

Projected pension income: equality or disparity for the baby-boom cohort?

Over time, both eligibility for pensions and income from employer-sponsored pension plans will increase for baby boomers; eligibility rates and benefit amounts are projected to be greater for late boomers overall and, within the late-boomer category, men, whites, and the more educated

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The argument that individuals born at different times are faced with different social and economic circumstances is particularly apropos of the baby-boom cohort, a generation that comprises approximately 77 million Americans. Campbell Gibson argues that analyzing this group as a whole does not accurately portray the many social and economic trends embedded within the group, because the boomers are composed of several subgenerations with different behavioral patterns.¹ He suggests that the best way to understand the differences among the boomers is to look at the characteristics of the different boomers when they are at the same age.

Earlier work by John R. Woods applied a method similar to Gibson's to assess pension coverage for both younger and older boomers when they are at the same age.² Woods's findings suggest that the younger boomers had a lower rate of coverage between the ages of 27 and 36 years than did the older boomers at those same ages. More recently, Jules Lichtenstein and Ke Bin Wu found that, for both pension coverage on any career job and coverage by an individual retirement account (IRA), younger boomers had less coverage than older boomers when older and younger boomers were at the same age.³

Currently, about half of all workers are covered by a pension. As the leading edge of the baby-boom cohort anchors itself for retirement, to what extent will current disparities in pension coverage⁴

spill over into retirement? The adequacy of pension coverage for the coming retirement of the baby boomers is a concern for policymakers, who have offered several legislative proposals to bolster participation in pension plans.

To better understand the issues affecting retirement income security, one must look beyond current coverage rates and focus on eligibility rates.⁵ This article presents data from the Modeling Income in the Near Term (MINT 3) system to address the question of what is in store for the baby-boom cohort once it reaches age 62. The primary objective is to examine disparities in projected pension eligibility and income among the various baby-boom subgenerations upon reaching 62 years.

The focus of the article does not take other retirement sources into account. Although this approach is a narrow one, it is valuable for two reasons. First, the economic well-being of baby boomers once they retire may be partly dependent on income from an employer-sponsored pension. Hence, employer-sponsored pensions play a vital role in ensuring economic well-being during retirement. Second, if the current pension coverage trend continues, how will it affect the future distribution of pension retirement income? Being able to project future pension eligibility and income is crucial to understanding the economic well-being of future retirees, and policymakers who are able to do so will play a more proactive role in ensuring the income security of those retirees.

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Being covered by a pension plan is especially important for a worker who is nearing retirement. Some workers, however, have no such option, especially given that pension eligibility and income have historically been unequally distributed. Previous studies have found that pension coverage and income inequality exist primarily along the lines of age, gender, race, education, and income groups.⁶ This article examines these inequalities among the boomers at age 62 by categorizing them into early boomers as opposed to late boomers and by gender, race, income, and education.

As mentioned earlier, the focus of the research is narrowly defined, concentrating only on pensions—one-third of the “three-legged stool” of Social Security income, private savings, and pensions. Even with this narrow approach, however, the question of income security among boomers can be addressed effectively, because income from a pension accounts for an important share of household retirement income.

As regards employer-sponsored pension eligibility⁷ and income, about half of the boomers will be eligible for a pension benefit, regardless of the year in which they were born. The data reflect an increase in eligibility for women and somewhat stagnant eligibility for men. Rates fluctuate across the various baby-boomer groups, with earnings being the most important factor in explaining eligibility. For those who expect income from a pension, that source plays an important role in attaining economic security. Although eligibility for a pension is projected to make huge strides toward equality, the same is not true for income from a pension. Regardless of the baby-boomer group examined, pension income is projected to be unequally distributed—most noticeably by earnings.

The article is divided into four sections. An overview of the MINT model is presented in the first section, and the growth of the pension system is briefly described in the second. The key findings regarding eligibility for a pension are presented in the third section, while the fourth deals with pension income.

The MINT model

The MINT model is a microsimulation model developed to estimate the distributional effects of proposed Social Security policy alternatives on current and future beneficiaries’ retirement income.⁸ The MINT 3 model projects retirement income from Social Security income, pensions, personal investments or savings, and earnings. The projections are for individuals employed in the private sector and the public sector, including Federal workers and military personnel. The Survey of Income and Program Participation (SIPP) is the primary data source for the MINT 3 pension module, and the projections are based on individuals whose ages ranged from 30 to 62 years in 1992.

Using data generated by version 3 of the MINT model, the study that follows shows projected pension eligibility and income for the baby-boom cohort once these (nondisabled) individuals reach age 62. Specifically, the article examines retirees’

projected pension income and account balance at age 62 from a defined benefit plan⁹ and from a defined contribution plan.¹⁰

Detailed pension coverage data are captured in the SIPP Retirement Expectations and Pension Plan Coverage topical module. Data on contributions to 401(k) and Keogh accounts are reported in the SIPP Annual Income and Retirement Accounts topical module, and information about Keogh account balances is found in the SIPP Assets and Liabilities topical module.

To estimate a worker’s eligibility for a pension on future jobs, the MINT model uses data from the Policy Simulation Group’s PENSIM model to identify job changes.¹¹ To project pension estimates, MINT employs data from the Pension Benefit Guaranty Corporation’s Pension Insurance Modeling System (PIMS)¹² and the Employee Benefit Research Institute (EBRI)/Investment Company Institute (ICI) database.¹³ The PIMS data are used to capture the heterogeneity of defined benefit plans’ benefit formulas and to supplement the defined benefit pension data reported in the SIPP, while the EBRI/ICI data are used to supplement assumptions regarding the behavior of defined contribution plan participants.

