

## ***The Retirement Prospects of the Baby Boom Generation***

*by Daniel B. Radner\**

In this article, the financial prospects of baby boomers in their elderly years are examined. The article primarily attempts to draw together and summarize results found by other researchers, but a few new estimates are presented. The consensus of the research appears to be the following. Up to this point, the baby boom generation as a whole has a higher economic status than did their parents' generation at the same ages, but this does not hold for some subgroups. When it becomes elderly, the baby boom generation as a whole probably will have a higher economic status than their parents' generation has and will have at those ages, but, again, this may not hold for some subgroups. It is uncertain whether the baby boom generation as a whole will have enough resources in retirement to maintain their preretirement standard of living without increasing their saving or retiring later, but some subgroups will be able to maintain their living standard without changing their behavior.

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### ***I. Introduction***

The baby boom generation has been of great policy interest for many years. This generation, which generally is defined as consisting of persons born from 1946 to 1964 inclusive, numbers roughly 78 million persons and constituted 29 percent of the U.S. population in 1997. When this generation was young, its size put great pressure on the educational system. When this generation becomes elderly in the 21st century, its size is expected to strain our retirement income and health care institutions.

In this article, the financial prospects of the baby boomers in their elderly years are examined. The article primarily discusses results found by other researchers, but a few new estimates are presented. The article attempts to draw together and summarize results from several different sources, primarily from analyses that focus on the baby boom generation itself.<sup>1</sup> The reports discussed are Congressional Budget Office (1993); Easterlin, Schaeffer, and Macunovich (1993); American Association of Retired Persons (1994); Bernheim (1993); and Kotlikoff and Auerbach (1994). The discussion here generally assumes that no policy changes (for example, reductions in Social Security benefits that have not yet been legislated) will be made. Although some changes will be needed to put the Social Security program in long-term balance, the nature of the changes that will be made is uncertain. Therefore, the precise impact of the changes also is uncertain.

There is much disagreement about the retirement prospects of the baby boom generation in the studies discussed in this article. Much of that disagreement results from asking different questions and using different approaches to obtain answers. The questions that have been asked and how those questions differ are examined. Those questions include: How do the income and wealth of the

baby boom generation up to now compare with the income and wealth of their parents (or other earlier cohorts) at the same age? Will the income and wealth of the baby boom generation in retirement be greater than the income and wealth of their parents (or other earlier cohorts) in retirement? Will the baby boomers be able to maintain their preretirement consumption in their retirement years?

Several important dimensions need to be considered in discussing the assessments of the baby boomers' retirement prospects. The first dimension is the type of estimate made. Actual amounts of income or wealth have been used when comparisons up to the age attained by the baby boomers are made. Amounts of income and consumption also have been projected for the baby boomers' retirement years. Those projections sometimes are made using microsimulation models. In one case, a model of saving was used to project the consumption of baby boomers in retirement. In another case, a model based on aggregates and distributions was used. Finally, there have been statements of tendencies without actual estimates. For example, it might be concluded that the income of the baby boomers in retirement will exceed that of their parents at that age because of several factors that are not quantified.

A second dimension is the group or groups chosen for comparison with the baby boomers. The most frequent comparison is with the generation of the baby boomers' parents at the same age. Cohorts that are slightly older than the baby boomers have been used, as have cohorts that are slightly younger; comparisons generally are made at the same age. Also, baby boomers have been compared with themselves at an earlier age.

A third dimension is the measure used. Income, wealth, and consumption have been used as the item measured. Medians, means, and the percentage "poor" or "poor and near-poor" have been used as measures. The household and the person have been used as the unit of analysis. Different price deflators have also been used.

Finally, different subgroups of the baby boom generation have been examined. Classifications by year of birth (for example, early and late baby boomers) are the most widely used. Marital status, level of income, gender, education, and race are other classifications that have been used.

The consensus for the baby boom generation (assuming no change in policy) appears to be the following. Up to this point, the baby boom generation as a whole has a higher economic status than their parents' generation did at the same ages. They also have a higher economic status up to this point than other cohorts that preceded them. Some subgroups of the baby boom generation, however, do not show higher economic status than their parents' generation.

When it becomes elderly, the baby boom generation as a whole probably will have a higher economic status than their parents' generation has and will have at those ages. This outcome, however, is far from certain. Some subgroups of the baby boom generation may not exceed the economic status of their parents' generation.

It is uncertain whether the baby boom generation as a whole will have enough resources in retirement to maintain their preretirement standard of living, even in the absence of policy changes. If baby boomers increase their saving in the coming years and/or retire at later ages, they could maintain their preretirement standard of living. Some subgroups of the baby boom generation, however, will be able to maintain their standard of living without changing their behavior, while others will not.

Two important general points are made in this article. First, there is a great deal of diversity within the baby boom generation now and it is expected that there will continue to be substantial diversity when retirement age is reached. It is not appropriate to say that all baby boomers will be financially strapped, or that all will be affluent. Second, all projections of the economic status of baby boomers in retirement are subject to a great deal of uncertainty. We simply do not know what the status will be for the group as a whole. We can, however, identify specific subgroups that are likely to do better (worse) than baby boomers in general.

The following section discusses the nature of the questions that are being asked. The ages and size of the baby boom generation are discussed in section III, and diversity within that generation is discussed in section IV. A framework for the analysis of comparisons of the baby boomers with other cohorts is presented in section V; several analyses of the retirement prospects of the baby boom generation are discussed in section VI; and a summary and conclusions are presented in section VII.

## *II. The Nature of the Questions*

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The various questions that have been asked all relate to useful pieces of the overall puzzle. No one of these questions is sufficient. One frequently asked question is whether baby boomers (as a group) are preparing adequately for retirement. But what does that question mean? What does "adequately" mean? What is assumed about the age at which baby boomers will retire? The basic life-cycle model, which is used in some projections of the economic status of the baby boom generation, generally assumes that a person chooses a level consumption path over his or her lifetime. Have previous birth cohorts behaved that way? Do we know? What are the implications if baby boomers choose to consume more during their working years and less during their retirement years? What standard would be applicable in that case? Also, some persons have low consumption for their entire working lives (as a result of low income). Maintaining their previous level of consumption in retirement could mean a poverty level of living. That does not appear to be a sensible standard in such cases.

Another question that has been asked is whether baby boomers in retirement will be better off than their parents (or siblings) at those same ages. Up to the ages attained so far, baby boomers are better off than their parents were at those ages. But is it important whether baby boomers are better off than their parents? We have the idea that each generation

should be better off than the previous one, but is that actually important for policy purposes?

An important question that has received relatively little attention is how the baby boomers in retirement will fare relative to the working population at that time. This relationship is an important aspect of equity that could have a large effect on policy. If baby boomers at that time generally are not well-off financially, but workers are far more affluent (after decades of real wage growth) than the retired population, there could be powerful political pressure to raise retirement benefits. Shifts in the relationship between the incomes of the aged and the nonaged can be interpreted as a factor in past adjustments to benefits.<sup>2</sup>

Another issue that warrants discussion is that there is some uncertainty about what the term “retirement prospects” refers to. There often is no distinction made between elderly age and retirement status. This issue is particularly important in connection with projections of the status of baby boomers. Some analyses examine baby boomers at a specific elderly age (for example, age 65), regardless of the retirement status of persons in the group. At any given age, some persons will be retired and some persons will not be. Examining these persons at an early elderly age (for example, age 65) can produce quite different results from examining them at an older age (for example, age 85) or over the entire elderly age span. A useful question is: What will the status of baby boomers be after they retire, at whatever age that occurs? In such an examination, retirement income types and available wealth, rather than total income including earnings, would be emphasized.

Another, more subtle, aspect of the meaning of retirement prospects involves whether we are more interested in actual outcomes (which reflect various economic choices made by baby boomers) or in what might be called the economic potential of the baby boomers. The former refers to outcomes that result from choices about labor force participation, gifts and possible bequests, and saving. For example, baby boomers presumably could increase their consumption in old age by working to an older age and by giving fewer gifts and planning for smaller bequests. Should a baby boomer who makes those choices be considered to be better off than a person in an earlier cohort who made different choices (for example, early retirement)? One of the problems here is the treatment (or lack thereof) of leisure, which is not given a value.

We are interested in policy-relevant measures. To the extent that the measured economic status of baby boomers in retirement results from their own choices (for example, voluntary early retirement and preference for leisure), their situation is of less direct policy concern. An important policy concern involves baby boomers who will not have “enough” (for example, income and wealth) when they are elderly and therefore might be considered to need additional support from the government. But what is “enough” is vague. Does it mean a standard of living comparable to workers at that time? Does it mean a standard of living comparable to their own standard at younger ages?

