This Is Not Your Parents' Retirement: Comparing Retirement Income Across Generations

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This article examines how retirement income at age 67 is likely to change for baby boomers and persons born in generation X (GenX) compared with current retirees. We use the Social Security Administration's Modeling Income in the Near Term (MINT) model to project retirement income and assets, poverty rates, and replacement rates for current and future retirees at age 67. We find that, in absolute terms, retirement incomes of future cohorts will increase over time, and poverty rates will fall. However, projected income gains are larger for higher than for lower socioeconomic groups, leading to increased income inequality among future retirees. Finally, because postretirement incomes are not expected to rise as much as preretirement incomes, baby boomers and GenXers are less likely to have enough postretirement income to maintain their preretirement standard of living compared with current retirees.

Introduction

On January 1, 2011, the first wave of baby boomers turned age 65. Because boomers have had very different life experiences than their predecessors, researchers and policymakers have speculated on the retirement income prospects of the largest birth cohort (76 million) in American history.

Earlier research by Butrica, Iams, and Smith (2007) assessed the retirement income prospects of future retirees using projections from the Social Security Administration's (SSA's) Modeling Income in the Near Term (MINT) microsimulation model. The authors outlined a number of salient trends that will impact retirement incomes for baby boomers differently than for previous generations. Those trends include the following:

- a rise in educational attainment, especially among women;
- a pronounced drop in marriage rates and coincident rise in divorce rates between 1960 and 1990;
- an increase in the immigrant and minority share of Americans;
- an increase in female labor force participation and a decline in male labor force participation;
- an increase in median earnings of women and a decline in median earnings of men;
- an increase in both earnings and family income inequality;
- a sharp decline in single-earner couples and rise in both dual-earner couples and single-headed families;
- a shift in Social Security benefits away from spouse and widow benefits toward more dual-entitlement and worker-only benefits;

Selected Abbreviations

DB	defined benefit
DC	defined contribution
FRA	full retirement age
GenX	generation X
MINT	Modeling Income in the Near Term

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Selected Abbreviations—*Continued*

RET	retirement earnings test
SIPP	Survey of Income and Program Participation
SSI	Supplemental Security Income

- retirees' rising real incomes and falling poverty rates over the past three decades; and
- stagnant or declining real wage growth between 1970 and 1996, followed by rapid real wage growth in the mid-to-late 1990s.

Butrica, Iams, and Smith (2007) found that while future retirees were projected to have higher real incomes and lower poverty rates than current retirees, future retirees also would replace a lower share of their working years' income in retirement. Those findings were based on MINT3 projections generated in 2002. That model has been updated three times since then. Each update improves on the prior version by using more recent data, improving the projection methods, and updating economic projections based on observed historic trends. This article reassesses the retirement prospects of baby boomers using MINT6 and extends the analysis to include persons born in generation X (GenX).

What is MINT6?

MINT6 is one of a suite of microsimulation models used by SSA to estimate the income, assets, and demographic characteristics of the future retired population. As the basis for its projections, MINT6 uses data from the 2001 and 2004 Survey of Income and Program Participation (SIPP) matched to Social Security administrative earnings and benefit records through 2008. For individuals born from 1926 through 1975, MINT6 projects each person's marital changes, mortality, entry to and exit from Social Security Disability Insurance (DI) rolls, and age of first receipt of Social Security retirement benefits. It also projects family income including Social Security benefits, pension income, asset income, earnings, Supplemental Security Income (SSI), income from coresident household members, and imputed rental income.[1, 2] Although we focus on the income of the aged unit, coresident income is important for determining SSI and poverty.

MINT6 is ideal for this analysis because it directly measures the experiences of survey respondents as of the early 2000s—representing the first half of the lives of baby boomers and the first third of the lives of GenXers—and statistically projects their incomes and characteristics into the future, adjusting for expected demographic and socioeconomic changes. MINT6 also accounts for major changes in the growth of economy-wide real earnings, the distribution of earnings both between and within birth cohorts, and the composition of the retiree population. All of those factors will affect the retirement incomes of future retirees.