The mechanics of the MINT 3 pension module are quite complex. Self-reported pension data from the SIPP, along with data from the PENSIM model, determine an individual’s pension coverage history and project future pension coverage. Then MINT calculates the defined benefit pension income for private-sector workers by assigning data from the PIMS to defined benefit plan formulas. This approach allows for a more realistic measure of pension benefits from past, current, and future jobs. Benefit amounts of Federal Government workers and military personnel are calculated from the actual benefit formulas.¹⁴ The MINT 3 model uses replacement rate data, published by the Bureau of Labor Statistics, to project the benefits for State and local workers. The model assumes a vesting period¹⁵ of 5 years for all workers in order to qualify for benefits, and adjustments are made for those who are projected to receive Cost of Living Adjustments (COLAs).¹⁶

The procedure for projecting account balances of defined contribution plans also began with self-reported information on the SIPP regarding account balances and contribution rates. In addition, assumptions about allocations of assets and future contribution rates are factored into the projections. The model uses data from EBRI/ICI to assign match levels and rates. These data are further used to develop assumptions about allocations of contributions and assets. The model assumes a real rate of return of 6.98 percent for stocks and 3.00 percent for bonds.¹⁷

Data on Keogh account balances and contributions are gathered from the SIPP. The same techniques that are applied to allocations of assets and rates of return in defined contribution plans are used to project Keogh account balances. However, no new Keogh participation is simulated; only those covered by a Keogh plan at the time of the SIPP interview are projected to have a Keogh account at retirement.

In the analysis that follows, the cohort is divided into three separate 5-year groups born between 1946 and 1960. The cohorts are labeled 1946–50, 1951–55, and 1956–60 and are referred to as early, middle, and late boomers, respectively.¹⁸ In 2003, these cohorts ranged in age from 43 to 57 years. The findings reported in this article are projections for the boomers to age 62, from 2008 to 2022.

The article uses the reference age of 62 for two reasons: (1) it is the earliest age at which retirees can begin to receive benefits from the Social Security Administration; and (2) research has shown that the majority of the population retires by age 62.¹⁹

The decision to retire usually centers on two factors: the individual's economic well-being and personal issues, such as one's health or the desire to continue to work.²⁰ Given that a high percentage of workers retires by age 62, analyzing baby boomers when they are at that age yields valuable information on that aspect of their economic well-being which is derived from pension income at an age when boomers are contemplating retirement (assuming that the current retirement trend continues).²¹

Growth of the pension system

The growth of the pension system is one of the most significant economic and social phenomena of the 20th century.²² Although pension growth was interrupted during the depression, coverage grew at an extraordinary rate from the late 1940s through the 1960s. On a slightly longer time span, coverage increased from 17 percent of full-time workers in 1940 to 52 percent in 1970. However, since the 1970s, the overall growth rate of pension coverage has slowed,²³ and, as shown in chart 1, by 2000 the number had declined by 4 percentage points to 48 percent.²⁴

Using data from the periodic Employee Benefit Supplement of the Current Population Survey, Richard Hinz and John Turner found a similar trend for full-time private wage and salary workers over a 20-year period.²⁵ Hinz and Turner believe that this stability was remarkable, considering the changes in the size and composition of the workforce, the escalating entry of women into the labor force, and the heightening interest surrounding workplace security. Each of these factors alone would have been expected to generate an increase in eligibility for pensions.

Eligibility for pensions

Overall eligibility for pensions. The percentage of the aged population receiving income from pensions has more than doubled since the early 1960s. One explanation for this trend is the rapid growth of private pension coverage. As shown in chart 2, the percentage of the aged population receiving pension income declined during the 1990s, a phenomenon that can be attributed to the stagnation in the pension coverage growth rate since the 1970s. However, projections from the MINT model indicate that eligibility for pensions will be slightly higher among

the late boomers than among the early boomers. (See table 1.) Individuals born during the last stage of the baby boom, from 1956 to 1960, will be 8 percent more likely to be eligible for a pension benefit than those born during the early years (1946–50) of the baby boom. Note that eligibility takes the form of participation in either a defined benefit plan, a defined contribution plan, or both.

Pension eligibility by gender. Late-boomer women's eligibility for a pension is projected to be 9 percent higher than that of early-boomer women (44 percent, compared with 48 percent); late-boomer men's eligibility for a pension is expected to be 6 percent higher than that of early-boomer men (54 percent, as opposed to 57 percent).

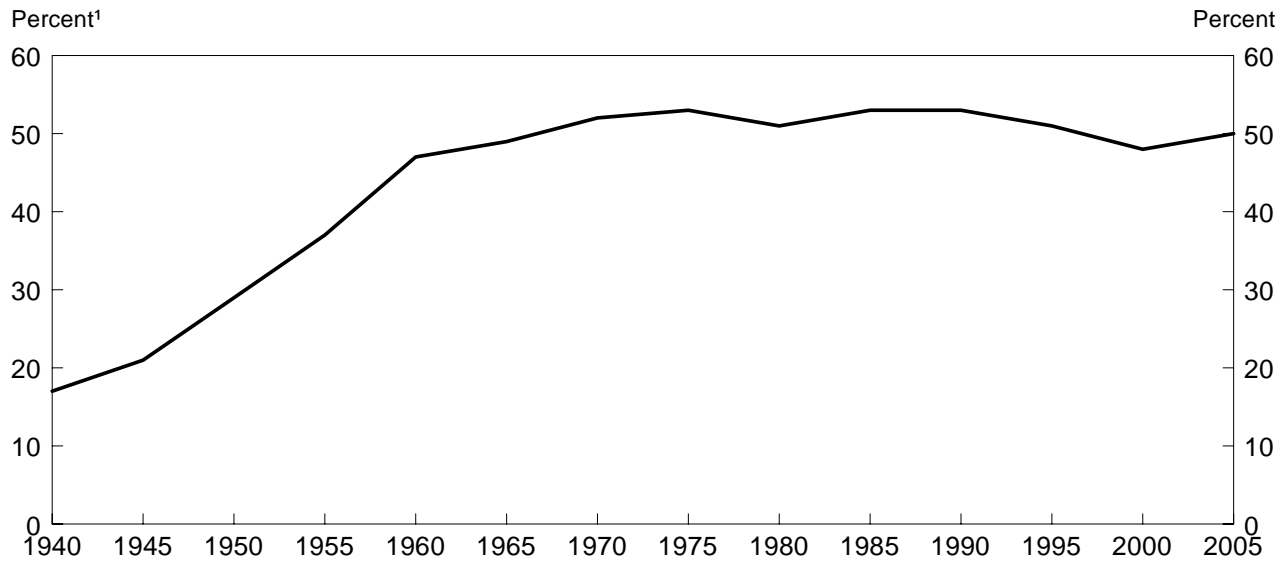
Despite the greater increase in eligibility among late-boomer women, the gap in eligibility between those women and late-boomer men will be reduced by only a marginal 3 percentage points. The reason is that there is a 19-percent difference in the levels of eligibility between early-boomer women and early-boomer men (44 percent and 54 percent, respectively), compared with a 16-percent difference in the levels of eligibility between late-boomer women and late-boomer men (48 percent and 57 percent, respectively).