It is important to keep in mind that there is great uncertainty

about the accuracy of projections of economic status. The models that have been used all are sensitive to various assumptions that must be made to produce projections. While it is useful to make projections, it is important to recognize the uncertain nature of those estimates when policy choices are considered. As discussed above, even if the projections were error-free, there would still be questions about the appropriate comparisons.

### III. The Ages and Size of the Baby Boom Generation

Although much attention has been paid to the fact that the oldest baby boomers will reach age 65 in 2011, less emphasis has been placed on the long period during which baby boomers will be elderly. The years in which the oldest, middle, and youngest baby boomers attain selected ages are shown in table 1. Baby boomers are age 33-51 in 1997. The youngest baby boomers will not become age 65 until 2029. The oldest baby boomers will not become age 85 (which often is considered “old old” today) until 2031, and the youngest baby boomers will not attain that age until 2049. It is important to keep this long time span in mind as the different assessments are discussed.

As noted earlier, the baby boomers constituted 29 percent of the U.S. population in 1997. According to projections made by the Bureau of the Census, that percentage will fall to 25 percent when the oldest baby boomers reach age 65 in 2011, and to 16 percent when the youngest baby boomers reach age 65 in 2029 (U.S. Bureau of the Census 1996). In that year, baby boomers will be age 65-83. That age group accounted for 11 percent of the U.S. population in 1997.

There is a great deal of uncertainty attached to population projections many years in the future. The population projections mentioned above are based on the “middle series” population projections of the Bureau of the Census; this agency

Table 1.—Ages of baby boomers in selected years

Year	Oldest <sup>1</sup>	Middle <sup>2</sup>	Youngest <sup>3</sup>
1965.....	19	10	1
1975.....	29	20	11
1985.....	39	30	21
1995.....	49	40	31
1997.....	51	42	33
2011.....	65	56	47
2020.....	74	65	56
2029.....	83	74	65
2030.....	84	75	66
2031.....	85	76	67
2040.....	94	85	76
2049.....	103	94	85

<sup>1</sup> Born in 1946.

<sup>2</sup> Born in 1955.

<sup>3</sup> Born in 1964.

also publishes a “highest series” and a “lowest series” (U.S. Bureau of the Census 1996). For example, while the middle series shows 69 million persons age 65 or older in 2030 (a group which includes, but is not limited to, the baby boomers), the highest series shows 79 million and the lowest series shows only 59 million.<sup>3</sup> (There are 34 million persons age 65 or older now.)

For persons age 85 or older in 2050 (a group that is almost entirely baby boomers), the middle series shows 18 million persons, while the highest series shows 31 million and the lowest series shows fewer than 10 million (U.S. Bureau of the Census 1996). (There are fewer than 4 million persons age 85 or older now.) In 2050, projections of the total number of persons of all ages range from 283 million for the lowest series to 519 million for the highest series; the middle series projection is for 394 million persons (U.S. Bureau of the Census 1996). Some population projections differ substantially from those published by the Bureau of the Census (Lee and Skinner 1996). Thus, the degree of uncertainty suggested by the examples cited here may be too low.

For some purposes the percentage distribution of the population by age is more important than the numbers of persons in various age groups. Although the projections of the numbers of persons are quite different in the three Bureau of the Census series, the percentages of the total population are much closer. In all three series, persons age 65 or older in 2030 constitute about 20 percent of the total population (compared with 13 percent now). Persons age 85 or older in 2050 are about 4½ percent of the total population in the middle series, about 3½ percent in the lowest series, and 6 percent in the highest series (compared with about 1½ percent now) (U.S. Bureau of the Census 1996).

#### IV. Diversity

An important point that is emphasized by most analysts is that the baby boom generation is very diverse in terms of economic status. Even within ostensibly similar subgroups there is great diversity. One frequently mentioned classification of baby boomers is by birth year cohort (for example, early vs. late baby boomers). A commonly used measure of economic status is the officially defined poverty rate.<sup>4</sup> Poverty rates for persons for 1995 by age group and by sex are shown in table 2. Poverty rates for early baby boomers (age 45-49) are below those for late baby boomers (age 31-34), with the difference being larger for females than for males.<sup>5</sup>

Table 3 shows poverty rates for baby boom persons by education, gender, and marital status for 1995. Estimates for blacks and for persons of Hispanic origin, two subgroups that historically have had relatively high poverty rates, are also shown. When only education is examined, poverty rates range from 2 percent for persons with at least a bachelor’s degree to 30 percent for persons with less than a high school diploma. Within the latter subgroup, poverty rates range from 21 percent for married black males to 60 percent for unmarried black females.<sup>6</sup> Unmarried females have the highest poverty rates for

every subgroup shown. The subgroups that have the highest poverty rates in 1995 are the subgroups that would be expected to have a relatively high risk of inadequate income during their retirement years.

#### V. Comparisons With Other Cohorts

Before examining the specific studies covered in this article, it is useful to discuss comparisons of the baby boomers with other cohorts. The estimates discussed in this article in most cases compare amounts for the baby boom cohorts with those for other cohorts. Because comparisons of this type are likely to continue for some time, it is useful to discuss a framework for the analysis of these comparisons. Income will be used as the example, although wealth or consumption could be used instead. Comparisons of baby boomers with their parents are natural ones to make, but they are not the only useful ones. There is a series of cohorts, and baby boomers can be compared with those slightly younger than their parents or with those slightly younger or older than the baby boomers (in many cases their siblings). In reality, however, it is more complex than that. The baby boomer generation itself can be separated into two or more cohorts, with a corresponding parent cohort for each. This makes the distinction between baby boomer and parent cohorts less clear since the parents of the youngest baby boomers are only slightly older than the oldest baby boomers (the baby boomer generation includes 19 birth years).

One comparison option that has been chosen by some researchers is to use 5-year or 10-year birth cohorts that coincide roughly with the baby boomer birth years and to compare how those cohorts fared at the same age. This usually is done with income as the measure since surveys that are used for wealth estimates are not carried out as frequently. Surveys used for wealth estimates typically have relatively small samples and therefore estimates made from those surveys are relatively unreliable for small subgroups of the population (such as narrow birth cohorts).

Hypothetical age-income curves for 1965, 1995, and 2025 are shown in chart 1.<sup>7</sup> These curves show a shape that is typical of actual age-income curves—relatively low amounts at the age

Table 2.—Percent of persons poor, by age group and sex, 1995

Age group	Total	Male	Female
All ages.....	14	12	15
31-49.....	10	8	11
31-34.....	12	9	15
35-39.....	10	8	12
40-44.....	9	8	10
45-49.....	7	7	8

Source: Author’s tabulation from the March 1996 Current Population Survey.

extremes and relatively high amounts for the middle age groups. The curve for 1995 shows the baby boom generation (age 31-49 in that year) as segment CD.

The baby boom generation frequently has been compared with their parents' generation at the same age. Their parents' generation is shown in the 1965 curve as segment AB. (The 30-year difference between parents and children is merely a rough approximation for the purpose of explaining the concepts.) In this example, the CD segment is above the AB segment, denoting higher income for the baby boom generation than for their parents' generation at those ages.

The parents' generation in 1995 is shown as segment EF (ages 61-79). One question that has been discussed is whether the baby boom generation will have higher incomes in their elderly years than their parents' generation does. The curve shown for 2025, of course, is hypothetical. According to this arbitrary example, the income of the baby boom generation will exceed that of their parents' generation. This can be seen by the fact that segment GH in the 2025 curve is above segment EF in the 1995 curve. Of course, the curve for 2025 could be below the 1995 curve, and the shape could be different.

The change in income from 1965 to 1995 for the parents' generation can be examined using segments AB and EF. For example, the oldest edge of the parents' generation (B, which represents age 49 in 1965, and F, which represents age 79 in 1995) shows a decline in income between those 2 years in this stylized example. In contrast, the youngest edge of the parents' generation (A, age 31 in 1965, and E, age 61 in 1995) shows an

increase between the 2 years. The difference between the ends of the generation can be explained by the shape of the usual age-income curve. What the analogous comparison would show for the baby boom generation (D compared with H for the oldest baby boomers and C compared with G for the youngest), of course, is not known yet.

In addition to the curves shown in chart 1 that are 30 years apart, a curve for each year in between could be added and the baby boom generation could also be compared with groups of a similar age that are less (or more) than 30 years older. It will be useful to keep chart 1 in mind when various analyses are discussed.