Changes Since MINT3

This section outlines changes in MINT that could affect the findings reported earlier in Butrica, Iams, and Smith (2007). MINT6 starts with more recent data than MINT3, with pooled 2001 and 2004 panels of the SIPP matched to Social Security administrative earnings and benefit data through 2008. MINT6 uses demographic and economic assumptions based on *The 2009 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds* (Board of Trustees 2009). MINT3 used starting values from the 1990 through 1993 panels of the SIPP matched to Social Security administrative earnings and benefits data through 2000, and the demographic and economic assumptions were based on the *2002 Trustees Report* (Board of Trustees 2002). Since the early 1990s, however, a number of demographic, economic, and policy changes have occurred that could impact future retirees' economic security in ways that are different from those reported earlier in Butrica, Iams, and Smith (2007).

Since the introduction of the 1990–1993 SIPP panels, the United States has become even more demographically diverse. In 1990, Hispanics represented 9.0 percent of the American population. By 2009, they had grown to 15.8 percent (Census Bureau 2001, Table 15; Census Bureau 2010, Table 6). From 1990 through 2004, the percentage of Americans with at least a high school diploma increased from 77.6 percent to 85.2 percent, and the share with at least a college degree increased from 21.3 percent to 27.7 percent (Census Bureau 2006, Table 214). During this time period, women became increasingly likely to work outside the home. Female labor force participation rates increased slightly from 57.5 percent to 59.2 percent for the population aged 16 or older, but increased dramatically from 45.2 percent to 56.3 percent for those aged 55–64, and from 8.6 percent to 11.1 percent for those aged 65 or older. In contrast, male labor force participation rates declined among most age groups,

but increased slightly for those aged 55–64 and those aged 65 or older (Census Bureau 2006, Table 577). And among full-time wage and salary workers aged 25 or older, the ratio of men's to women's median weekly earnings narrowed from 1.39 in 1990 to 1.27 in 2004 (Census Bureau 2001, Table 621; Census Bureau 2006, Table 632).

In addition to these demographic changes, there have been some policy changes that will undoubtedly impact future retirees. In particular, both the legislated elimination of the retirement earnings test (RET) for individuals above the full retirement age (FRA) in 2000 and the increase in the FRA itself have changed work and benefit take-up incentives for later cohorts compared with earlier cohorts.[3] The percentage of workers covered by traditional defined benefit (DB) pension plans that pay a lifetime annuity, often based on years of service and final salary, has been steadily declining over the past 30 years. From 1980 through 1998, DB pension coverage among workers fell from 38 percent to 21 percent (Department of Labor 2002). In contrast, the percentage of workers with defined contribution (DC) pension plans, which are investment accounts established and often subsidized by employers, but owned and controlled by employees, has been increasing over time. During that same time period, DC coverage increased from 8 percent to 27 percent (Department of Labor 2002). More recently, many employers have frozen their DB plans (Munnell and others 2006). Some experts expect that most private-sector plans will be frozen in the next few years and eventually terminated (Gebhardtsbauer 2006), fueled in part by the passage of the Pension Protection Act in 2006 (Butrica and others 2009). The shift in pensions away from DB plans toward DC plans could significantly alter projected pension incomes.

Finally, the economic landscape has changed dramatically since the data were collected for the 1990–1993 SIPP panels. Most recently, the economy of the United States experienced a recession more severe than any since the Great Depression. Stock prices fell 38 percent between September 2007 and March 2009, causing retirement accounts to lose about $2.7 trillion, 31 percent of their value (Butrica and Issa 2011). Burtless (2009) showed the dramatic effect historic market returns had on portfolio balances for identical workers retiring in different years, with the income generated from those balances replacing from 18 percent to 50 percent of earnings depending solely on the timing of contributions. The author showed that persons retiring in 2000 benefited substantially from historic market returns with replacement rates of 50 percent, although those retiring in 2008 could only expect a replacement rate of 25 percent. Not long before the stock market crashed, the US housing bubble burst with prices falling 32 percent between the second quarter of 2006 and the first quarter of 2009 (Standard & Poor's 2009).

We have also made a number of model improvements since Butrica, Iams, and Smith (2007), all designed to improve the model projections. Those improvements include the following:

- reestimating the labor equations using more recent data to better capture changes in retirement behavior with the elimination of the RET;
- reestimating the job change and pension coverage models using 2001 and 2004 SIPP data to better capture pension changes that occurred since the early 1990s that were the basis of the MINT3 projections;
- reestimating the coresidency model using the 2001 and 2004 SIPP data to better capture more recent coresidency trends. We also expanded the coresidency definition by lowering the age of individuals considered coresidents, from age 30 to 25;
- reestimating the marriage and divorce models using data from the 2001 and 2004 SIPP to better capture more recent trends;
- changing, substantially, the method used to project immigrants—from one based on cloning the full experience of previous immigrants to one based on applying the full set of econometric models included in MINT;
- reestimating the health status models using more recent Health and Retirement Study (HRS) data and improving the correlation of health and disability;
- aligning mortality after age 65 to the *2009 Trustees Report* projections by age, sex, and cohort. Earlier versions were unaligned;
- updating the annuity factors used in MINT to convert assets into income using mortality projections consistent with the *2009 Trustees Report* projections;
- aligning the self-reported SIPP retirement account and financial assets to distributions from the 2004 Survey of Consumer Finance, substantially increasing asset values at the top of the asset distribution, to address known deficiencies in the SIPP asset data; and

- reestimating the home equity and financial asset accumulation models using more recent HRS data.

These changes are detailed in Smith and others (2010); Smith and others (2007); and Smith, Cashin, and Favreault (2005). This article reexamines earlier findings of Butrica, Iams, and Smith (2007) using the updated version of the MINT model. While the body of the article focuses on the current MINT6 projections, the Appendix quantifies in general terms the effects that major model and economic changes have had on projected retirement income.

Methodology

We begin by examining the extent to which the characteristics of future retirees, including education, race, marital status, and projected labor force experience differ from those of current retirees. We then compare current and future retirees' retirement outcomes using both absolute measures (such as family incomes and poverty rates) and relative measures (such as subgroup incomes and replacement rates).

Our sample population is separated into five 10-year birth cohorts representing depression babies (born 1926–1935), war babies (born 1936–1945), leading boomers (born 1946–1955), trailing boomers (born 1956–1965), and GenXers (born 1966–1975).[4] We analyze the characteristics, lifetime earnings, and family incomes of individuals born in those cohorts when they reach age 67 (the age by which most people will have retired), allowing us to compare those cohorts at the same stage in life. Unless otherwise noted, all reported incomes are in 2011 price-adjusted dollars and expressed as per capita values so that husbands and wives equally share family income.[5]

Projections for cohorts born after 1936 are based on MINT6. Projections for depression babies, those born in the 1926–1935 period, are based on MINT5. While the depression babies are included in the MINT6 population, we do not observe them at age 67 in the baseline data because they are older than age 67 at the SIPP interview date. MINT5 projections provide a better representation of depression babies at age 67.

Characteristics of Current and Future Retirees

The projected characteristics of retirees at age 67 in each of the five 10-year cohorts are shown in Table 1. MINT projects changes in marital status among cohorts. Twenty-nine percent of depression babies will be nonmarried compared with about 36 percent of trailing boomers and GenXers. Not only will the share of nonmarried retirees increase in the later cohorts, but the reasons for the increase in nonmarried status will also change dramatically. Trailing-boomer and GenX retirees are more likely than depression baby retirees to never marry or to be divorced, and they are less likely than depression baby retirees to be widowed. Marital status has important implications for the economic well-being of future retirees because among current retirees aged 65 or older, those who never married have the highest poverty rates, followed by those who are divorced, widowed, and married (SSA 2010). The increasing share of unmarried retirees means that future retirees are more likely to enter retirement without access to the income security that spousal income provides, and because they miss out on the economies of shared living, they are more likely to be poor than their married counterparts.

The racial composition of retirees is projected to shift dramatically between the cohorts as minority-group representation increases. Trailing-boomer retirees and especially GenX retirees are more likely than depression baby retirees to be nonwhite. For instance, almost one in five depression baby retirees are in a racial/ethnic minority compared with nearly two in five GenX retirees. The share of foreign-born retirees is expected to more than double, rising from 10 percent of depression baby retirees to 26 percent of GenX retirees. Minorities and immigrants typically have lower earnings and incomes than whites, so the rising share of those subgroups is likely to lower projected future retirement incomes.

In contrast, the projected increases in education and employment are likely to increase future retirement incomes. GenX retirees are almost twice as likely as depression baby retirees to be college educated and about a third as likely to be high school dropouts. Moreover, GenXers, particularly women, are projected to have more labor force experience than depression babies. GenX women are nearly three times as likely to have worked 35 or more years than depression baby women by age 67.[6] Employment gains are more modest for men, whose share with 35 or more years of earnings by age 67 is projected to rise from 69 percent among depression babies to 74 percent among war babies. The share falls to 71 percent among Gen X men who had lower labor force participation rates at younger ages compared with earlier cohorts.

