally had the highest increase in median income over

the 1984-1989 period. Unrelated individuals age 75 or older generally showed the lowest increase in median income. For the 1967-1984 period, unrelated individuals, both male and female, in both age groups showed increases in relative medians. The declines in relative medians from 1984 to 1989 for all families and for husband-wife families reversed a trend in both age groups.<sup>25</sup>

Relative medians for aged family units are shown by race and Hispanic origin in table 14. It should be noted that units of "other" race are not shown separately, but are included in the "all units" category. Units of Hispanic origin can be of any race. In both 1984 and 1989, White family units in the 65-74 age group had the highest relative median (0.92 in 1984 and 0.91 in 1989) and Black family units in the 75 or older age group had the lowest relative median (0.37 in 1984 and 0.38 in 1989). In both age groups, relative medians for Black units and for units of Hispanic origin were far below the relative medians for White units. Changes in relative medians generally were small. The lowest rates of income growth were found in the 65-74 age group for Black units (a decline of 0.8 percent per year) and in the 75 or older age group for White units and for units of Hispanic origin.

#### IV. Summary and Conclusions

In terms of changes in the incomes of age groups, the 1984-1989 period was very different from the periods that immediately preceded it. This summary focuses on changes for aged family units. During the 1984-1989 period the rate of growth of real median income of aged units was substantially lower than in other subperiods since 1967, the first year for which comparable detailed estimates are available. During the 1984-1989 period, the ratio of aged to nonaged median incomes fell for 4 consecutive years, after generally rising since about 1970. The relative medians of almost all detailed aged age groups fell at least slightly from 1984 to 1989, after a period of substantial rises. The increases in income for aged units during the 1984-1989 period were higher for high-income units than for low-income units, producing an increase in inequality. The percentage of aged persons who were poor fell slightly from 1984 to 1989, but that percentage remained above the rates for other adult age groups. A relatively high percentage of aged persons had income that was less than 50 percent above the poverty threshold.

The increase in the real mean total income of aged units from 1984 to 1989 was the net result of substantial increases in earnings and pension income and a substantial decrease in property income. In contrast, the much larger increase in real mean total income for aged units from 1979 to 1984 was characterized by a large increase in property income, substantial

increases in Social Security and pension incomes, and a small decrease in earnings. For the third (middle) income quintile of aged units, the modest increase in real mean total income from 1984 to 1989 resulted primarily from increases in pension income and Social Security benefits. From 1984 to 1989, the composition of the income of aged units shifted slightly away from property income and Social Security and toward earnings and pensions.

When aged units were separated into subgroups based on type of family unit, sex, and age, unrelated individuals age 65-74 showed the highest income growth and unrelated individuals age 75 or older showed the lowest growth. For the aged, in both 1984 and 1989, Black units and units of Hispanic origin had relative medians that were far below the relative medians of White units.

The results for the 1984-1989 period presented here emphasize that the relationship between aged and nonaged incomes can be sensitive to the level of economic performance in the economy as well as to long-run trends. Property income has played a particularly volatile role. These results have shown that it should not be automatically assumed that the income of the aged will rise relative to the income of the nonaged in the future. The relationship between the income levels of those groups in the future will depend on many factors.

Table 1.--Ratio of mean incomes, family units with unit head aged 65 or older relative to family units with unit head of age shown, selected years 1947-1989

<u>Age of unit head</u>	<u>1947</u>	<u>1967</u>	<u>1979</u>	<u>1984</u>	<u>1989</u>
Under 25	1.11	.88	1.03	1.45	1.51
25-34	.73	.53	.60	.75	.76
35-44	.61	.45	.46	.56	.55
45-54	.60	.43	.43	.51	.48
55-64	.67	.54	.51	.60	.59
Under 65	.67	.50	.54	.65	.63

Source: Derived from published CPS estimates in various **Current Population Reports**, Series P-60.

Table 2.--Ratio of aged to nonaged median incomes of family units, adjusted for size of unit and age

<u>Year</u>	<u>Ratio</u>
1967	.526
1972	.572
1977	.603
1979	.604
1980	.631
1981	.668
1982	.699
1983	.710
1984	.727
1985	.712
1986	.706
1987	.697
1988	.693
1989	.693

Source: Tabulations from March CPS files.