## VI. Selected Studies of Baby Boom Retirement Prospects

Several studies of the retirement prospects of the baby boom generation are discussed next. Only a few relatively recent studies that illustrate the range of approaches used in making estimates are covered; there is no attempt to discuss each of the many studies made. The studies discussed are by the Congressional Budget Office (CBO); Easterlin, Schaeffer, and Macunovich (ESM); the American Association of Retired Persons (AARP); Bernheim; and Kotlikoff and Auerbach.<sup>8</sup> Those studies are separated into two groups: (A) those in which estimates were limited to actual amounts of income and wealth up to the ages attained by the baby boomers (CBO,

Table 3.—Percent of persons poor, ages 31-49, by education and other demographic characteristics, 1995

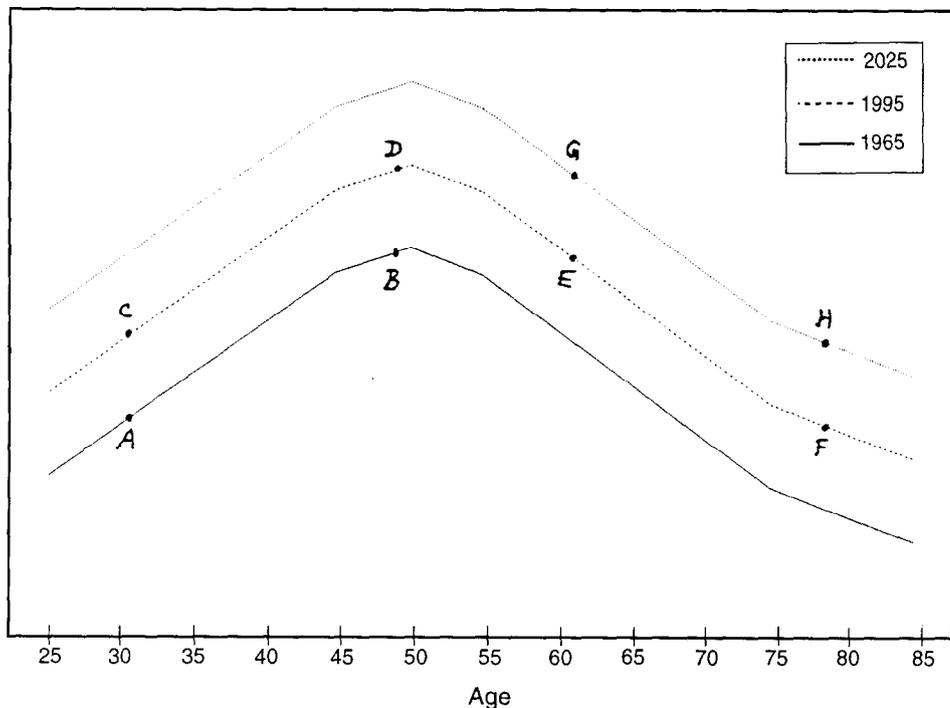
Other characteristic	Education				
	All levels	Less than high school diploma	Only high school diploma	Some college, no bachelor's degree	Bachelor's degree or more
Total, ages 31-49.....	10	30	10	7	2
Male					
Married.....	5	22	6	3	1
Black.....	7	21	8	5	1
Hispanic origin.....	19	30	15	6	5
Not married.....	13	26	14	9	4
Black.....	18	25	21	13	4
Hispanic origin.....	23	37	16	15	2
Female					
Married.....	5	24	5	3	1
Black.....	7	30	7	5	(1)
Hispanic origin.....	18	31	11	7	5
Not married.....	23	53	25	18	6
Black.....	34	60	37	26	9
Hispanic origin.....	39	58	31	22	10

<sup>1</sup> Rounds to zero.

Source: Author's tabulation from the March 1996 Current Population Survey.

Chart 1.—Hypothetical age-income curves

Constant dollar median income



ESM); and (B) those that made projections of the income or consumption of the baby boomers in the future, such as when they will be elderly (AARP, Bernheim, Kotlikoff and Auerbach). The studies in group B provide estimates that are more uncertain, but more directly relevant to the retirement prospects of the baby boom generation, than those in the group A studies. The estimates from these five studies are briefly summarized in table 4.

### A. Estimates of Actual Amounts

*Congressional Budget Office.*—The Congressional Budget Office (1993) compared the actual income and wealth of the baby boom generation with that of the baby boomers' parents' generation at the same age and discussed the prospects for the economic well-being of the baby boomers in retirement. CBO found that the baby boomers in retirement generally should be better off than their parents, but some subgroups might not be. This report was written by Joyce Manchester.<sup>9</sup>

CBO compared the incomes of baby boomers in 1989 with the incomes of their parents at the same age in 1959. The two age groups examined were the early baby boomers (age 35-44) and the late baby boomers (age 25-34). Household cash income before tax, with households classified by age of householder, was used as the income measure. The Personal Consumption Expenditure (PCE) implicit price deflator from the National Income and Product Accounts was used to put all income amounts in 1989 dollars. The income data for 1959 were from the 1960 Decennial Census, while the data for 1989 were from the March 1990 Current Population Survey (CPS).

For the 25-34 age group, median constant dollar household income rose 35 percent from 1959 to 1989. The rise for the 35-44 age group was even higher—53 percent. When income amounts were adjusted for differences in household size using an equivalence scale derived from the weighted average poverty thresholds, the increases in median income were even larger—75 percent for the 25-34 age group and 82 percent for the 35-44 age group. The higher increase for adjusted income resulted from a decline in average size of household.

This is only a rough comparison of baby boomers and their parents for several reasons. First, although the 25-44 age groups in 1989 correspond quite well with the ages of baby boomers in that year, some baby boomers were in households headed by persons in other age groups. Those baby boomers are not included in the analysis of these age groups. Second, the comparisons are of the

same age groups 30 years apart. Some parents of baby boomers would not fall into those age groups in 1959. A general idea of the income differences between baby boomers and their parents can be obtained despite the simplifications that are typically required in analyses of this topic.

CBO also looked beyond median incomes to changes in different parts of the income distribution. For both age groups, the lower part of the distribution showed smaller increases in income than the upper part did from 1959 to 1989 (using unadjusted incomes). The link between baby boomers and their parents is weakened in these comparisons because baby boomers and their parents may not have been in the same part of the income distribution at the same age. Relatively low (high) income baby boomers are compared with relatively low (high) income members of their parents' generation. Also, members of a given cohort move among parts of the income distribution as they age.

CBO examined income change for several socioeconomic subgroups of the two age groups—classifications by marital status of the householder, number of children in the household, education of the householder, and relative income level. Gender differences were not shown, presumably because of the household basis used.

When comparing the incomes of these age groups in different years it is important to recognize that the composition of the groups changed over time. The percentage of households with an unmarried householder rose from 14 percent in 1959 to 46 percent in 1989 for the 25-34 age group and from 16 percent to 38 percent for the 35-44 age group.

With the exception of households in which the householder had no high school degree, all subgroups shown had increases in median income from 1959 to 1989. Median income fell by 12 percent for the group with no high school degree in the 25-34 age group and was essentially unchanged for that group in the 35-44 age group. It should be noted, however, that households in which the householder had no high school degree accounted for a much smaller percentage in 1989 than in 1959. Therefore, this category changed from a mainstream one in 1959 to a (lower) fringe group in 1989. The income changes should be interpreted in that context.

CBO also examined the net worth of baby boomers and that of their parents' generation at the same age. That comparison was between 1989 and 1962 for households headed by persons age 25-34 and 35-44. The 1989 data were from the Survey of Consumer Finances and the 1962 data were from the Survey of Financial Characteristics of Consumers. The CBO comparisons used median household wealth (in constant dollars) and the median ratio of wealth to income for households. The definition of wealth included amounts in IRA and Keogh plans and the value that can be borrowed against employer-provided pension accounts, as well as financial assets, equity in owner-

occupied homes, equity in vehicles, business equity, and other assets. Social Security wealth and the remainder of pension wealth were excluded from the definition. No adjustment was made for changes over time in average household size (that is, there was no equivalence scale adjustment).

Median constant dollar wealth rose for all households, married head households, and unmarried head households in both age groups from 1962 to 1989. When income quintiles (or in some cases, thirds) were examined, median wealth rose in most cases in both age groups. The median ratio of wealth to income also rose for most groups.

For young households that owned their own homes, the median ratio of wealth to income rose from 1962 to 1989. The median ratio rose from 0.7 to 1.1 for the 25-34 age group and from 1.6 to 1.9 for the 35-44 age group. For other households, there was only a small increase for the 25-34 age group and a decrease for the 35-44 age group. The ratios, however, were small in all of those cases, so these changes were not very important.