Increased time spent in the labor force, in turn, leads to higher average lifetime earnings among the later cohorts. Our measure of lifetime earnings is the average of the highest 35 years of wage-indexed shared earnings from ages 22 to 67, where shared earnings are computed by first assigning each individual half of the total earnings of the couple in the years when the individual is married and then his or her own earnings in years when single. Table 2 shows that median shared lifetime earnings at age 67 are projected to rise from $30,000 (in 2011 dollars) among depression babies to $51,000 among GenXers. The gains are larger for older adults with college degrees, those with more labor force experience, and those with higher earnings and incomes than they are for older adults with less education, fewer years of labor force experience, and lower earnings and incomes. The lifetime earnings of workers in the war baby cohort increased nearly 30 percent over those in the depression baby cohort, largely reflecting the rise in labor force participation and earnings of women. Lifetime earnings are projected to increase with each successive cohort, though at a decreasing rate.

Projected Family Income

MINT projects that median per capita family income at age 67 will increase from $28,000 among depression babies to $38,000 among war babies; $41,000 among leading boomers; $44,000 among trailing boomers; and $46,000 among GenXers—representing a 64 percent increase from the earliest cohort (depression babies) to the latest cohort (GenXers); see Table 3. The subgroups with the largest gains are

Table 1.
Characteristics of adults at age 67, by birth cohort (in percent)

Characteristic	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
Total	100	100	100	100	100
Marital status					
Never married	4	4	7	9	11
Married	71	68	66	65	64
Widowed	15	12	8	8	7
Divorced	10	15	19	19	18
Race/ethnicity					
Non-Hispanic white	82	79	76	69	61
Non-Hispanic black	8	9	10	12	12
Hispanic	6	7	8	12	18
Other	4	5	6	7	9
Education					
High school dropout	28	13	7	7	9
High school graduate	55	63	63	64	59
College graduate	17	24	30	29	33
Immigration status					
Native born	90	88	86	81	74
Foreign born	10	12	14	19	26
Sex					
Women	54	53	52	52	51
Men	46	47	48	49	49
Labor force experience (years) [a]					
Women					
Less than 10	24	13	8	6	6
11 to 34	57	52	41	38	38
35 or more	19	35	51	56	56
Men					
Less than 10	3	2	3	3	3
11 to 34	28	23	24	24	26
35 or more	69	74	74	74	71

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

a. Labor force experience is the number of years with positive earnings from ages 22 to 67.

Table 2.
Median shared lifetime earnings of adults at age 67, by individual characteristics and birth cohort (in thousands, 2011 dollars)

Characteristic	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
Total	30	39	45	48	51
Marital status					
Never married	23	32	40	38	45
Married	31	41	48	51	54
Widowed	25	30	34	38	38
Divorced	28	36	42	46	52
Race/ethnicity					
Non-Hispanic white	32	41	49	53	58
Non-Hispanic black	21	31	39	39	44
Hispanic	19	21	27	33	37
Other	15	25	31	39	45
Education					
High school dropout	22	20	20	22	24
High school graduate	31	37	42	43	45
College graduate	43	54	64	72	77
Immigration status					
Native born	31	40	48	51	55
Foreign born	19	22	25	33	38
Sex					
Women	28	36	43	46	48
Men	33	42	48	51	55
Labor force experience (years) [a]					
Women					
Less than 10	19	18	11	8	8
11 to 34	28	33	33	33	33
35 or more	37	45	53	56	61
Men					
Less than 10	3	2	3	5	3
11 to 34	20	23	25	26	28
35 or more	38	47	55	58	65
Shared lifetime earnings quintile [b]					
Bottom	10	12	14	16	16
Second	22	28	32	34	35
Third	30	39	45	48	51
Fourth	39	50	60	65	71
Top	52	72	90	101	114
Income quintile [c]					
Bottom	14	16	18	19	19
Second	25	32	37	39	40
Third	31	40	47	50	53
Fourth	37	48	57	62	69
Top	44	60	76	87	99

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

a. Labor force experience is the number of years with positive earnings from ages 22 to 67.

b. Shared lifetime earnings is the average of highest 35 years of wage-indexed shared earnings from ages 22 to 67, where shared earnings are computed by assigning each individual half of the total earnings of the couple in the years when the individual is married and his or her own earnings in years when nonmarried.

c. Income includes annuitized income from assets, earnings, SSI payments, imputed rental income, Social Security benefits, DB pension income, and annuitized income from retirement accounts.