Table 3.--Average annual percentage change in median real income of family units, by age of unit head, adjusted for size of unit and age

<u>Time period</u>	<u>Under age 65</u>	<u>Age 65 or older</u>
1967-1972	3.1	4.9
1972-1979	1.1	1.9
1979-1984	-0.3	3.4
1984-1989	1.6	0.6
1967-1989	1.3	2.6

Source: Tabulations from March CPS files.



Table 4.--Real median family unit income, by age of unit head, adjusted for size of unit and age, 1984 and 1989, and average annual percentage change in median real income, 1984-1989

(1982 dollars)

<u>Age of unit head</u>	<u>1984</u>	<u>1989</u>	<u>Average annual percent change</u>
20-24	8,505	9,030	1.2
25-29	13,067	13,443	.6
30-34	13,867	14,554	1.0
35-39	15,101	15,667	.7
40-44	15,738	17,519	2.2
45-49	17,356	19,475	2.3
50-54	17,622	19,980	2.5
55-59	16,803	17,965	1.3
60-64	14,097	15,761	2.3
65-69	12,509	13,241	1.1
70-74	10,574	11,497	1.7
75-79	9,143	9,306	.4
80-84	7,868	8,245	.9
85 or older	7,458	7,651	.5
Under 65	14,116	15,303	1.6
65 or older	10,271	10,598	.6
All ages	13,330	14,303	1.4

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 5.--Relative medians of family units, by age of unit head, adjusted for size of unit and age, 1984 and 1989

<u>Age of unit head</u>	<u>1984</u>	<u>1989</u>
20-24	.64	.63
25-29	.98	.94
30-34	1.04	1.02
35-39	1.13	1.10
40-44	1.18	1.22
45-49	1.30	1.36
50-54	1.32	1.40
55-59	1.26	1.26
60-64	1.06	1.10
65-69	.94	.93
70-74	.79	.80
75-79	.69	.65
80-84	.59	.58
85 or older	.56	.53
Under 65	1.06	1.07
65 or older	.77	.74
All ages	1.00	1.00

Source: Tabulations from the March 1985 and March 1990 CPS files.