When looking at the prospects for the economic well-being of baby boomers in retirement, CBO made no estimates of the future income or wealth of that group, but discussed factors that

Table 4.—Summary of estimates

Study	Type of estimate	Principal comparison group	Principal measure	Subgroups of boomers shown	Summary of retirement prospects
CBO (1993).....	Actual amounts	Parents	Income, Wealth	Birth year, Marital status, Number of children, Education, Income level	Generally should be better off than parents; some subgroups might not be.
Easterlin et al. (1993)...	Actual amounts	Parents, Other cohorts	Income	Birth year, Income level	Better off than parents and other cohorts at same age, but gap might be narrowing.
AARP (1994).....	Projections made using microsimulation	Elderly in 1990	Income	Birth year, Marital status, Income level, Education, Race, Gender	Generally should be better off than elderly in 1990; some subgroups might not be. Emphasis on diversity.
Bernheim (1993).....	Projections made using optimizing model of consumer behavior	Themselves (at younger ages)	Saving	Presence of pension, Income level, Marital status, Gender	Generally saving too little to maintain preretirement consumption.
Kotlikoff and Auerbach (1994).....	Projections made using model based on aggregates and distributions	Current persons age 65, Themselves (at younger ages)	Income, Consumption	Birth year	Generally poorly prepared financially for retirement. Youngest baby boomers expected to consume less than today's retirees.

would be important. They discussed both economic factors (for example, changes in real wages, the saving rate) and what they called demographic factors (for example, life expectancy, ratio of workers to retirees).

It was CBO's view that real wages will rise during the next 20-40 years, but that the rate of growth will be less than that of the 1950s and 1960s. They did not choose a specific rate.

CBO discussed several factors that might influence both men and women to retire later. The Social Security retirement age will rise to age 67, and the Social Security earnings test has been made more liberal. Also, part-time work, which may suit older workers better, is becoming more prevalent.

According to CBO, Social Security and private pensions are likely to remain important sources of retirement income for the baby boom cohorts. Private pensions will be particularly important for high-income persons and will be increasingly important for women. More persons may be eligible for pensions, but average pension amounts may not increase and could decline.

The role that housing wealth will play in the retirement resources of the baby boom generation is not clear. The rapid gains in real housing prices that occurred in the 1970s and 1980s are not likely to be repeated for baby boomers. Some analysts expect a decline in the real value of homes (for example, Mankiw and Weil 1989).

CBO raised the question of whether home equity should be included in considering the resources to finance the consumption of the baby boomers in retirement. It is unclear to what extent today's aged use home equity to finance their consumption. Even if today's aged do not use home equity to finance consumption, however, it does not mean that baby boomers will not use it. Many of today's elderly are doing well financially and therefore do not need to use home equity. Since they prefer not to use it, they do not. If baby boomers do worse financially than today's aged in retirement, the baby boomers may choose to use home equity to finance consumption, even if they prefer not to use it. There is some concern, perhaps, about the distribution of home equity relative to the need for its use. Those who would like to use it to finance consumption may not have much home equity.

Finally, CBO concludes that baby boomers with low educational attainment, those who are unmarried, and those who were not able to afford to buy a house are the ones most likely to have less income than their parents' generation. Specific groups at risk include late baby boomers with less than a high school diploma, and late baby boomers who are single and have children. Important general sources of risk for baby boomers in retirement are uncertain medical expenses, the size of education expenses for their children, and uncertainty about average life expectancy when they reach retirement age.

CBO also concludes that much uncertainty about the financial situation of baby boomers in retirement remains. Much of the working life of baby boomers remains in the future. Also, baby boomers will have some time to make choices that can improve their financial status in retirement.

This author prepared estimates of income that are similar to

those that appear in the CBO report, but that include a more recent year. My estimates appear in table 5 and chart 2, which show median adjusted family unit income of persons by age of person in constant 1994 dollars. The baby boomer cohorts are ages 30-34, 35-39, 40-44, and 45-49 in 1994. The assumed baby boomer parents' cohorts are those same age groups in 1964.

My estimates are not identical to those in the CBO report because my estimates are for persons by the age of the person, rather than for households. I use family unit income adjusted using an equivalence scale based on the official poverty thresholds. The unit's adjusted income is assigned to each person in the unit. The experimental CPI-UX1 price index was used to put incomes in constant 1994 dollars. The differences between the methods, however, should not be major.

The oldest baby boomers (age 45-49 in 1994) show median income that is 66 percent above the median for that age group in 1964 (assumed to be their parents). The percentage increases for the other baby boomer cohorts are 54 percent for those age 40-44, 59 percent for those age 35-39, and 51 percent for those age 30-34. There is some tendency for those percentages to be higher for the early baby boomers than for the late baby boomers, but the tendency is not strong. These results, which show the baby boomers at a slightly older age, are consistent with the CBO results.

*Easterlin, Schaeffer, and Macunovich.*—Easterlin, Schaeffer, and Macunovich (1993) compared the actual incomes of baby boomers primarily with those of persons 25 years older (assumed to be the baby boomers' parents' generation).<sup>10</sup> ESM separated the baby boom generation into four birth cohorts: 1946-50, 1951-55, 1956-60, and 1961-65 (those born in 1965 actually were not in the baby boom generation). Data from the CPS were used in the income comparisons. ESM generally found that the baby boomers were better off than their parents and other cohorts at the same age, but that the gap might be narrowing over time.

ESM used household income per adult equivalent for each person in the household as the income measure. An equivalence scale that assigned a value of 1.0 for the first adult (person age 15 or older) in the household, a value of 0.8 for all other adults, a value of 0.4 for the first child, and a value of 0.3 for all other children was used. The income concept used was total money income before tax. The CPI-UX1 was used to convert nominal dollar amounts into constant dollar amounts. They used income data for the 1964-89 period at 5-year intervals.

Estimates for pseudo-cohorts were constructed by taking amounts for the appropriate years. These are pseudo-cohorts, rather than actual cohorts, because the estimates for the different years are not for the same persons, but are for birth cohort groups. As is well-known, estimates for pseudo-cohorts should be interpreted with caution because of the effects of immigration, death, and institutionalization, as well as sampling error.

Based on their most recent data, ESM find that the income of each baby boomer birth cohort was higher than that of the

corresponding parents' birth cohort at the same age. Median income for the baby boomers was roughly two-thirds higher than for their parents. The difference was slightly higher for the early baby boomers and slightly lower for the late baby boomers.

Based on the life-cycle income patterns that they found, ESM conclude that the income of the baby boomers in retirement probably will be higher than that of their parents in retirement. This conclusion, however, is based primarily on the fact that life-cycle income patterns up to the observed ages of the baby boomers are not very different from those of earlier cohorts. The relevant question is whether retirement income for the baby boomers will bear about the same relationship to their preretirement income as the retirement income of their parents (or some other cohort) bears to their preretirement income. ESM do state that the improvement of the income of the baby boomers over their parents' income may decline as the baby boomers age, but they conclude that only a severe economic downturn could make the income of the baby boomers in retirement below that of their parents in retirement.

ESM also discuss wealth. Saving rates for the baby boomers appear to be similar to those of cohorts that preceded them in recent decades. Rates of home ownership generally are similar for the baby boomers and their parents. In terms of net worth, median net worth for the early baby boomers was more than twice the median for their parents' cohort. In general, wealth and income improved by roughly the same percentage for the baby boomers compared with their parents' generation.<sup>11</sup>

Differences by income class also are discussed by ESM. They rank members of each cohort by adjusted income and compare corresponding deciles or quintiles in different cohorts. As in the case of the CBO report, the link between baby boomers and their parents is weakened in these comparisons because baby boomers and their parents may not have been in the same part of the income distribution at the same age.

Table 5.—Median adjusted family unit income of persons, by age group, in 1994 dollars

Age group	1964	1994	Ratio 1994/1964
25-29.....	\$14,700	\$21,000	1.43
30-34.....	14,500	21,900	1.51
35-39.....	15,200	24,200	1.59
40-44.....	17,200	26,500	1.54
45-49.....	18,900	31,400	1.66
50-54.....	19,800	32,600	1.65
55-59.....	18,900	28,900	1.53
60-64.....	16,100	23,800	1.48
65-69.....	11,400	19,600	1.72
70-74.....	9,200	17,200	1.87
75-79.....	8,100	15,600	1.93
80-84.....	7,900	13,700	1.73

Source: Author's tabulations from the March 1965 and March 1995 Current Population Surveys.

For relatively high-income persons, baby boomers have much higher income than their parents' cohort did. For low-income persons, however, the differences are much smaller. Differences between early and late baby boomers are also smaller for low-income persons than for high-income persons.

ESM conclude that, based on both income and wealth, baby boomers are doing considerably better than their parents' cohort did at similar ages and that it is likely that the differential will continue for the retirement of the baby boomers. The low-income late baby boomers are particularly at risk, however, of falling behind corresponding persons in their parents' cohort.

This author's approximate update of ESM's pseudo-cohort income comparisons appears in table 6. The definitions are slightly different than those used by ESM, but the general results should be the same for the same years. The principal differences are that I use an equivalence scale based on the official poverty thresholds, rather than the scale described above, and I use family units, rather than households. ESM's estimates stopped with income year 1989, but I was able to produce estimates through income year 1995. My estimates are for 1970 through 1995, with observations every 5 years.