The pension coverage rates for women have grown substantially. A study by William Even and John Turner found that pension coverage rates for female full-time private wage and salary workers rose from 38 percent in 1972, to 42 percent in 1983, to 48 percent in 1993.²⁶ In contrast, the corresponding coverage rates for men fell from 54 percent, to 52 percent, and, eventually, 51 percent.²⁷

As women's labor force patterns have changed over the past half century, succeeding cohorts of women have increased their opportunities for pension coverage.²⁸ There are several reasons for this trend, including women's attaining better jobs and exhibiting longer, steadier work histories. Another major reason for the increase in women's participation in pension plans is the shift in the prevalent type of pension plan from defined benefit to defined contribution.²⁹

Not all women, however, benefited from the expanding pension market. Women born during the early years of the boom possess characteristics similar to those of women in the depression cohort (individuals born between 1930 and 1940). They are more likely to have married young and exhibited low levels of labor force participation, which adversely affects their eligibility for pensions.³⁰ According to research by Janice Farkas and Angela O'Rand and by O'Rand and John Henretta, women in the baby-boom cohort have higher rates of pension coverage compared with women born during the depression.³¹ Baby-boom women are working more steadily and with less mobility than women in the depression cohort; thus, they are more likely to qualify for pensions. Although some women in the depression cohort were the benefactors of the huge labor demands during World War II,

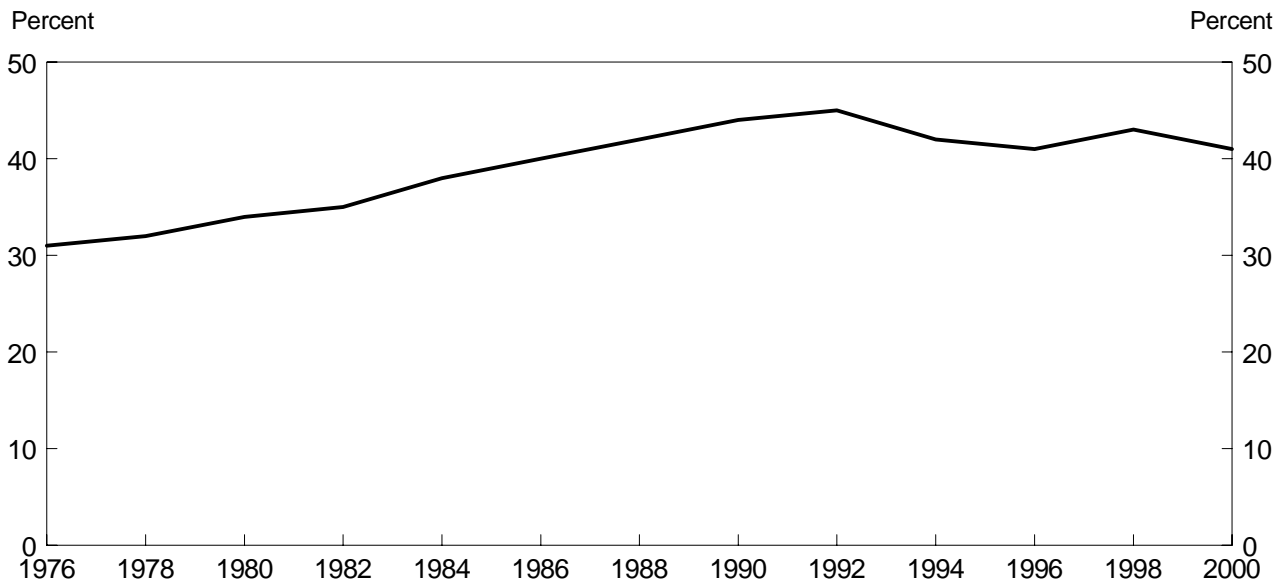
Chart 1. Private pension plan participation rates, selected years, 1940–2005



¹ Percent of private-sector workers who participated in a pension plan.

SOURCE: Data for 1940–85 are from Daniel Beller and Helen Lawrence, "Trends in Pension Coverage," in John A. Turner and Daniel J. Beller, eds., *Trends in Pensions, 1992* (U.S. Department of Labor, Pension and Welfare Benefits Administration, 1992). Data for 1990–2000 are from unpublished tabulations from the BLS Employee Benefits Survey. Data for 2005 are from published tabulations from the BLS National Compensation Survey.

Chart 2. Percent of the aged¹ population receiving income from pensions,² selected years, 1976–2000



¹ The aged unit is either a married couple living together, with husband or wife aged 65 years or older, or a person 65 years or older who does not live with a spouse.

² Pensions include private pensions and annuities, government employee pensions, railroad retirement benefits, individual retirement accounts, Keogh accounts, and 401(k) accounts.

SOURCE: *Income of the Aged Chartbook*, 2000.