**Figure 1**  
Relative Median Incomes for Age Groups

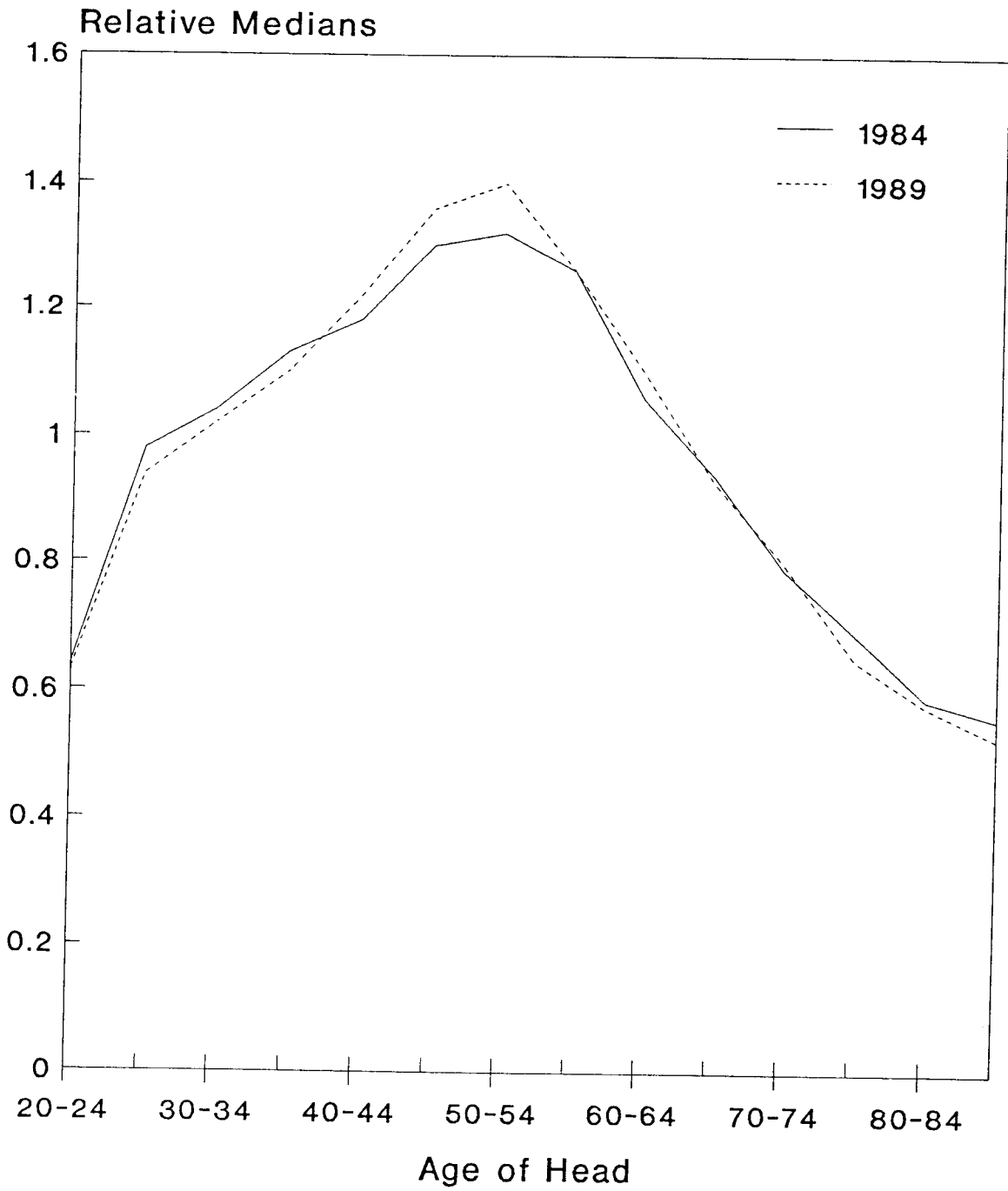


Table 6.--Relative income shares of quintiles of family units, by age of unit head, adjusted for size of unit and age, 1984 and 1989

<u>Income quintile</u>	<u>Under age 65</u>		<u>Age 65 or older</u>		<u>All ages</u>	
	<u>1984</u>	<u>1989</u>	<u>1984</u>	<u>1989</u>	<u>1984</u>	<u>1989</u>
1	3.9	4.0	5.6	5.4	4.2	4.2
2	10.7	10.6	9.5	9.4	10.3	10.1
3	16.8	16.7	14.5	14.3	16.4	16.2
4	24.4	24.2	22.2	22.0	24.1	24.0
5	44.1	44.4	48.1	48.9	45.1	45.5
Top 5%	16.7	16.8	20.5	21.1	17.4	17.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Gini ratio	.397	.399	.416	.426	.404	.408

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 7.--Average annual percentage change in real mean incomes of quintiles of family units, by age of unit head, adjusted for size of unit and age, 1984-1989

<u>Income quintile</u>	<u>Under age 65</u>	<u>Age 65 or older</u>	<u>All ages</u>
1	2.0	.1	1.5
2	1.6	.8	1.4
3	1.6	.8	1.4
4	1.6	.9	1.5
5	1.9	1.5	1.8
Top 5%	1.9	1.7	1.9
Total	1.7	1.1	1.6

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 8.--Percentage of persons poor or near poor, by age of person, 1984 and 1989