Each row in table 6 shows the adjusted family unit median income of persons for one 5-year birth cohort at different ages. There are up to six observations for each cohort. Incomes for persons below age 20 are not shown here because those incomes primarily reflect the incomes of the parents, rather than the income of the person in the birth cohort. For the purposes of these estimates, the baby boom is defined as the four birth cohorts from 1946 through 1965 (highlighted in the table). Elsewhere in this article, persons born in 1965 are not considered as part of the baby boom, but it is convenient here to examine 5-year birth cohorts. The oldest baby boom group was age 45-49 in 1995. Each column shows the incomes of different cohorts at the same age.

We will compare the baby boom cohorts with the cohorts at the same age 25 years earlier (these older cohorts can be interpreted as the parents of the baby boomers) and with one cohort more recent than their parents (but still older than the baby boomers). We also will compare the four baby boom cohorts with each other.

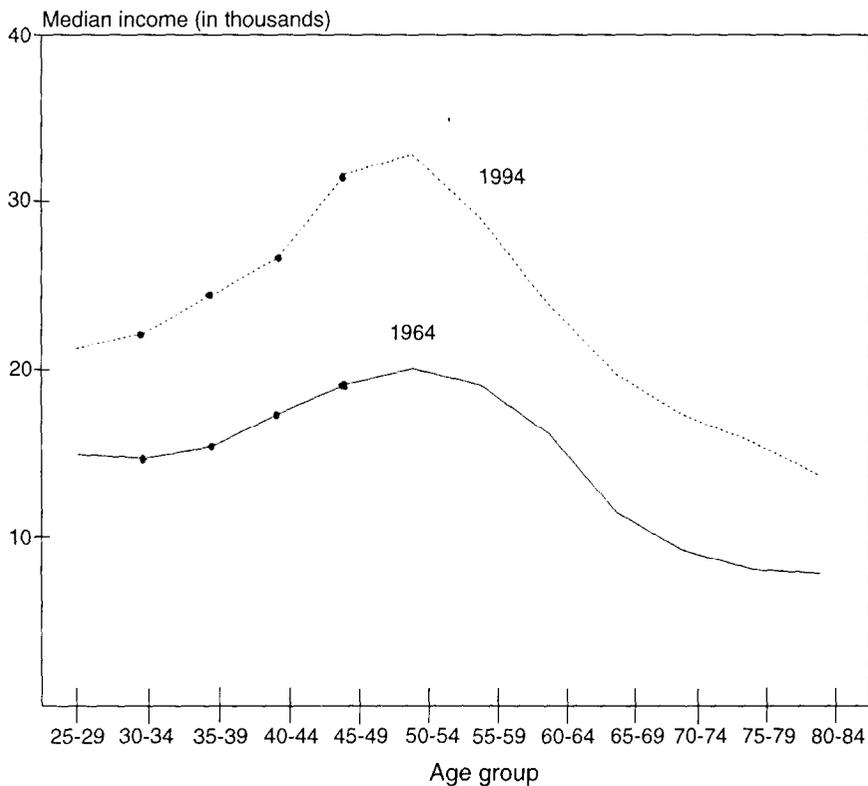
Comparing the baby boom cohorts with their parents' generation, for all four baby boom cohorts, the income of the baby boomers exceeds the income of their parents' generation. At age 45-49, the median income of the 1946-50 cohort exceeds the median of the 1921-25 cohort by 31 percent (that is, \$32,400 compared with \$24,700). At age 40-44, the income of the 1951-55 cohort exceeds the median of the 1926-30 cohort by 28 percent. At age 35-39, the income of the 1956-60 cohort exceeds that of the 1931-35 cohort by 32 percent. Finally, at age 30-34, the income of the 1961-65 cohort exceeds that of the 1936-40 cohort by 22 percent. Thus, the youngest of the baby boom cohorts shows the smallest increase in income compared with the income of the parents' generation, but the comparisons are at different ages.<sup>12</sup>

There is also evidence from other estimates I made that suggests a narrowing of differentials. Estimates at 5-year

intervals from income year 1964 to income year 1994 were also prepared. Comparisons of 5-year income changes for baby boomer and parent cohorts can be made using those estimates. In general, 5-year income increases at the same ages were much higher for the parent cohorts than for the baby boomer cohorts. From ages 40-44 to 45-49, median income for the 1946-50 cohort rose by 8 percent and income for the 1921-25 cohort rose by 38 percent. From ages 35-39 to 40-44, the rise was 5 percent for the 1951-55 cohort and 36 percent for the 1926-30 cohort. From ages 30-34 to 35-39, income for the 1956-60 cohort rose by 3 percent and income for the 1931-35 cohort rose by 28 percent. From ages 25-29 to 30-34, income for the 1961-65 cohort fell by 6 percent, while income for the 1936-40 cohort rose by 24 percent. These comparisons suggest a narrowing of the differentials for all four baby boomer cohorts.<sup>13</sup>

Comparing the baby boom cohorts with each other, generally we find little change in median income from the earliest baby boomers to the latest baby boomers (table 6). At age 20-24, median income rose about 9 percent from the 1946-50 cohort to the 1956-60 cohort, but fell in the 1961-65 cohort so that that cohort's median was only about 2 percent above the median for the 1946-50 cohort.<sup>14</sup> Differences also were small for the 25-29 and 30-34 age groups. For the 35-39 age group, estimates are available only for the three oldest baby boom cohorts; those cohorts show only small differences also. Cohorts prior to the baby boom generally showed a substantial increase in real median income with each succeeding 5-year group.

Chart 2.—Median adjusted family unit income of persons, by age group, in 1994 dollars



As more time passes, the baby boom cohorts appear to be experiencing a declining advantage over the 1941-45 cohort that immediately preceded them. For example, at age 45-49, the median for the 1946-50 baby boom cohort was only \$200 (less than 1 percent) higher than the median for the 1941-45 cohort; at age 35-39, the median for the 1946-50 cohort was \$1,600 (7 percent) higher than the median for the 1941-45 cohort. ESM had speculated that that differential was narrowing and the estimates for the additional year seem to confirm that speculation.<sup>15</sup>

It is also useful to compare poverty rates. My pseudo-cohort tabulations from the CPS allow a comparison of poverty rates among the four baby boom birth cohorts at ages 20-24, 25-29, and 30-34. At each of those ages, poverty rates rose in moving from the oldest to the youngest baby boomer cohorts. For the 20-24 age group, the poverty rate was about 10 percent for the 1946-50 birth cohort and 16 percent for the 1961-65 birth cohort. At age 25-29, the poverty rate was about 8 percent for the oldest baby boomers and 13 percent for the youngest. At age 30-34, the rate was about 10 percent for the oldest baby boomers and 12 percent for the youngest. The differences appear to be shrinking as the cohorts age. Looking at rates by gender, according to published estimates (U.S. Bureau of the Census 1982), poverty rates were 7 percent for males and 12 percent for females in 1980 for the 30-34 age group; both of those estimates were below the 1995 estimates shown in table 2 for the 31-34 age group (9 percent and 15 percent, respectively). For each baby boomer birth cohort, there is a tendency

for the poverty rate to fall as the cohort ages. That tendency is least pronounced in the oldest cohort.

### B. Projections

*American Association of Retired Persons.*—The American Association of Retired Persons (1994) presents micro-simulation estimates of the income of the baby boomers in 2030, when the cohort will be ages 66-84.<sup>16</sup> AARP projects that most members of the baby boom generation will have higher real incomes in 2030 than the corresponding elderly group had in 1990.<sup>17</sup> The principal estimates shown are based on “mainstream” assumptions about the performance of the economy and on the assumption that there will be no change in current government programs (for example, Old-Age, Survivors, and Disability Insurance). A few estimates based on more pessimistic or optimistic assumptions about the performance of the economy and about mortality also are shown. AARP emphasizes the expected diversity in the retirement income of the baby boomers.

AARP presents four conclusions. First, within the baby boom generation, an economic underclass that will remain in that status in retirement appears to be emerging. Blacks, single women, and those with little education constitute relatively high proportions of that underclass. Second, the retirement incomes of younger baby boomers are more sensitive to differences in the future path of the economy than are the retirement incomes of the older baby boomers, primarily because the younger group has a higher proportion of its working life remaining. Third, subgroups of the baby boom generation that have low incomes today are likely to also do relatively poorly in retirement. Finally, because of general uncertainty, all members of the baby boom generation face some risk of inadequate income in retirement.

In general, in 1990 baby boomers who were white, not of Hispanic origin, college educated, or in the older half of the generation were faring better than those who were black, of Hispanic origin, not married, had less than a high school education, or were in the younger half of the generation.