Table 1. Percent of baby-boom population projected to be eligible to receive income from an employer-sponsored pension plan at age 62, by birth cohort and demographic group

Demographic group	1946–50	1951–55	1956–60
All baby boomers	48	49	52
Sex:			
Men	54	54	57
Women	44	45	48
Race or ethnicity:			
White	50	51	54
Black	43	48	49
Hispanic ¹	39	39	45
Other races	44	46	47
Education:			
Some high school	26	29	35
High school graduate	46	46	49
Some college	54	55	59
Average Indexed Monthly Earnings: ²			
First quintile ³	14	20	25
Second quintile	33	34	42
Third quintile	55	53	56
Fourth quintile	69	69	67
Fifth quintile	77	76	77
Type of plan:			
Defined benefit	31	30	29
Defined contribution	28	32	37
Defined benefit and defined contribution	11	12	14

¹ Any race.
² See text, note 35, for a description of the Average Indexed Monthly Earnings.
³ Quintiles are ranked in ascending order; thus, the lowest-numbered quintile is the lowest-earning quintile.

SOURCE: MINT 3 projections.

the women’s labor force participation rate peaked at 35 percent in 1944 and then declined modestly to about 31 percent in the early postwar years.³²

For the most part, each cohort of baby-boom women is better educated than the cohort that preceded it. In addition, each such cohort is increasingly working in better paying, higher level jobs that are more likely to offer pension plans.

Pension eligibility by race and ethnicity. The percentage of elderly Americans who are minorities is projected to be 20 percent by the year 2010, 25 percent in 2030, and nearly one-third of all elderly Americans by 2050. If pension coverage does not keep pace with the changing demographic of the aging population, some minorities face the risk of slipping into poverty in their senior years.³³

Table 1 shows that, among baby boomers, minorities will have lower pension eligibility rates than whites,³⁴ regardless of the cohort, and that at least half of whites will be eligible for a pension benefit. Although the likelihood of being eligible is projected to

increase for late-boomer blacks and Hispanics, their eligibility will still fall short compared with that of late-boomer whites. Nonetheless, eligibility rates for late-boomer blacks and Hispanics will be 49 percent and 45 percent, respectively, representing both an improvement over the rates of early boomers and a reduction in the pension gap between whites and minorities.

Late-boomer Hispanics will be 15 percent more likely to be eligible for a pension benefit than their early-boomer counterparts. Still, late-boomer Hispanics are projected to be 20 percent less likely to be eligible for a pension than are late-boomer whites. Overall, the MINT model projects that minorities will gain some ground toward pension equality with whites.

Pension eligibility by education. Table 1 displays rates of pension eligibility according to level of educational attainment. Across all cohorts, those with less than a high school education will be less likely than both high school graduates and those with some college to be eligible for a pension benefit. For example, early boomers with some college will be more than twice as likely to be eligible for a pension benefit as those with less than a high school education. This finding suggests that education plays an important role in determining one’s eligibility for a pension. The same comparison among late boomers finds that the disparity in eligibility will be reduced by 34 percent. The model also projects improvement in pension eligibility for those with low levels of education.

Pension eligibility by earnings. As shown in table 1, eligibility for a pension is highly correlated with the Social Security Administration’s Average Indexed Monthly Earnings, intended to be representative of a worker’s lifetime earnings.³⁵ The greatest disparity can be seen within, rather than across, cohorts. Those in the first and second quintiles of the earnings distribution (the lowest earners) are projected to have a large increase in eligibility, while those in higher quintiles are projected to experience little or no increase in eligibility.

When it comes to absolute percentages, however, the situation is reversed: some 77 percent of the late boomers in the fifth quintile are projected to be eligible to receive a pension benefit, compared with only 25 percent of those in the first quintile. Stated differently, 3 times as many earners in the fifth quintile will receive pension income as will earners in the first quintile. Among early boomers, those in the fifth quintile will be 5 times more likely to be eligible to receive a pension benefit than those in the first quintile.

Low-earning individuals differ from their higher earning counterparts in their type of employment. Low-income individuals are more likely to have jobs in industries and occupations that do not offer pension plans.³⁶ However, in addition to exhibiting differences in job opportunities, low-income individuals may not have enough liquid cash and thus simply

cannot afford to participate in plans that require an employee contribution.

Eligibility by type of plan. In 1975, 87 percent of pension plan participants were enrolled in a defined benefit plan as their primary plan, while 13 percent of workers had a defined contribution plan as their primary plan. By the mid-1990s, participation in defined contribution plans had surged: 56 percent of workers with any kind of a pension plan still were covered by a defined benefit plan as their primary pension plan, but 44 percent were now covered by a defined contribution plan as their primary plan.³⁷

As shown in table 1, eligibility for defined benefit pension plans is projected to remain somewhat stable across the entire baby-boom cohort, averaging only a 1-percentage-point difference between successive cohorts. This trend suggests that late boomers will be about as likely as middle and early boomers to be eligible for a defined benefit plan (29 percent, 30 percent, and 31 percent, respectively).

The same is not true for defined contribution eligibility: late boomers will be the most likely to be eligible for a defined contribution plan, with a difference as high as 9 percentage points more than early boomers.

Pension income

Overall pension income. To understand an individual's economic well-being, one cannot simply focus on whether he or she is eligible for a pension benefit. The amount of income an individual expects to receive from a pension also must be considered. Today, income from pensions accounts for an important share of retirement income,³⁸ and some researchers suggest that it will continue to be an important source of retirement income for many future retirees.³⁹ The rest of this article discusses the MINT model's projected income and account balance for those of the baby-boom population who are projected to be eligible to receive income from an employer-sponsored pension plan at age 62.

On the one hand, MINT projects defined benefit income for early boomers to be larger, on average, than defined benefit income for late boomers. Specifically, the average monthly defined benefit income of late boomers is projected to be \$732, or \$84 less per month than the average income of early boomers. (See table 2.)