<u>Age of person</u>	<u>Percentage of age group below:</u>			
	<u>1984</u>		<u>1989</u>	
	<u>Poverty threshold</u>	<u>150% of poverty threshold</u>	<u>Poverty threshold</u>	<u>150% of poverty threshold</u>
Under 5	23.9	36.2	22.6	33.9
5-9	22.6	33.9	20.3	31.2
10-14	20.1	31.0	18.1	28.2
15-19	18.0	27.4	15.6	25.0
20-24	16.0	27.3	14.8	24.7
25-29	12.5	21.2	11.3	20.0
30-34	11.4	19.4	10.8	18.4
35-39	10.0	17.1	8.9	15.2
40-44	9.6	16.3	7.2	13.1
45-49	9.4	15.3	7.2	12.2
50-54	9.4	15.4	7.7	13.0
55-59	9.9	17.3	9.7	16.2
60-64	10.9	19.9	9.5	17.4
65-69	9.4	21.7	8.2	20.2
70-74	11.5	27.9	9.6	24.7
75-79	13.7	32.9	13.5	32.7
80-84	17.7	40.4	16.7	36.8
85 or older	18.4	40.3	18.4	38.6
Under 65	14.7	23.7	13.0	21.2
65 or older	12.4	29.1	11.4	27.2
All ages	14.4	24.3	12.8	22.0

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 9.--Mean incomes of family units, by type of income and age of unit head, adjusted for size of unit and age, 1984 and 1989

(1982 dollars)

Age of unit head	Year	Total	Earn.	Type of income				Other
				S.S.	Prop.	Pens.		
Under 25	1984	9,281	8,282	35	182	13	770	
	1989	9,673	8,689	41	153	21	770	
	\$ change	392	407	6	-29	8	0	
	% change	4.2	4.9	17.1	-15.9	61.5	0	
25-34	1984	15,392	14,405	56	341	61	529	
	1989	16,209	15,236	67	324	51	531	
	\$ change	817	831	11	-17	-10	2	
	% change	5.3	5.8	19.6	-5.0	-16.4	0.4	
35-44	1984	17,742	16,360	133	650	89	510	
	1989	19,113	17,666	139	687	109	513	
	\$ change	1,371	1,306	6	37	20	3	
	% change	7.7	8.0	4.5	5.7	22.5	0.6	
45-54	1984	20,045	17,621	275	1,156	393	600	
	1989	22,796	20,271	254	1,247	418	607	
	\$ change	2,751	2,650	-21	91	25	7	
	% change	13.7	15.0	-7.6	7.9	6.4	1.2	
55-64	1984	19,251	13,791	1,044	2,449	1,405	562	
	1989	20,927	14,887	1,107	2,405	1,859	669	
	\$ change	1,676	1,096	63	-44	454	107	
	% change	8.7	7.9	6.0	-1.8	32.3	19.0	
65-74	1984	15,569	3,805	5,170	3,893	2,266	435	
	1989	16,823	4,677	5,120	3,672	2,876	478	
	\$ change	1,254	872	-50	-221	610	43	
	% change	8.1	22.9	-1.0	-5.7	26.9	9.9	

Table 9. (continued)

Age of unit head	Year	Total	Earn.	S.S.	Prop.	Pens.	Other
75 or older	1984	12,133	1,273	5,137	3,916	1,424	382
	1989	12,459	1,439	5,408	3,567	1,658	386
	\$ change	326	166	271	-349	234	4
	% change	2.7	13.0	5.3	-8.9	16.4	1.0
Under 65	1984	16,854	14,711	289	923	364	567
	1989	18,374	16,170	286	912	422	585
	\$ change	1,520	1,459	-3	-11	58	18
	% change	9.0	9.9	-1.0	-1.2	15.9	3.2
65 or older	1984	14,185	2,785	5,157	3,903	1,927	414
	1989	14,991	3,317	5,241	3,628	2,364	440
	\$ change	806	532	84	-275	437	26
	% change	5.7	19.1	1.6	-7.0	22.7	6.3
All ages	1984	16,321	12,329	1,261	1,518	676	537
	1989	17,687	13,561	1,291	1,463	816	555
	\$ change	1,366	1,232	30	-55	140	18
	% change	8.4	10.0	2.4	-3.6	20.7	3.4

Source: Tabulations from the March 1985 and March 1990 CPS files.