Table 3.
Median per capita family income of adults at age 67, by individual characteristics and birth cohort (in thousands, 2011 dollars)

Characteristic	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
Total	28	38	41	44	46
Marital status					
Never married	22	28	31	31	37
Married	29	40	44	47	47
Widowed	26	32	35	40	40
Divorced	25	31	34	40	46
Race/ethnicity					
Non-Hispanic white	30	42	46	49	53
Non-Hispanic black	18	24	27	29	35
Hispanic	16	19	24	29	32
Other	20	26	29	40	45
Education					
High school dropout	18	16	16	20	21
High school graduate	29	35	36	37	38
College graduate	51	66	70	77	78
Immigration status					
Native born	29	39	43	46	49
Foreign born	20	24	27	33	37
Sex					
Women	26	35	40	41	43
Men	30	40	43	46	49
Labor force experience (years) [a]					
Women					
Less than 10	20	19	12	11	11
11 to 34	27	33	30	30	30
35 or more	32	44	52	53	56
Men					
Less than 10	10	9	9	10	9
11 to 34	23	23	24	25	27
35 or more	34	45	51	53	59
Shared lifetime earnings quintile [b]					
Bottom	13	13	14	14	15
Second	21	28	29	30	30
Third	28	37	41	42	43
Fourth	35	52	57	60	64
Top	52	81	93	105	114
Income quintile [c]					
Bottom	10	11	12	13	14
Second	19	24	26	28	28
Third	28	38	41	44	46
Fourth	41	57	64	67	72
Top	75	115	123	136	146

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

a. Labor force experience is the number of years with positive earnings from ages 22 to 67.

b. Shared lifetime earnings is the average of highest 35 years of wage-indexed shared earnings from ages 22 to 67, where shared earnings are computed by assigning each individual half of the total earnings of the couple in the years when the individual is married and his or her own earnings in years when nonmarried.

c. Income includes annuitized income from assets, earnings, SSI payments, imputed rental income, Social Security benefits, DB pension income, and annuitized income from retirement accounts.

never married and divorced, racial/ethnic minorities, college graduates, those with 35 or more years in the labor force, and those with the highest shared lifetime earnings and retirement incomes. Income inequality is projected to increase dramatically over time. Among depression babies, median income in the top income quintile will be 7.5 times higher than in the bottom income quintile. Among GenXers, the income gap will increase to a factor of 10.4.

Nearly all retirees will receive income from nonretirement income sources—including income from assets, earnings, SSI payments, and imputed rental income (Table 4). Among depression babies, 45 percent have earnings at age 67, and 5 percent receive SSI payments. In addition, 88 percent of depression babies have net assets and 80 percent have home equity that could support retirement consumption.[7] We use an annuity measure to convert net assets into a measure of annual income and a rate of return to convert home equity into imputed rental income.[8] The share with asset income declines slightly between depression and war babies as half of the latter group

Table 4.
Family income of adults at age 67, by income source, per capita family income quintile, and birth cohort (in percent)

Income source and quintile	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
All					
Total income	100	100	100	100	100
Income from assets	88	84	84	90	92
Earnings	45	52	51	51	50
SSI	5	5	4	3	2
Imputed rental income	80	81	81	83	83
Social Security benefits	91	93	94	95	94
DB pension income	56	49	39	32	25
Retirement account income	47	58	74	79	80
Bottom income quintile					
Total income	99	99	99	100	100
Income from assets	70	64	66	75	79
Earnings	18	19	15	15	13
SSI	21	23	17	13	10
Imputed rental income	56	51	56	62	65
Social Security benefits	77	82	82	84	80
DB pension income	20	17	10	10	9
Retirement account income	12	14	31	39	47
Middle income quintile					
Total income	100	100	100	100	100
Income from assets	93	88	86	93	94
Earnings	48	57	57	57	61
SSI	1	0	0	0	0
Imputed rental income	86	88	86	87	86
Social Security benefits	96	97	97	98	98
DB pension income	69	59	46	36	27
Retirement account income	51	66	85	88	87
Top income quintile					
Total income	100	100	100	100	100
Income from assets	98	97	96	99	99
Earnings	67	73	75	73	69
SSI	0	0	0	0	0
Imputed rental income	92	94	94	92	92
Social Security benefits	90	94	96	97	96
DB pension income	66	56	53	44	37
Retirement account income	79	87	95	96	96