The AARP projections were based on the Pension and Retirement Income Simulation Model (PRISM).<sup>18</sup> PRISM is a microsimulation model that predicts, for individuals, various economic characteristics (for example, labor force participation, wages, pension coverage) and several life events (for example, marriage, divorce, death). Broad economic and demographic trends have important effects on these predictions. The base case for the economy used here assumes that real gross national product will rise 1.8 percent per year, the potential labor force will rise slowly at 0.4 percent per year from 2000 to 2010 and only 0.2 or 0.3 percent per year from 2010 to 2030, consumer prices will rise by 4.0 percent per year, and real wages will rise by 1.1 percent per year.

According to the AARP projections, the vast majority of baby boomers will be retired in 2030. Baby boomers are projected to have a real median income 70 percent higher than that of the corresponding age group in 1990. Causes of this increase cited by AARP include the assumed growth in real

wages, the increase in women's labor force participation that will produce higher retirement income, and more persons receiving pension income.

Substantial diversity in the incomes of subgroups of the baby boom cohort is expected in 2030. Married baby boomers are projected to have a higher median income than single baby boomers, and late baby boomers are projected to have a higher median income than early baby boomers. Late baby boomers will have higher incomes because they are younger and more of them will still be working and/or married than is the case for early baby boomers. (This does not mean that at a given age late baby boomers necessarily would have higher incomes than early baby boomers.) Single baby boomers with less than a high school education are projected to have a median family income that is about one-third of the median for married college graduates. (Note that there is no adjustment for differential needs based on size of family unit).

AARP also presents projections of the percentage of baby boomers who will be poor (that is, with family income below the official poverty threshold, which is held constant in real terms over time) or near poor (that is, with family income from 100 percent to 150 percent of the official threshold). In 2030, about 12 percent of female baby boomers and 2.5 percent of male baby boomers are projected to be poor or near poor. More than one-third of never married, divorced, or separated women are projected to be poor or near poor, compared with about 5 percent of men in those marital status categories.

In 2030, about three-fourths of baby boomers are projected to receive Social Security benefits and pension income and asset income. From 1990 to 2030, the composition of income received by the 66-84 age group will not change very much. Only pension income shows a nontrivial increase, and that rise is modest (from 20 percent to 24 percent of total income). Social Security's share is essentially unchanged at 38 percent in 2030. The shares of asset income and earnings are projected to decline slightly—to 23 percent for the former and to 14 percent for the latter.

Table 6.—Median adjusted family unit income of persons, by birth cohort and age group, in 1995 dollars

Birth cohort	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74
1921-25.....						\$24,700	\$27,400	\$28,900	\$24,300	\$21,600	\$18,600
1926-30.....					\$21,400	25,600	29,600	28,900	25,400	20,700	
1931-35.....				\$19,000	22,400	28,400	30,600	30,400	25,800		
1936-40.....			\$18,700	20,900	25,100	29,500	32,100	30,800			
1941-45.....		\$20,000	21,000	23,400	26,700	32,200	33,000				
<b>1946-50.....</b>	<b>\$19,600</b>	<b>22,000</b>	<b>22,800</b>	<b>25,000</b>	<b>28,500</b>	<b>32,400</b>					
<b>1951-55.....</b>	<b>20,300</b>	<b>22,400</b>	<b>23,000</b>	<b>25,600</b>	<b>27,300</b>						
<b>1956-60.....</b>	<b>21,300</b>	<b>22,600</b>	<b>23,300</b>	<b>25,000</b>							
<b>1961-65.....</b>	<b>19,900</b>	<b>22,700</b>	<b>22,800</b>								
1966-70.....	20,700	22,400									
1971-75.....	19,300										

Source: Author's tabulations from the March 1971, 1976, 1981, 1986, 1991, and 1996 Current Population Surveys.

In 2030, Social Security benefits are projected to account for more than half of the income of 56 percent of baby boomers; this is about the same as the percentage shown by the elderly in 1990. Social Security benefits are projected to constitute about 80 percent of the income of the bottom income quintile of baby boomers.

AARP also compared the incomes of the same persons in 1990 and 2030 in order to examine the extent of shifting between high and low incomes. This would appear to be a severe test for the accuracy of any microsimulation model because it is less likely that estimation errors will offset each other than in simple subgroup comparisons. Baby boomers were separated into three economic status classes in both 1990 and 2030: (1) welfare ratio of 4.0 or more;<sup>19</sup> (2) welfare ratio of 1.5 to 3.99; and (3) welfare ratio below 1.5.<sup>20</sup> These income groups are fixed in terms of real income (since the poverty thresholds are fixed in real terms) and therefore the percentage of persons does not have to be the same in each income group in the 2 years.

Much shifting among these groups is projected. Less than 20 percent of the lowest income group in 1990 is projected to be in the lowest group in 2030. Only slightly more than half of the highest income group in 1990 is projected to remain in that group in 2030.

AARP also made projections using optimistic and pessimistic assumptions in place of the moderate assumptions used in the base case projections. The differences between these estimates provide some indication of the sensitivity of the estimates to these assumptions. Median income for various marital status, race, Hispanic origin, and birth cohort subgroups was 9 percent to 36 percent lower in the pessimistic case than in the base case and was 11 percent to 53 percent higher in the optimistic case than in the base case.

Percentages of persons who are projected to be poor or near poor in 2030 are also quite sensitive to these assumptions. For all baby boomers, the percentages range from 5 percent (optimistic) to 7 percent (base) to 11 percent (pessimistic). For blacks, the percentages range from 8 percent to 16 percent to 20 percent, and for single persons the range is from 10 percent to 16 percent to 23 percent.

*Bernheim.*—Bernheim (1993, 1992) made estimates of the adequacy of the saving of the baby boom generation based on their saving behavior so far.<sup>21</sup> He estimated the stock of savings (that is, wealth) baby boomers would need to maintain consumption in retirement that was “adequate” (relative to preretirement consumption). Then he compared an estimate of the saving rate of baby boomers up to now with the estimated rate needed, using estimated asset accumulation paths. He assumed that home equity would not be used to finance consumption in retirement, but he also assumed that savings would be used only for consumption in retirement and not for other purposes (for example, college education of children). Bernheim found that baby boomers generally are saving too little to maintain preretirement consumption.

When home equity was excluded, the baby boomer saving rate was only 34 percent of the required rate. Subgroups based

on marital status, gender, income level, and pension coverage also were examined. The percentage varied among the subgroups examined, from 16 percent (for high-income single women without pension) to 49 percent (for relatively low-income married couples with pension). When home equity was included as a source of consumption in retirement, the baby boomer saving rate was 84 percent of the required rate.

Bernheim constructed a life-cycle simulation model that provided estimates of the amount of savings needed to sustain consumption in retirement at a level consistent with pre-retirement consumption. The information used included data from the CPS and from the Survey of Consumer Finances. These estimates were made for several subgroups of the baby boom generation based on marital status, gender, income level, and the presence of pension coverage. Then an estimate of savings by the baby boom generation up to now was made using data from a survey of amounts of wealth. Finally, estimates of the saving rate up to now were compared with the simulated rate needed.

Bernheim’s data on wealth currently held by baby boomers were obtained from a telephone survey conducted by the ICR Survey Research Group; it should be noted that survey data on wealth ordinarily are not very accurate, and I would expect these data to suffer from substantial error also. Underreporting of amounts would bias the baby boomers’ amount of savings downward, but the bias would have to be very large to change the general nature of the results.

Also, Bernheim’s data are for wealth at a particular time, not for saving (that is, change in wealth). He is forced to make many assumptions in order to obtain estimates of saving from those data. One would expect his results to be sensitive to those assumptions.

Bernheim also does not take inheritances into account. Potential inheritances for baby boomers have been estimated at roughly \$10 trillion (Avery and Rendall 1993). Although that amount seems large, when spread over the large baby boom generation it would have only a minor effect.

Bernheim’s model is a life-cycle model, with the important difference that (in his principal estimates) home equity is excluded from wealth. Thus, retired baby boomers are assumed to not use home equity to finance consumption. This assumption, in some sense, is inconsistent with the life-cycle model, in which all types of wealth are treated the same way. On the other hand, personally I find the argument that consumers treat different types of wealth differently (as discussed by Thaler (1990)) to be persuasive. Therefore, I believe that omitting home equity from such estimates is not necessarily inappropriate. I do believe, however, that simulations such as those carried out by Bernheim are quite sensitive to assumptions that must be made.

Gale (1997) pointed out that Bernheim’s finding that baby boomers were saving only one-third of the amount necessary to retain their preretirement standard of living, even if it is accurate, generally does not mean that their standard of living in retirement would be only one-third of their preretirement standard. It would be true that private saving would be only

one-third of the needed amount of private saving. Private saving, however, is only one of the components of retirement resources, and for some persons it is only a small part of the total. Therefore, the reduction in the standard of living generally would be smaller and would be very small if private saving were a small part of the person's retirement resources.