Table 10.--Mean incomes of aged family units, by type of income and income quintile, adjusted for size of unit and age, 1984 and 1989

(1982 dollars)

Income quintile	Year	Total	Earn.	Type of income				Other
				S.S.	Prop.	Pens.	Other	
1	1984	3,990	73	3,105	169	77	566	
	1989	4,020	84	3,201	166	130	438	
	\$ change	30	11	96	-3	53	-128	
	% change	0.8	15.1	3.1	-1.8	68.8	-22.6	
2	1984	6,771	348	4,979	591	448	405	
	1989	7,046	428	5,093	619	502	403	
	\$ change	275	80	114	28	54	-2	
	% change	4.1	23.0	2.3	4.7	12.1	0	
3	1984	10,306	1,146	5,829	1,606	1,377	349	
	1989	10,717	1,201	5,945	1,600	1,652	319	
	\$ change	411	55	116	-6	275	-30	
	% change	4.0	4.8	2.0	-0.4	20.0	-8.6	
4	1984	15,730	2,887	5,959	3,833	2,739	311	
	1989	16,488	3,112	6,134	3,563	3,247	433	
	\$ change	758	225	175	-270	508	122	
	% change	4.8	7.8	2.9	-7.0	18.5	39.2	
5	1984	34,127	9,470	5,912	13,313	4,993	438	
	1989	36,676	11,761	5,829	12,192	6,289	606	
	\$ change	2,549	2,291	-83	-1,121	1,296	168	
	% change	7.5	24.2	-1.4	-8.4	26.0	38.4	
Top 5%	1984	58,198	17,777	5,746	26,899	6,749	1,027	
	1989	63,174	22,603	5,637	25,419	8,591	924	
	\$ change	4,976	4,826	-109	-1,480	1,842	-103	
	% change	8.6	27.1	-1.9	-5.5	27.3	-10.0	

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 11.--Percentage composition of total income of family units, by age of unit head, adjusted for size of unit and age, 1984 and 1989

<u>Age of unit head</u>	<u>Year</u>	<u>Type of income</u>				
		<u>Earn.</u>	<u>S.S.</u>	<u>Prop.</u>	<u>Pens.</u>	<u>Other</u>
Under 25	1984	89.2	.4	2.0	.1	8.3
	1989	89.8	.4	1.6	.2	8.0
25-34	1984	93.6	.4	2.2	.4	3.4
	1989	94.0	.4	2.0	.3	3.3
35-44	1984	92.2	.8	3.7	.5	2.9
	1989	92.4	.7	3.6	.6	2.7
45-54	1984	87.9	1.4	5.8	2.0	3.0
	1989	88.9	1.1	5.5	1.8	2.7
55-64	1984	71.6	5.4	12.7	7.3	2.9
	1989	71.1	5.3	11.5	8.9	3.2
65-74	1984	24.4	33.2	25.0	14.6	2.8
	1989	27.8	30.4	21.8	17.1	2.8
75 or older	1984	10.5	42.3	32.3	11.7	3.2
	1989	11.6	43.4	28.6	13.3	3.1
Under 65	1984	87.3	1.7	5.5	2.2	3.4
	1989	88.0	1.6	5.0	2.3	3.2
65 or older	1984	19.6	36.4	27.5	13.6	2.9
	1989	22.1	35.0	24.2	15.8	2.9
All ages	1984	75.5	7.7	9.3	4.1	3.3
	1989	76.7	7.3	8.3	4.6	3.1

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 12.--Percentage composition of total income of aged family units, by income quintile, adjusted for size of unit and age, 1984 and 1989

<u>Income quintile</u>	<u>Year</u>	<u>Type of income</u>				
		<u>Earn.</u>	<u>S.S.</u>	<u>Prop.</u>	<u>Pens.</u>	<u>Other</u>
1	1984	1.8	77.8	4.2	1.9	14.2
	1989	2.1	79.6	4.1	3.2	10.9
2	1984	5.1	73.5	8.7	6.6	6.0
	1989	6.1	72.3	8.8	7.1	5.7
3	1984	11.1	56.6	15.6	13.4	3.4
	1989	11.2	55.5	14.9	15.4	3.0
4	1984	18.4	37.9	24.4	17.4	2.0
	1989	18.9	37.2	21.6	19.7	2.6
5	1984	27.8	17.3	39.0	14.6	1.3
	1989	32.1	15.9	33.2	17.1	1.7
Top 5%	1984	30.6	9.9	46.2	11.6	1.8
	1989	35.8	8.9	40.2	13.6	1.5