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

reached age 67 after the 2008 stock market crash and subsequent recession. Asset accumulation increases for trailing boomers and GenXers who have more years after the market crash to rebuild assets. Retirees' earnings and imputed rental incomes are projected to increase across cohorts. As older adults' incomes and assets increase over time, the share with SSI payments is projected to decrease.[9]

Nearly all retirees will also receive income from retirement income sources—including Social Security benefits, DB pensions, and retirement accounts (for example, DC pensions, individual retirement accounts (IRAs), and Keogh plans). Among depression babies, 91 percent receive Social Security benefits, 56 percent have DB pensions, and 47 percent have retirement accounts. Reflecting the shift in employer pensions from DB to DC, retirees with retirement accounts are projected to increase and those with DB pensions are projected to decrease among later cohorts. Among GenXers, only 25 percent will have DB pensions, while 80 percent will have retirement accounts. The share of GenXers with Social Security benefits is also projected to increase, due in part to an increase in Social Security coverage.

Sources of income vary by income quintile. Older adults in the bottom income quintile are less likely than those in the top quintile to have income from all sources except SSI. The share of 67-year-olds in the bottom quintile who have earnings falls from 18 percent of depression babies to 13 percent of GenXers. In contrast, the share in the middle quintile with earnings rises from 48 percent of depression babies to 61 percent of GenXers. Moreover, the share in the top quintile with earnings rises from 67 percent of depression babies to 75 percent of leading boomers, before falling to 69 percent of GenXers.

Surprisingly, only about 80 percent of seniors in the bottom quintile receive Social Security income in any cohort. Many of those retirees worked in uncovered jobs or immigrated to the United States late in their lives and do not qualify for Social Security based on their own earnings. In contrast, MINT projects that Social Security take-up is high even among top-income seniors who are more likely to work at older ages than are their counterparts with lower incomes. The elimination of the RET after the FRA means that high-income seniors can work without reducing their Social Security benefits. The share of top-income 67-year-olds with Social Security income rises from 90 percent of depression babies to 97 percent of trailing boomers and 96 percent of GenXers.

What is driving the changes in retirement income over time? In fact, all sources of income except for DB pensions and SSI are projected to increase significantly across cohorts (Table 5).[10] DB pensions are projected to provide a third ($2,000) as much for GenXers as they are for depression babies ($6,000). However, income from retirement accounts is projected to be six times higher among GenXers ($12,000) than among depression babies ($2,000). Thus, the increase in retirement account income more than offsets the decline in DB pensions, and total retirement plan income (DB plus DC) is expected to increase across cohorts from $8,000 for depression babies to $14,000 for GenXers. But there are stark differences by income level. Average combined pension income (DB plus DC) hovers around $1,000 for retirees in the bottom income quintile, regardless of cohort. For middle-income seniors, combined pension income rises from $7,000 for depression babies to $10,000 for war babies, before falling to $8,000 for GenXers. However, for those in the top income quintile, combined pension income is projected to increase with each successive cohort from $18,000 for depression babies to $29,000 for leading boomers, and to $45,000 for GenXers. In addition to the increase in income from retirement plans, income from assets is projected to be 1.9 times higher for GenXers than for depression babies; earnings, 1.6 times higher; imputed rental income, 2.5 times higher; and Social Security benefits, 1.6 times higher.

Social Security is the main source of income for low-income seniors, while income from assets is the predominant income source for high-income seniors (Table 6). Among depression babies, Social Security accounts for 61 percent of total income for those in the bottom income quintile, 38 percent of total income for those in the middle income quintile, and only 9 percent of total income for those in the top income quintile. In contrast, income from assets represents only 8 percent of total income for low-income retirees and 16 percent of total income for middle-income retirees, but 49 percent of total income for high-income retirees. Over time, income from assets becomes considerably more important for low- and high-income retirees, but less important for middle-income retirees. The importance of Social Security, on the other hand, remains relatively constant, regardless of income level.

For middle-income retirees, the increase in total income between the depression baby and GenX cohorts is driven primarily by an increase in earnings at age 67—from 14 percent to 24 percent of total income. In contrast, the share of total income from earnings falls over time for low- and high-income retirees. For example, earnings at age 67 account for 25 percent of total income for high-income depression babies, but only 13 percent of total income for high-income GenXers.