On the other hand, projections for the defined contribution account balances show an increase. The average balance for late boomers is projected to be \$131,198, an amount that is \$8,445 more than the average balance of early boomers. One plausible explanation for the increase in the average account balance is that late boomers entered the labor force at the height of the transition to defined contribution plans. Therefore, they were covered by such a plan for a longer part of their working careers

and reaped the benefits of compounded interest over a longer period than their older counterparts did.

Pension income by gender. The value of a pension plan at retirement depends heavily on the participants' length of service, earnings, and contributions to the plan. Historically, women average lower earnings and have more breaks in their work histories than men have. For example, in 1998, women's weekly median earnings equaled roughly three-quarters of men's. Still, that was a considerable increase over 1970, when women earned about three-fifths of men's weekly median earnings.⁴⁰

Unquestionably, women's pension eligibility rates are improving relative to men's between birth cohorts; nevertheless, their average benefit amount is projected to fall well short of that of their male counterparts. As shown in table 2, the projected monthly defined benefit income for an early boomer man is \$974, as opposed to \$621 for an early boomer woman—a difference of \$353. Among the late boomers, a contrasting trend exists: the projected monthly benefit for men, \$835, is nearly \$140 less than that of an early boomer man, while the projected benefit for women, \$609, is just \$12 less than her early boomer counterpart. This substantial decline in defined benefit income for men will reduce the gender gap to \$226, an improvement of \$127. The persistent disparity between men and women may be a direct reflection of their differences in labor force attachment, or, as Daniel Beller and David McCarthy suggest, it could be the result of an expansion in pension eligibility among women who are low earners.⁴¹

The average defined contribution pension account balance for both men and women is projected to increase; however, men's account balances are projected to increase more. Table 2 indicates that late-boomer men are projected to have an average defined contribution balance that will be 11 percent (\$16,360) more than that of early-boomer men. By contrast, late-boomer women have projected defined contribution balances that are only 1 percent (\$1,375) greater than that of early-boomer women.

Pension income by race and ethnicity. Economists and other researchers have pointed to numerous reasons, including historical patterns of differences in wages, job opportunities, and access to pension plans, that minorities, particularly blacks and Hispanics, have lower pension income. In addition, research shows that differences in the way whites and minorities invest may have some bearing on their retirement income, especially as it relates to defined contribution plans.⁴² Minority participation rates in such plans, when they are offered, are much lower than those of whites.⁴³ Moreover, minorities also are less likely to contribute the maximum amount allowed.

The racial divide is less pronounced when it comes to defined benefit income. Blacks are the only minority group whose difference from whites in defined benefit pension income is projected to grow smaller with successive cohorts. The average

Table 2. Average projected monthly pension benefit and account balance for those of the baby-boom population who are projected to be eligible to receive income from an employer-sponsored pension plan at age 62, by birth cohort and demographic group

Demographic group	Defined benefit amount			Defined contribution balance ¹		
	1946-50	1951-55	1956-60	1946-50	1951-55	1956-60
All baby boomers	\$816	\$782	\$732	\$122,753	\$129,838	\$131,198
Sex:						
Men	974	868	835	142,489	153,206	158,849
Women	621	680	609	98,706	102,650	100,081
Race or ethnicity:						
White	855	807	779	125,389	137,020	138,556
Black	649	685	598	84,533	77,891	94,534
Hispanic ²	720	649	576	103,063	101,607	94,394
Other races	666	873	581	130,685	139,806	145,010
Education:						
Some high school	542	550	524	43,770	63,199	67,996
High school graduate	731	704	657	91,288	91,401	94,440
Some college	900	854	819	144,377	153,366	161,509
Average Indexed Monthly Earnings: ³						
First quintile	337	226	201	42,387	22,678	24,984
Second quintile	330	307	338	45,633	38,877	44,411
Third quintile	561	552	553	74,639	70,955	82,300
Fourth quintile	893	880	839	108,830	123,039	128,394
Fifth quintile	1,436	1,421	1,367	204,733	232,629	245,161

¹ Total amount a retiree will receive.

² Any race.

³ See text, note 35, for a description of Average Indexed Monthly Earnings.

NOTE: All dollar amounts are in 2003 dollars.

SOURCE: MINT 3 projections.

projected defined benefit for late-boomer blacks is \$181 less than that for late-boomer whites, compared with \$203 less for late-boomer Hispanics and \$198 less for late boomers of other races. The \$181 figure marks a projected reduction in the gap by \$25 over the gap between early-boomer blacks and early-boomer whites; by contrast, the gap between late-boomer Hispanics and late-boomer whites and between late boomers of other races and late-boomer whites increased by \$60 and \$9, respectively, over the gap between early boomers of those races and early-boomer whites.

The MINT data reveal that whites and other racial groups will outpace Hispanics and blacks in terms of defined contribution balances. The defined contribution balance gap between whites and blacks, as well as between whites and Hispanics, is projected to widen between the early and the late cohorts. Whites will experience the biggest gains, followed closely by others, with their average balances projected to grow to \$138,556 and \$145,010, respectively. Hispanics, in contrast, are projected to make the smallest strides in narrowing the gap. The defined contribution balances for Hispanics are projected to decline, making them the only group to record a drop between the early and late cohorts. In a mixed situation, although blacks are projected to make clear gains in the late cohort, the defined contribution balance gap between whites and blacks is projected to widen by more than \$3,000 among the late boomers.

A 1999 study by Marjorie Honig found that while minority workers earn less than whites, disparities in income grow more

dramatic after retirement.⁴⁴ According to Honig, the median household income for retired blacks and Hispanics is less than half that of whites.⁴⁵

Pension income by education level. Despite projected gains in eligibility, people without a high school diploma will see their average pension income fall well short of that received by people with a high school diploma. Those who did not complete high school are projected to have lower defined benefit amounts and defined contribution balances than high school graduates, regardless of their birth years. As table 2 shows, the average defined benefit for late boomers who are high school dropouts will be only \$524, compared with \$819 for late boomers with some college. Moreover, the average defined contribution balance of late-boomer high school dropouts is projected to be \$67,996, compared with \$161,509 for late boomers with some college.