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 13.--Relative median incomes of aged family units, by type of unit, adjusted for size of unit and age, and average annual percentage change in real median income, 1984-1989

<u>Age and type of unit</u>	<u>Relative median</u>		<u>Average annual percent income change</u>
	<u>1984</u>	<u>1989</u>	
65-74			
Families			
Total	1.08	1.05	.9
Husband-wife	1.11	1.09	1.0
Other male	1.03	1.06	2.1
Other female	.82	.86	2.3
Unrelated individuals			
Total	.58	.61	2.4
Male	.62	.69	3.6
Female	.57	.58	2.1
All units	.88	.87	1.2
75 or older			
Families			
Total	.84	.83	1.1
Husband-wife	.85	.83	1.1
Other male	.94	.82	-1.3
Other female	.83	.80	.7
Unrelated individuals			
Total	.50	.48	.8
Male	.54	.57	2.5
Female	.48	.47	.7
All units	.64	.60	.2
All ages (15 or older)	1.00	1.00	1.4

Source: Tabulations from the March 1985 and March 1990 CPS files.

Table 14.--Relative median incomes of aged family units, by race and Hispanic origin, adjusted for size of unit and age, and average annual percentage change in real median income, 1984-1989

<u>Age, race, and Hispanic origin</u>	<u>Relative median</u>		<u>Average annual percent income change</u>
	<u>1984</u>	<u>1989</u>	
65-74			
All units	.88	.87	1.2
White	.92	.91	1.3
Black	.49	.44	- .8
Hispanic origin	.59	.61	2.1
75 or older			
All units	.64	.60	.2
White	.67	.63	.2
Black	.37	.38	1.7
Hispanic origin	.45	.43	.4
All ages (15 or older)	1.00	1.00	1.4

Source: Tabulations from the March 1985 and March 1990 CPS files.

FOOTNOTES

1. The author is greatly indebted to Sharon Johnson, who prepared the estimates, and to Benjamin Bridges and Selig Lesnoy for their helpful comments. An earlier version of this paper was presented at the annual conference of the Western Economic Association International, Seattle, Washington, July 1, 1991.

2. For a description of the CPS and definitions of total income and families and unrelated individuals, see U.S. Bureau of the Census (1991b). In the estimates in this paper, each family unit is counted once, regardless of the number of persons in the unit. For a discussion of weighting of units and persons, see Danziger and Taussig (1979).

3. Although the poverty thresholds, and therefore the equivalence scale used here, were formulated for low-income units, that same scale generally is applied at all income levels, as it is here. For example, a four-person family is assumed to need 2.13 times as much income as an aged unrelated individual needs, regardless of the level of income. This is an example of the many problems associated with the use of equivalence scales. For a recent comparison of several equivalence scales, see Buhmann et al. (1988).

4. These values were derived from table A-2 in U.S. Bureau of the Census (1989). This scale differs slightly from the scale used in Radner (1987a). Some of the 1984 estimates shown in that article therefore differ slightly from the estimates shown in this paper.

5. Constant 1982 dollars and the PCE implicit price deflator are used here in order to make these estimates consistent with the estimates in Radner (1987a). In the earlier article, the PCE implicit price deflator was used instead of the Consumer Price Index (CPI-U) because prior to 1983 the CPI-U contained a treatment of housing costs that produced excessive increases in the index according to many analysts. The values for the PCE implicit price deflator were obtained from Council of Economic Advisers (1991). Some of the estimates for 1984 in this paper differ slightly from those in Radner (1987a) because the PCE implicit price deflator for 1984 was revised. The PCE implicit price deflator and the CPI-U rose at about the same rate from 1984 to 1989. The PCE implicit price deflator rose 3.7 percent per year (20.2 percent) while the CPI-U rose 3.6 percent per year (19.3 percent) during that period.

6. Research generally has shown that aged and nonaged units have faced about the same rate of increase in prices (e.g., U.S. Bureau of Labor Statistics 1988, Bridges and Packard 1981).

7. Mean incomes are examined in this section because estimates of median incomes of family units are not available for as long a time period. Adjustment for differential needs was not possible.