Projected Poverty

Given the projected increase in real family incomes over time, it is not surprising that poverty rates are projected to decline (Table 7). At age 67, 7 percent of depression babies are expected to live in poverty compared with 6.1 percent of trailing boomers and 5.7 percent of GenXers. Poverty rates for divorced retirees are projected to decline more than half over time, from 15.9 percent of depression babies to only 6.9 percent of GenXers. Poverty rates for Hispanics

Table 5.
Mean per capita family income of adults at age 67, by income source, per capita family income quintile, and birth cohort (in thousands, 2011 dollars)

Income source and quintile	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
All					
Total income	44	58	64	75	81
Income from assets	16	19	21	30	31
Earnings	9	11	12	13	14
SSI	0	0	0	0	0
Imputed rental income	2	3	4	5	5
Social Security benefits	10	12	14	15	16
DB pension income	6	7	5	3	2
Retirement account income	2	4	7	10	12
Bottom income quintile					
Total income	9	11	12	13	13
Income from assets	1	1	1	1	2
Earnings	1	1	1	1	1
SSI	1	1	1	1	1
Imputed rental income	1	1	1	1	1
Social Security benefits	6	7	7	8	8
DB pension income	1	1	0	0	0
Retirement account income	0	0	0	1	1
Middle income quintile					
Total income	28	38	42	44	46
Income from assets	5	4	5	6	6
Earnings	4	7	9	10	11
SSI	0	0	0	0	0
Imputed rental income	2	3	4	4	4
Social Security benefits	11	13	15	16	17
DB pension income	6	7	4	2	1
Retirement account income	1	3	5	6	7
Top income quintile					
Total income	124	159	175	224	243
Income from assets	61	80	87	127	131
Earnings	30	32	32	33	32
SSI	0	0	0	0	0
Imputed rental income	4	6	9	12	14
Social Security benefits	11	15	18	20	22
DB pension income	13	14	12	7	7
Retirement account income	5	11	17	26	38

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

are also projected to decline dramatically from 15.8 percent to only 7.8 percent across cohorts. However, not all groups are expected to do so well. Among high school dropouts, poverty rates are projected to increase from 13.5 percent to 24.9 percent between the earliest cohort (depression babies) to the middle cohort (leading boomers), before declining to 18 percent for the two latest cohorts (trailing boomers and GenXers). Poverty rates are especially high among depression babies with fewer than 10 years of employment and are projected to increase even more over time as the composition of that group changes. Given the projected increase in minorities and immigrants, as well as the historic increase in women's labor force participation, retirees with low labor force attachment are increasingly low-educated, low-skilled, and disabled. Not surprisingly, those retirees are projected to have very high poverty rates.

The contribution to poverty of any subgroup of the population to the overall poverty rate is the product of

Table 6.
Share of mean per capita family income of adults at age 67, by income source, per capita family income quintile, and birth cohort (as a percentage of subgroup total income)

Income source and quintile	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
All					
Total income	100	100	100	100	100
Income from assets	35	33	33	39	38
Earnings	20	20	20	17	17
SSI	0	0	0	0	0
Imputed rental income	5	6	7	7	7
Social Security benefits	22	21	22	20	20
DB pension income	14	13	8	4	3
Retirement account income	4	7	11	13	15
Bottom income quintile					
Total income	100	100	100	100	100
Income from assets	8	6	8	10	12
Earnings	7	8	6	7	5
SSI	8	9	7	5	4
Imputed rental income	8	8	9	9	10
Social Security benefits	61	64	64	63	62
DB pension income	6	5	3	2	1
Retirement account income	1	2	4	4	5
Middle income quintile					
Total income	100	100	100	100	100
Income from assets	16	12	12	13	13
Earnings	14	19	21	22	24
SSI	0	0	0	0	0
Imputed rental income	7	8	9	9	9
Social Security benefits	38	34	36	36	37
DB pension income	20	19	11	5	3
Retirement account income	4	8	12	14	15
Top income quintile					
Total income	100	100	100	100	100
Income from assets	49	50	50	57	54
Earnings	25	20	19	15	13
SSI	0	0	0	0	0
Imputed rental income	3	4	5	5	6
Social Security benefits	9	9	10	9	9
DB pension income	10	9	7	3	3
Retirement account income	4	7	10	12	16

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

the group's poverty rate and its share of the population (Table 8). A subgroup will contribute more to overall poverty if its share in the population is large and its poverty rate is high. Adults age 67 with less than 10 years of earnings have very high poverty rates, which are projected to increase over time. Because that subgroup comprises a declining share of 67-year-old women, it contributes less to overall poverty among GenXers (1.3 percentage points) than among depression babies (1.8 percentage points). However, because the size of that subgroup remains constant among 67-year-old men, it contributes more to overall poverty among GenXers than among depression babies.