Gale (1997) presents his own estimates of saving adequacy, limited to married households with a working husband. These estimates are based on tabulations from several years of the Surveys of Consumer Finances and on a measure of needed savings derived from the Bernheim model. Gale finds that about half of these baby boomer households were saving adequately when home equity was not counted. Including half of housing equity raises the figure to about 65 percent, and including all housing equity brings the figure up to about 70 percent.

In Gale's view, the median shortfall in savings is not very large. Using data for 1992 he finds that, for those with a shortfall, the median shortfall for all ages is \$22,000 and the shortfall for baby boomer households is about \$13,500 when home equity is excluded. It should be kept in mind that Gale's estimates are only for a particular type of household, one that could be saving more than the typical household does.

*Kotlikoff and Auerbach.*—Kotlikoff and Auerbach (1994) presented projections of mean income and consumption at age 65 for three birth-year cohorts—1946 (the oldest baby boomers), 1955 (the middle of the baby boom generation), and 1964 (the youngest baby boomers). They showed projections excluding and including several alternative policy changes. The principal comparisons were with persons currently age 65 and with baby boomers at a younger age. Kotlikoff and Auerbach found that baby boomers generally are poorly prepared financially for retirement because of inadequate saving. The youngest baby boomers are expected to consume less than current retirees.

Within the framework of generational accounting, government projections of taxes, transfers, labor income, and pension income form the basis of these estimates. Where those projections did not extend far enough in the future, tax and transfer aggregates were assumed to grow with productivity and demographic change. Tax and transfer aggregates were distributed to generations based on information in the Survey of Income and Program Participation, the Consumer Expenditure Survey (CES), and the CPS. For 1992, estimates of income types other than net transfers and of consumption generally were obtained by distributing 1992 aggregates to individuals using cross-section age-income and age-consumption relationships derived from CPS and CES data. Consumption was projected by assuming that individuals will save the same proportion of their disposable income that individuals of the same age save now. Aggregate wealth in 1992 was distributed according to information in the 1983 Survey of Consumer Finances. Then, for each of the three baby boomer cohorts, the change in assets each year was set equal to the saving (that is, income minus consumption) in that year.<sup>22</sup>

Assuming no policy change, the oldest baby boomers at age

65 are projected to have consumption that is higher than the cohort's consumption in 1992 (at age 46) and higher than the consumption of 65-year-olds in 1992 if medical transfers are included in consumption. If those transfers are excluded, the oldest baby boomer cohort will have lower consumption in 2011 than in 1992, but will still have higher consumption than those who are age 65 in 1992.<sup>23</sup>

The projections for the youngest baby boomers are less favorable. When consumption excluding medical transfers is examined, the youngest baby boomers are projected to have slightly lower consumption at age 65 than today's 65-year-olds. The youngest baby boomers' consumption is projected to be lower than that of the oldest or the middle baby boomers at each age. The youngest baby boomers' consumption at age 65 is projected to be higher than their current consumption (at age 28).

Kotlikoff and Auerbach also project how well these different cohorts will fare if adjustments to policy are made. Each alternative policy change (an increase in taxes and/or a reduction in benefits) reduces the future consumption of the baby boomers.

Kotlikoff and Auerbach also project the percentage of each baby boomer cohort that will have lower consumption than the median consumption of those age 65 in 1992, assuming no policy change (and excluding medical transfers). It is assumed that the relative distribution of consumption at age 65 within a cohort is the same for every cohort; that distribution is estimated from the Consumer Expenditure Survey. The projections show that 40 percent of the oldest baby boomers, 42 percent of the middle baby boomers, and 50 percent of the youngest baby boomers will have consumption at age 65 that is less than the median consumption of those age 65 in 1992. These percentages rise, of course, if fiscal adjustments are made.

In summary, Kotlikoff and Auerbach conclude that the three age cohorts that they examine will just be able to maintain their living standards when they reach age 65 if there are no changes in policy. Note that baby boomer cohorts are being compared at age 65 with themselves at different ages (that is, age in 1992). If policy changes are required, these cohorts are saving too little for retirement. The 1964 cohort is projected to have a lower standard of living than the 1946 cohort at each age.

## *VII. Summary and Conclusions*

Different approaches to assessing the retirement prospects of the baby boom generation can be distinguished along two principal dimensions. The first dimension is the type of estimates made. Some estimates were limited to the situation of the baby boomers up to their current age. Other analyses involved projecting the resources and/or consumption of the baby boomers at a later age, usually an elderly age.

The second principal dimension is the group(s) with which the baby boomers in retirement are compared. One comparison that has been used is with other cohorts (such as the baby boomers' parents) at the same age, whether that is age already attained or an elderly age not yet attained by the baby boomers.

Another comparison is the baby boomers at an elderly age with themselves at a younger age, either a specific younger age or an average, for example, of their working years.

This article discusses several selected analyses in terms of the approaches and comparison groups used and describes their results. In some cases, the sensitivity of the results to assumptions about the performance of the economy or to proposed policy changes is presented in these analyses. In addition, most of the analyses discussed here emphasize the expected diversity in the retirement prospects of baby boomers. This diversity is expected both between and within baby boomer subgroups. An important classification of baby boomers that is emphasized in most of the analyses and in this article is by birth year. The baby boom generation is separated into two, three, or four groups based on birth year in most of these analyses.

The assessments discussed in this article are summarized in table 4. Different analysts asked different questions. Questions about baby boomers in retirement can relate to either actual amounts or to projections. CBO examined estimates of the actual income and wealth of baby boomers and of their parents' generation. ESM presented estimates of actual income patterns for pseudo-cohorts including baby boomers and older cohorts. AARP presented microsimulation estimates of the income of baby boomers in retirement and examined the sensitivity of those estimates to several macroeconomic and demographic assumptions. Bernheim projected the consumption of the baby boomers in retirement using an individual model based on utility-maximizing behavior and inferred the amount of saving needed. Kotlikoff and Auerbach projected the income and consumption of the baby boomers at age 65 using a model based on aggregates and distributions and examined the sensitivity of those estimates to proposed program and policy changes.

Most analysts have emphasized the expected diversity in the retirement situations of the baby boomers. Although it is possible to generalize and make statements about baby boomers (or subgroups of baby boomers) in general, diversity within the baby boomer group (and within subgroups) should be kept in mind. All of the analysts discussed here that examined subgroups of baby boomers agreed that some subgroups are not likely to do well in retirement. Those subgroups include persons with low educational attainment, those who are unmarried, women, and minorities. As noted above, there is expected to be substantial diversity within those groups also.

The consensus for the baby boom generation (assuming no change in policy) appears to be the following. Up to this point, the baby boom generation as a whole has a higher economic status than their parents' generation did at the same ages. They also have a higher economic status up to this point than other cohorts that preceded them. Some subgroups of the baby boom generation, however, do not show higher economic status than their parents' generation.

When it becomes elderly, the baby boom generation as a whole probably will have a higher economic status than their parents' generation has and will have at those ages. This outcome, however, is far from certain. Some subgroups of the

baby boom generation may not exceed the economic status of their parents' generation.

It is uncertain whether the baby boom generation as a whole will have enough resources in retirement to maintain their preretirement standard of living, even in the absence of policy changes. If baby boomers increase their saving in the coming years and/or retire at later ages, they could maintain their preretirement standard of living.<sup>24</sup> Some subgroups of the baby boom generation, however, will be able to maintain their standard of living without changing their behavior, while others will not. It should be noted that members of the baby boom generation who have low economic status during their preretirement years would not need a high level of resources in retirement in order to maintain their preretirement standard of living. For example, a person who was poor her entire life (including retirement) could be considered to be maintaining her preretirement standard of living in retirement.

Even under the assumption of no policy change, it is likely that many members of the baby boom generation will have what could be considered inadequate resources in their elderly years. This would be similar, however, to the situation for today's elderly (and for previous elderly cohorts)—some subgroups (and part of most subgroups) have a low standard of living. For example, in 1996 the official poverty rate for all persons age 65 or older was about 11 percent, but the rate for elderly black females was 30 percent and the rate for elderly black female unrelated individuals was 47 percent (U.S. Bureau of the Census 1997). Elderly females of Hispanic origin have similarly high poverty rates.

My view about the projections presented is that the various models are not very reliable. The projections provide some indication of what might happen, but if they are used for policy purposes, they should be used with caution. This is not intended as a criticism of those who prepared the projections, but is merely a statement about the shortcomings of our knowledge. There is so much uncertainty about such factors as the performance of the economy in the future, the saving behavior of the baby boomers, the retirement behavior of the baby boomers, asset values (for example, house prices), and changes in policy and programs, that no reliable projection of the overall status of the baby boomer generation in retirement is possible. But we can say that there will be much diversity in situations and that some subgroups are likely to do poorly. Also, we probably can identify now which subgroups those are likely to be, keeping in mind that there will be diversity within those subgroups also.