8. Annual estimates show that the aged-nonaged ratio fell to its lowest value (0.49) in 1970. Changes in the age distribution can affect the summary aged-nonaged ratio. Those effects are one reason that more detailed age groups are shown in this section.

9. Annual estimates show that the 1989 aged-nonaged ratio was about equal to the 1948, 1949, and 1952 ratios. Many aspects of CPS data collection and processing have changed since the 1947 income data. Comparisons over this long time span, therefore, cannot be precise.

10. These are percentage changes from the previous year using annual averages. For example, the 1989 rise was computed by comparing annual average real Gross National Product for 1988 and 1989. The changes in the PCE implicit price deflator discussed below are also changes from the previous year using annual averages.

11. The ratios in table 2 differ from the aged-nonaged ratios in table 1 because the table 2 estimates use income amounts that have been adjusted for size of unit and age (which raises the ratios) and because table 2 is based on medians rather than means (which lowers the ratios).

12. Some of the differences in rates of income growth result from sampling error. The higher rates of income growth for the 65-74 age groups than for the 75 or older age groups resulted primarily from large increases in earnings and pensions for the 65-74 age group (see table 9).

13. The rate of increase in the median for the 65 or older age group is not a simple function of the rates of increase in medians for subgroups of that group. One reason is that the composition of the group can change over time. Thus, even if the median for each subgroup was unchanged, the median for the group as a whole could change. From 1984 to 1989, the number of units age 85 or older rose 18 percent, while the number age 65-69 rose only 6 percent. The 85 or older group has the lowest median among the aged, while the 65-69 age group has the highest median. Another reason for the complexity of the relationship is that the distribution of income within each subgroup becomes important when those subgroups are combined and a median is computed.

When the 1989 means for detailed aged age groups were weighted using 1984 population weights, the mean for the aged group as a whole rose about 1/2 percent compared with the actual 1989 mean. Thus, the change in the age distribution within the aged group had only a small downward effect on the mean income of the aged group as a whole.

14. Family units are ranked according to size of income adjusted for size of unit and age. Each family unit is counted once, regardless of the number of persons in the unit. The income shares refer to aggregate income adjusted for size of unit and age.

15. Inequality is often measured using Lorenz curves and the Gini concentration ratio. A Lorenz curve relates cumulated relative income shares and cumulated percentages of units, when the units are ranked by size of income (Radner 1987a). The Gini concentration ratio is a measure of inequality that can be interpreted as being based on a Lorenz curve. The lower the ratio, the more equal the distribution; zero is complete equality and 1 is complete inequality. Some comparisons of inequality are ambiguous even though differences between Gini concentration ratios exist. In this paper, a distribution is considered to be more (less) equal than a second distribution if the Lorenz curve for the first distribution lies above (below) the Lorenz curve for the second distribution, with no intersection. If two Lorenz curves cross, the comparison is considered to be ambiguous. For a discussion of Gini concentration ratios, Lorenz curves, and the measurement of inequality, see Atkinson (1970).

16. This increase was higher than the increase for the median, 0.6 percent per year.

17. It should be noted that units can shift between quintiles in the 2 years and that some units are added to the group and others leave the group. Therefore, the changes shown here should not be interpreted as changes for the same units.

18. In the official definition of poverty, cash income before taxes is compared with poverty thresholds that differ according to size of unit, number of children, and age of head. See U.S. Bureau of the Census (1991a) for a detailed definition.

19. Median total income cannot be obtained by summing the medians of component income types, whereas mean total income can be obtained by summing the means of component income types (if the means are for all units in the group, not just for those receiving that income type).

20. As noted earlier, other income consists of Supplemental Security Income, public assistance, unemployment and workers' compensation, and other regularly received income types not included in the other four income categories.

21. The available evidence suggests that the value of the assets that generate property income held by aged units did not fall from 1984 to 1988 (U.S. Bureau of the Census 1990b). Thus, the decline in property income shown here was probably primarily the result of a decline in interest rates.



22. Changes in nominal interest rates can affect constant dollar interest income, which is used in the income estimates in this paper, even if real interest rates are unchanged (Radner 1987b). Nominal interest rates include an inflation premium to offset the decline in the real value of the asset. Similar measurement problems arise for some other income types (Jump 1980).