These findings are partially explained by the fact that high school dropouts are less likely to work in jobs that offer pensions; therefore, they are less likely to participate in a defined contribution plan. Another plausible explanation is the difference in earnings: on average, high school dropouts receive lower pay than those who complete high school. Because earnings are a major determinant in calculating the pension benefit amount, one would expect those with lower earnings to have lower pension amounts than those with higher earnings. Among early boomers, the average projected defined contribution balance for those with less than a high school education is \$43,770, just 30

percent of the \$144,377 balance for those with some college. The ratio goes up—to 42 percent—for late boomers.

Differences in pension income by education may partially explain the differences in pension income by race and ethnicity mentioned earlier. The correlation between level of education and the likelihood that one is receiving a pension is not surprising, given the known relation between education and income and between income and having a pension. Generally speaking, minorities attain a lower level of education than whites.

Pension income by earnings quintile. Defined benefit incomes usually are determined by a formula based on a percentage of the worker's earnings or, like defined contribution incomes, by the amount that the employer and the employee contribute each year. In either case, earnings are a major factor in determining how much an individual can expect from his or her pension. The less money earned over a career, the less will be available to save for retirement. As indicated in table 2, those in the lowest earnings quintile will have substantially lower pension accumulations than those in higher quintiles.

For those participating in a defined benefit plan, each quintile will see its income remain uniform across cohorts, except for the first quintile. Persons at the bottom end of the earnings scale are projected to be worse off in the late cohort than in the early cohort. However, within cohorts, there are notable differences, foremost among them being that the pension income gap between the richest and poorest pensioners is projected to widen.

The pension income of those with earnings in the highest 20 percent of early-cohort defined benefit pensioners is projected to be, on average, more than 4 times that of those in the bottom quintile. As regards late boomers participating in defined benefit plans, those in the fifth quintile will enjoy a margin in excess of nearly 7 times the average pension income of those in the first quintile. Overall, the first quintile will see an increase in its members' eligibility from early to late boomers, but their defined benefit income and defined contribution balances will worsen. As a result, the income gap between the "low" and the "high" benefit groups will increase by 6 percent for defined benefit income and by 36 percent for defined contribution balances by the time the late boomers reach age 62.

The greatest gap in defined contribution balances appears once again between those with incomes in the first quintile and those with incomes in the fifth quintile. Early boomers in the first quintile who participate in defined contribution plans will have balances that are 21 percent of those in the fifth quintile, and their late-boomer counterparts will have balances that are just 10 percent of those in the fifth quintile. Many low-income workers may find it difficult to contribute to a pension plan and still manage to pay bills. In a system in which a defined contribution plan is the dominant type, lower paid workers tend to make only minimal contributions or not to contribute at all. Furthermore, empirical research suggests that higher earners tend to contribute higher percentages of their salaries to defined contribution types of plans.⁴⁶ □

Notes

¹ Campbell Gibson, "The Four Baby Booms," *American Demographics*, November 1993, pp. 36–40.

² John R. Woods, "Pension coverage among the Baby Boomers: initial findings from a 1993 survey," *Social Security Bulletin*, fall 1994, pp. 12–25.

³ Jules H. Lichtenstein and Ke Bin Wu, "Retirement Plan Coverage and Saving Trends of Baby Boomer Cohorts by Sex: Analysis of the 1989 and 1998 SCF [Survey of Consumer Finances]," *AARP Public Policy Institute Data Digest*, Publication DD93 (Washington, DC, AARP, November 2003), pp. 1–8.

⁴ The term *pension coverage* takes on a number of definitions that result in discrepancies in the literature. These differences in terminology affect published coverage rates. In discussing previous literature on pensions, this article uses the term *covered* or *coverage*, which applies to an individual who is participating in a pension plan. The term *eligible* or *eligibility* is used later on to apply to an individual who has satisfied conditions in the plan that allow him or her to obtain a benefit. Note that eligibility is a byproduct of coverage, and the two terms are not used interchangeably.

⁵ *Eligible* pension plan participants are participants who have satisfied the vesting requirements specified by a plan and are thereby entitled to receive benefits from the plan.

⁶ See, for example, Constantijn Panis, Michael Hurd, David Loughran, Julie Zissimopoulos, Steven Haider, and Patricia St. Clair, *The Effect of*

Changing Social Security Administration's Early Entitlement Age and the Normal Retirement Age, Draft Report, SSA Contract No. 600-96-27335 (Santa Monica, CA, RAND Corporation, 2002); James L. Medoff and Michael Calabrese, *The Impact of Labor Market Trends on Health and Pension Benefit Coverage and Inequality*, Final Report to PWBA (Pension and Welfare Benefits Administration, 2001); and Yung-Ping Chen, *Employee Preferences as a Factor in Pension Participation by Minority Workers*, Draft Report, U.S. Department of Labor Contract No. 41USC252C3 (Boston, Gerontology Institute, 2001).

⁷ Included in eligibility and account balances in defined contribution plans are Keogh eligibility and balances. A Keogh plan is a tax-deferred retirement plan designed to help self-employed workers or individuals who earn self-employed income establish a retirement savings program. There are two different types of Keogh plans: the profit-sharing plan and the money purchase plan. Under Keogh regulations, the money purchase contribution is mandatory and must not exceed the lesser of \$30,000 and 20 percent of the individual's self-employment income; also, the individual must make the same percentage contribution each year, regardless of whether he or she has or has not made a profit. The profit-sharing contributions must not exceed the lesser of \$30,000 and 13.04 percent of the individual's self-employment income, but the contribution amounts can change each year. Note that individuals can contribute to both types of plans in the same year.