It is very useful to make projections, but we should not take them too seriously—it is important to keep the inevitable uncertainty in mind and act accordingly. As the baby boomers move nearer to retirement age, projections of their status in retirement should become more reliable. Therefore, we should keep making such estimates. More sensitivity analysis of the projections would be very useful. Some adjustment to policy—Social Security and Medicare—will be needed. Such adjustments will affect the status of the baby boomers in retirement.

Two problematic aspects of the measurement of economic

status should be mentioned. First, it is difficult to know how to value medical transfers and such transfers often are not included in estimates of the economic status of the baby boomers, nor should they be at our present level of understanding.<sup>25</sup> Such transfers, however, obviously have an impact on the economic status of the elderly, even if we do not know how to measure that impact.

Second, in their elderly years baby boomers are likely to hold substantial equity in their homes. We do not know whether they will choose to use that equity for other purposes, such as to increase nonhousing consumption. However, is that the important question? As long as they can choose to use it, that equity perhaps should be counted as part of their standard of living.

An important question that has received relatively little attention is how the baby boomers in retirement will fare relative to the working population at that time. In a political sense, the relationship between the economic status of baby boomers in retirement and the economic status of workers at that time could be very important. Issues of fairness are likely to arise if the living standard of retirees at that time is substantially below (or above) that of workers.

There are several important uncertainties present in this discussion. Those uncertainties can be separated, somewhat arbitrarily, into two groups: (1) those faced by the baby boom generation; and (2) those related to choices the baby boom generation makes. These two groups are not independent—each group can affect the other group. Uncertainties faced by the baby boom generation include labor market conditions and the rate of change in real wages, the rate of overall inflation, changes in the values of assets such as owner-occupied homes and equities, changes in the cost of medical care, and policy changes such as reductions in Social Security benefits and increases in the normal retirement age. Choices that the baby boom generation will make include saving behavior, retirement behavior, and the allocation of their wealth among different types of assets.

It can be argued that we do not know very much about any of the uncertainties listed above. In such a case it would not be surprising if our knowledge of the retirement prospects of the baby boom generation were very limited. We should, however, continue to examine this topic as the baby boom generation ages and the oldest part of the generation nears its elderly years.

## Notes

<sup>1</sup> See Technical Panel (1995) for a recent broader summary of research on this topic.

<sup>2</sup> See Radner (1993) for estimates of changes over time in the aged/nonaged income ratio.

<sup>3</sup> For 2030, the Social Security Administration projects about 68 million persons age 65 or older using the intermediate assumptions, 65 million using the low cost assumptions, and 72 million using the high cost assumptions (Board of Trustees 1997, table II.H1).

<sup>4</sup> The official poverty measure is considered by many analysts to be flawed (Citro and Michael 1995). It is accurate enough for the limited applications in this article.

<sup>5</sup> It should be noted, however, that these are cross-section estimates for a single year and one cannot infer from these estimates whether poverty rates for early and late baby boomers differ at the same age. Median incomes and poverty rates for different baby boomer birth cohorts at the same age are discussed later.

<sup>6</sup> Note that this table does not show whites separately. The poverty rates for whites generally are very similar to those shown for all races.

<sup>7</sup> Each of these cross-section curves shows the relationship between age and median income for a specific year.

<sup>8</sup> Selected other studies and relevant articles include Easterlin (1987), Kingson (1992, 1991), Levy and Michel (1991), Russell (1982), Yakoboski and Silverman (1994), and Cornman and Kingson (1996).

<sup>9</sup> The report also examined the economic status of current elderly persons, a topic that is not discussed here. See Sabelhaus and Manchester (1995) and Manchester (1994, 1995) for related work.

<sup>10</sup> Also see Easterlin, Macdonald, and Macunovich (1990).

<sup>11</sup> ESM also discuss family circumstances, specifically marital status, number of children, and living arrangements. Those topics are beyond the scope of this article and are not discussed here.

<sup>12</sup> Estimates at 5-year intervals from income year 1964 to income year 1994 were also prepared. The corresponding increases relative to their parents' generations (25 years earlier) were 32 percent, 28 percent, 31 percent, and 20 percent, respectively. Thus, these two sets of differences were almost the same. If a 30-year gap between the baby boomers and their parents is assumed, the increases are substantially larger.

<sup>13</sup> Of course, these comparisons could be affected by the level of economic activity in the years compared.

<sup>14</sup> For this young age group, differences can be affected by factors such as staying in school longer.

<sup>15</sup> 1995 was not a recession year, so the cyclical level of economic activity should not have caused this narrowing, although median income for all households declined slightly from 1990 to 1995.

<sup>16</sup> The estimates in this report were prepared by Lewin-VHI, Inc. The report was written by David L. Kennell, Kevin Coleman, and Lisa Alexih of Lewin-VHI. Estimates for 2010 are also shown in the report, but those estimates are not discussed here.

<sup>17</sup> Note that this is a 40-year difference, rather than the 25- or 30-year differences between baby boomers and parents discussed earlier.

<sup>18</sup> Projections presented in 1991 Advisory Council on Social Security (1991a, 1991b) were also made using PRISM.

<sup>19</sup> The welfare ratio is the ratio of income to the appropriate poverty threshold.

<sup>20</sup> Note that this measure adjusts for differential needs using the poverty threshold equivalence scale.

<sup>21</sup> This work was sponsored by Merrill Lynch & Co., Inc. Also see Bernheim (1994).

<sup>22</sup> It is assumed that increases in Medicare and Medicaid income do not have additional saving associated with them. Also, imputed rent on owner-occupied homes was included in income.

<sup>23</sup> Note that the funding problems of the medical programs play a crucial role in the need for policy changes in relation to the retirement of the baby boom generation.

<sup>24</sup> An increase in saving, however, would require a reduction in their standard of living in their preretirement years below what it would have been. Retirement at a later age would imply a decline in leisure.

<sup>25</sup> See Radner (1997) for a discussion of problems related to medical transfers and the measurement of economic status.

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## In Memory of Daniel B. Radner—1941-1998

It is with deep regret that we inform readers of the death of Daniel B. Radner, long-time staff member of the Social Security Administration's Office of Research, Evaluation and Statistics and a frequent contributor to the *Bulletin*. Dr. Radner died on February 13, 1998, from complications following surgery.

An economist in the Division of Economic Research since 1974, Dr. Radner began his government career in 1966 with the Bureau of Economic Analysis, U.S. Department of Commerce. He received his doctorate in economics from Yale University in 1974.

Dr. Radner was an internationally recognized authority on the economic status of population subgroups. During his career at SSA he published a series of definitive studies that documented the financial circumstances of the American population, with special emphasis on the aged. Many of these studies analyzed trends in the well-being of various population subgroups in light of the growth in the economy and changes in government policies. Much of his work reflected his belief that the economic status of the aged should be assessed in comparison with that of the nonaged population.

He also made important contributions to improving measures of economic well-being and was particularly interested in how noncash income, such as food stamps, housing subsidies, and Medicare, supplement money income to meet the economic needs of the elderly. His work emphasized the importance of incorporating measures of wealth, as well as income, in assessments of economic well-being and stressed the need to examine distributions of income and wealth rather than potentially misleading averages. His research also helped clarify the importance of incorporating both the size and composition of family units in assessing their economic well-being and the importance of using consistent measures of needs and resources in developing equivalence scales. Dr. Radner played a principal role in ensuring the inclusion of recurring measurements of wealth in the Survey of Income and Program Participation (SIPP) and was among the first researchers to use SIPP data to examine the joint distribution of income and wealth.

Before coming to SSA, Dr. Radner participated in developing improved measures of the size distribution of income. He continued this work after arriving at SSA. His efforts led to notably better estimates of the distribution of income in the United States and to his recognition as an expert in statistical matching techniques.

In addition to his numerous articles in the *Bulletin*, Dr. Radner authored reports in the *Studies in Income Distribution* series during his tenure at SSA. His work was also regularly published in professional journals and in numerous monographs. Hallmarks of his research were painstaking data analysis, careful attention to detail, and concern that measures of economic well-being have firm theoretical foundations.

Dan's intellectual acuity was combined with great patience and generosity of spirit, leavened by a delightfully wry sense of humor. He will be dearly missed by those he worked with at SSA, both as a valued colleague and treasured friend.

The article authored by Dr. Radner that appears in this issue of the *Bulletin*, "The Retirement Prospects of the Baby Boom Generation," was submitted for publication shortly before his death.