23. Pension income and other income were not shown separately in Radner (1987a) because of data limitations. The estimates of pension change for 1979-1984 were derived in part from estimates in Radner (1987b) and are slightly inconsistent with the changes in other income types shown for that period.

24. For 1984-1989 period, the lag in the automatic adjustment decreased real benefits because inflation was lower just prior to the period than at the end of the period. For the 1979-1984 period, however, the lag increased real benefits because inflation was higher just prior to the period than at the end of the period.

25. When 1984 population weights were applied to the 1989 means for the 10 age-sex-family unit type groups shown in table 13, mean income for the aged group as a whole rose less than 1/2 percent compared with the actual 1989 mean. Thus, changes in the composition of the aged group had only a small downward effect on the mean income of the aged group as a whole.

REFERENCES

- Atkinson, Anthony B. (1970), "On the Measurement of Inequality," **Journal of Economic Theory**, Vol. 2, September, pp. 244-263.
- Bridges, Benjamin, and Packard, Michael D. (1981), "Price and Income Changes for the Elderly," **Social Security Bulletin**, Vol. 44, No. 1, pp. 3-15.
- Buhmann, Brigitte; Rainwater, Lee; Schmaus, Guenther; and Smeeding, Timothy M. (1988), "Equivalence Scales, Well-Being, Inequality, and Poverty: Sensitivity Estimates Across Ten Countries Using the Luxembourg Income Study (LIS) Database," **Review of Income and Wealth**, Series 34, No. 2, pp. 115-142.
- Council of Economic Advisers (1991), **Economic Report of the President, 1991**, U.S. Government Printing Office.
- Danziger, Sheldon, and Taussig, Michael K. (1979), "The Income Unit and the Anatomy of Income Distribution," **Review of Income and Wealth**, Series 25, No. 4, pp. 365-375.
- Jump, Gregory V. (1980), "Interest Rates, Inflation Expectations, and Spurious Elements in Measured Real Income and Saving," **American Economic Review**, Vol. 70, No. 5, pp. 990-1004.
- Radner, Daniel B. (1982), "Distribution of Family Income: Improved Estimates," **Social Security Bulletin**, Vol. 45, No. 7, pp. 13-21.
- Radner, Daniel B. (1986), "Changes in the Money Income of the Aged and Nonaged, 1967-1983," **Studies in Income Distribution**, No. 14, Social Security Administration.
- Radner, Daniel B. (1987a), "Money Income of Aged and Nonaged Family Units, 1967-84," **Social Security Bulletin**, Vol. 50, No. 8, pp. 9-28.
- Radner, Daniel B. (1987b), "Shifts in the Aged-Nonaged Income Relationship, 1979-85," **American Statistical Association 1987 Proceedings of the Social Statistics Section**, pp. 312-317.
- Ruggles, Patricia (1990), **Drawing the Line (Alternative Poverty Measures and Their Implications for Public Policy)**, Washington: The Urban Institute Press.
- U.S. Bureau of the Census (1989), **Poverty in the United States: 1987**, Current Population Reports, Series P-60, No. 163, U.S. Government Printing Office.

U.S. Bureau of the Census (1990a), **Trends in Income, by Selected Characteristics: 1947 to 1988**, Current Population Reports, Series P-60, No. 167, U.S. Government Printing Office.

U.S. Bureau of the Census (1990b), **Household Wealth and Asset Ownership: 1988**, Current Population Reports, Series P-70, No. 22, U.S. Government Printing Office.

U.S. Bureau of the Census (1991a), **Poverty in the United States: 1988 and 1989**, Current Population Reports, Series P-60, No. 171, U.S. Government Printing Office.

U.S. Bureau of the Census (1991b), **Money Income of Households, Families, and Persons in the United States: 1988 and 1989**, Current Population Reports, Series P-60, No. 172, U.S. Government Printing Office.

U.S. Bureau of Labor Statistics (1988), "An Analysis of the Rates of Inflation Affecting Older Americans Based on an Experimental Reweighted Consumer Price Index," U.S. Department of Labor.