⁸ For a complete description of the MINT model project, see Gary Burtless, "Estimation and Projection of Lifetime Earnings," *Modeling*

Income in the Near Term: Projections of Retirement Income Through 2020 for the 1931–60 Birth Cohorts (Washington, DC, The Urban Institute, 1999), pp. 26–69; Eric Toder, Cori Ucello, John O’Hare, Melissa Favreault, Caroline Ratcliffe, Karen Smith, Gary Burtless, and Barry Bosworth, *Modeling Income in the Near Term: Projections of Retirement Income Through 2020 for the 1931–60 Birth Cohorts*, Draft Final Report, SSA Contract No 600–96–27332 (Washington, DC, The Urban Institute, 1999); Eric Toder, Lawrence Thompson, Melissa Favreault, Richard Johnson, Kevin Perese, Caroline Ratcliffe, Karen Smith, Cori Ucello, Timothy Waidmann, Jillian Berk, Romina Woldemariam, Gary Burtless, Claudia Sahm, and Douglas Wolf, *Modeling Income in the Near Term: Revised Projections of Retirement Income Through 2020 for the 1931–60 Birth Cohorts*, Project Report for the Social Security Administration (Washington, DC, The Urban Institute, 2002); Constantijn Panis and Lee Lillard, *Near Term Model Development*, Draft Final Report, SSA Contract No. 600–96–27335 (Santa Monica, CA, RAND Corporation, 1999); and Barbara A. Butrica, Howard M. Iams, James Moore, and Mikki Waid, *Methods in Modeling Income in the Near Term (MINT)*, ORES Working Paper No. 91 (Social Security Administration, Office of Policy, Office of Research, Evaluation, and Statistics, 2001).

⁹ Traditionally, a defined benefit plan provides an employee with a guaranteed amount, payable monthly and based on a specific benefit formula, for the rest of the employee’s life.

¹⁰ In a defined contribution plan, employees are not promised a specific benefit amount; instead, the employer and/or employee promises to make contributions into individual employee accounts that are subsequently invested, and gains or losses determine the employee’s benefits.

¹¹ For an overview of PENSIM, visit the Web page <http://www.polsim.com/overview.pdf#search=overview%20of%20PENSIM>.

¹² The Pension Insurance Modeling System is a microsimulation model that produces a distribution of Pension Benefit Guaranty Corporation’s exposure over a defined time interval. The Pension Benefit Guaranty Corporation feeds into the model measures of the historical behavior of stock returns, interest rates, bankruptcy rates of defined benefit plan sponsors, and relationships between bankruptcy rates, on the one hand, and financial ratios, employment counts, and actual pension plan data, on the other.

¹³ The Employee Benefit Research Institute and the Investment Company Institute have 1996 data on 6.6 million 401(k) participants in 27,762 plans. The data have to do with demographics, annual contributions, plan balances, asset allocation, and loans, among other information.

¹⁴ For Federal Government workers, the formula varies by whether the worker is covered by Social Security. For noncovered Federal employees, the Civil Service Retirement System formula is applied, and for covered Federal employees, the Federal Employees Retirement System formula is applied. For military personnel, the formula varies by the date the individual entered the military.

¹⁵ The vesting period is the length of time after which the employee’s right to receive a present or future pension benefit is no longer contingent on remaining in the service of the employer.

¹⁶ Cost of Living Adjustments (COLAS) are increases that keep retirees’ benefits in line with inflation; they frequently are tied to the Consumer Price Index.

¹⁷ The real rates of return of stocks and bonds are reduced by 1 percent to reflect administrative costs, based on assumptions used in Joan T. Bok, Ann L. Combs, Sylvester J. Schieber, Fidel A. Vargas, and Carolyn L. Weaver, “Restoring Security to Our Social Security Retirement Program,” in *Report of the 1994–1996 Advisory Council on Social Security, Volume I: Findings and Recommendations* (Washington, DC, Advisory Council on Social Security, 1997); on the Internet at <http://www.ssa.gov/history/reports/adccouncil/report/toc.htm>. In

order to capture varying investment experience, the rates are set stochastically, with a standard deviation of 17.28 percent for stocks and 2.13 percent for bonds.

¹⁸ Typically, the baby-boom cohort is represented as those born between 1946 and 1964, inclusive. However, because those born after 1960 had not yet moved fully into their careers during the 1992 SIPP (the youngest were 30 years of age), projecting their income and their pension benefits would likely have yielded statistically suspect results, so the group was excluded from the analysis.

¹⁹ See, for example, Alan L. Gustman and Thomas L. Steinmeier, *The Social Security Early Entitlement Age in a Structural Model of Retirement and Wealth*, NBER Working Paper 9183 (National Bureau of Economic Research, September 2002); and Panis, Hurd, Loughran, Zissimopoulos, Haider, and St. Clair, *Changing Social Security Administration’s Early Entitlement Age*.

²⁰ See Robert Smith, *Raising the Earliest Age for Social Security Benefits* (Congressional Budget Office, Washington, DC, 1999); Richard V. Burkhauser, Kenneth A. Couch, and John W. Phillips, “Who Takes Early Social Security Benefits? The Economic and Health Characteristics of Early Beneficiaries,” *Gerontologist*, December 1996, pp.789–99; and Joseph F. Quinn, Richard V. Burkhauser, and Daniel A. Myers, *Passing the Torch: The Influence of Economic Incentives on Work and Retirement* (Kalamazoo, MI, W. E. Upjohn Institute for Employment Research, 1990).

²¹ The results presented in this article are projections, and the intent is not to suggest that these individuals actually are retired at age 62. Rather, the results provide a snapshot of pension coverage and income for baby boomers once they reach 62 years.

²² Norman B. Ture and Barbara A. Fields, *The Future of Private Pension Plans* (Washington, DC, American Enterprise Institute for Public Policy Research, 1976), p. 1.

²³ See Donald Parsons, “The Decline in Private Pension Coverage in the United States,” *Economic Letters*, August 1991, pp. 419–23; David E. Bloom and Richard B. Freeman, “The Fall in Private Pension Coverage in the U.S.,” *American Economic Review*, May 1992, pp. 539–45; and Daniel Beller and Helen Lawrence, “Trends in Pension Coverage,” in John A. Turner and Daniel J. Beller, eds., *Trends in Pensions, 1992* (U.S. Department of Labor, Pension and Welfare Benefits Administration, 1992).

²⁴ *National Compensation Survey: Employee Benefits in Private Industry in the United States, 2003* (Bureau of Labor Statistics, 2003).

²⁵ Richard P. Hinz and John A. Turner, “Pension Coverage Initiatives: Why Don’t Workers Participate?” in Olivia S. Mitchell and Sylvester Schieber, eds., *Living with Defined Contribution Pensions: Remaking Responsibility for Retirement* (Philadelphia, University of Pennsylvania Press, 1998).

²⁶ William E. Even and John A. Turner, “Has the pension coverage of women improved?” *Benefit Quarterly*, second quarter, 1999, pp. 37–40.

²⁷ *Ibid.*

²⁸ Sophie M. Korczyk, “Gender and Pension Coverage,” in Turner and Beller, eds., *Trends in Pensions, 1992*.

²⁹ Employment in the service sector has grown rapidly over the past few decades, but in the manufacturing sector, where defined benefit pension plans have been the prevalent type of plan, employment declined. This decline played a role for women, because women tend to work in the service sector, where defined contribution pension plans are usually the only pension plans offered.

³⁰ See *Statistical Abstract of the United States: 1998*, 118th ed. (U.S. Bureau of the Census, 1998). Historically, women have been concentrated in occupations characterized by lower earnings and higher turnover rates, with fewer fringe benefits such as pensions.

³¹ See Janice L. Farkas and Angela M. O’Rand, “The pension mix for women in middle and late life: The changing employment relationship,” *Social Forces*, March 1998, pp. 1007–37; and Angela M. O’Rand and John C. Henretta, “Delayed Career Entry, Industrial Pension Structure, and Early Retirement in a Cohort of Unmarried Women,” *American Sociological Review*, June 1982, pp. 365–73.

³² Frank Levy, *New Dollars and Dreams: American Income and Economic Change* (New York, Russell Sage Foundation, 1998), p. 16.

³³ Elayne Robertson Demby, “Minorities Receive Smaller Pension,” on the Internet at <http://www.plansponsor.com>, January 1997.

³⁴ The terms *white* and *black* refer to non-Hispanic individuals. The term *Hispanic* refers to individuals of any race.

³⁵ The Internet Web site <http://www.socialsecurityinfo.com/current/step2.htm> gives the following definition of the Average Indexed Monthly Earnings:

The [Average Indexed Monthly Earnings are] earnings indexed for inflation for a specific number of years divided by the number of months in those years. The number of years is generally 35, but it may be less, depending on the [worker’s] date of birth. The earnings used in this calculation are earnings which are subject to Social Security tax. Therefore, annual earnings used in this calculation cannot exceed the maximum earnings subject to Social Security tax for a given year. A specific year’s wages is then adjusted for inflation by multiplying that year’s Social Security earnings by the ratio of base year average wages divided by average wages for that specific year. The base year is the year in which the worker turns 60. Those average wages are published by the Social Security Administration. The inflation adjusted wages for the best 35 years are totaled. The 35 years chosen do not have to be consecutive. That wage total is then divided by 420 months (35 years times 12 months per year).

³⁶ According to a General Accounting Office (GAO) analysis of Census Bureau data, in 1998 workers who earned less than \$40,000 participated in employer-sponsored pension plans at a rate of 38 percent, compared with 70 percent of workers who earned between \$40,000 and \$74,999 per year. The GAO report suggests that one reason for the reduced participation rates among low-income workers is that they are more likely to

work for small firms, which offer pension plans at a lower rate than larger firms do.

³⁷ Gary Klunman, Asokan Anadarajan, and Kenneth Lawrence, “An Analysis of the Move toward Defined Contribution Pension Plans: Are the Rewards Commensurate with the Risks?” *Journal of Pension Planning and Compliance*, fall 1999, pp. 61–89.

³⁸ See William G. Gale, *The Effect of Pensions on Wealth: Reevaluation of Theory Evidence*, mimeograph (Washington, DC, The Brookings Institution, 1995); James R. Woods, “Pension benefits among the aged: conflicting measures, unequal distributions,” *Social Security Bulletin*, fall 1996, pp. 3–30; and Melissa Koenig, *Income of the Population 55 or Older, 2000* (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002).

³⁹ Sharon A. DeVaney and Ya-Ping Su, “Factors Predicting the Most Important Source of Retirement Income,” *Compensation and Working Conditions* (Bureau of Labor Statistics, fall 1997), pp. 25–31.

⁴⁰ Mary Bowler, “Women’s earnings: an overview,” *Monthly Labor Review*, December 1999, pp. 13–21.

⁴¹ Daniel Beller and David D. McCarthy, “Private Pension Benefits,” in Turner and Beller, *Trends in Pensions, 1992*.

⁴² EBRI news release no. 584, “More Workers Participating in Pension Plans, But Increase Varies by Demographics” (Washington, DC, Employee Benefit Research Institute, 2001).

⁴³ Yung-Ping Chen, *Employee Preferences as a Factor in Pension Participation by Minority Workers*, Draft Report, U.S. Department of Labor Contract No. 41USC252C3 (Boston, Gerontology Institute, 2001).

⁴⁴ Marjorie Honig, “Minorities Face Retirement: Worklife Disparities Repeated?” in Brett Hammond, Olivia S. Mitchell, and Anna Rappaport, *Forecasting Retirement Needs and Retirement Wealth* (Philadelphia, University of Pennsylvania Press, 2000).

⁴⁵ *Ibid.*

⁴⁶ Sarah Holden and Jack VanDerhei, “401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2002,” *ICI Perspective*, vol. 9, no. 5, and EBRI Issue Brief no. 261 (Washington, DC, Investment Company Institute and Employee Benefit Research Institute, September 2003).