While poverty rates are projected to decline over time for foreign-born seniors, those persons represent

Table 7.
Poverty rates of adults at age 67, by individual characteristics and birth cohort (in percent)

Characteristic	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
Total	7.0	7.0	7.0	6.1	5.7
Marital status					
Never married	21.6	23.3	19.9	18.6	14.1
Married	4.4	3.4	3.4	2.9	3.3
Widowed	9.6	12.3	14.8	10.3	11.2
Divorced	15.9	14.8	11.8	9.3	6.9
Race/ethnicity					
Non-Hispanic white	5.1	4.6	4.7	3.8	3.4
Non-Hispanic black	14.9	14.9	14.3	13.1	11.1
Hispanic	15.8	16.5	13.9	9.4	7.8
Other	15.9	16.8	15.2	11.7	9.8
Education					
High school dropout	13.5	21.2	24.9	17.9	18.0
High school graduate	5.0	6.2	7.0	6.6	6.0
College graduate	2.7	1.6	2.7	1.8	1.9
Immigration status					
Native born	6.1	5.6	5.8	5.1	4.4
Foreign born	15.1	17.7	14.8	10.4	9.3
Sex					
Women	8.0	8.8	8.5	7.4	6.5
Men	5.8	5.1	5.4	4.7	4.9
Labor force experience (years) [a]					
Women					
Less than 10	14.1	25.2	39.9	43.1	43.4
11 to 34	7.1	9.1	11.1	10.9	8.8
35 or more	3.2	2.1	1.5	1.0	0.8
Men					
Less than 10	35.2	46.2	56.5	45.5	54.4
11 to 34	12.2	14.4	15.0	12.9	11.5
35 or more	1.8	0.8	0.6	0.7	0.5
Shared lifetime earnings quintile [b]					
Bottom	25.2	30.5	31.5	27.9	26.5
Second	5.5	3.3	2.5	1.8	1.4
Third	2.2	1.0	0.7	0.6	0.4
Fourth	1.5	0.2	0.2	0.1	0.1
Top	0.5	0.2	0.2	0.1	0.0

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

NOTE: Consistent with the official poverty definition, family income for poverty includes coresident income, but excludes imputed rent.

a. Labor force experience is the number of years with positive earnings from ages 22 to 67.

b. Shared lifetime earnings is the average of highest 35 years of wage-indexed shared earnings from ages 22 to 67, where shared earnings are computed by assigning each individual half of the total earnings of the couple in the years when the individual is married and his or her own earnings in years when nonmarried.

a rising share of the aged population whose poverty rates are still higher than their native-born counterparts. Consequently, foreign-born retirees will contribute more to poverty among GenXers (2.4 percentage points) than among depression babies (1.5 percentage points). We see a similar pattern among never-married seniors. While their poverty rates are projected to fall over time, never-married seniors still have higher poverty rates on average than other marital groups. And because their share of 67-year-olds is projected to increase over time, never-married retirees will contribute more to poverty among GenXers (1.5 percentage points) than among depression babies (0.9 percentage points). For the same reasons, Hispanics' contributions to poverty are also projected to increase over time.

Table 8.
Contribution to poverty of adults at age 67, by individual characteristics and birth cohort (in percent)

Characteristic	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
Total	7.0	7.0	7.0	6.1	5.7
Marital status					
Never married	0.9	1.0	1.4	1.7	1.5
Married	3.1	2.3	2.3	1.9	2.1
Widowed	1.5	1.5	1.2	0.8	0.8
Divorced	1.5	2.2	2.2	1.7	1.2
Race/ethnicity					
Non-Hispanic white	4.2	3.6	3.5	2.6	2.1
Non-Hispanic black	1.2	1.4	1.5	1.5	1.3
Hispanic	1.0	1.2	1.2	1.1	1.4
Other	0.6	0.8	0.9	0.8	0.9
Education					
High school dropout	3.7	2.8	1.8	1.3	1.5
High school graduate	2.8	3.9	4.4	4.2	3.5
College graduate	0.5	0.4	0.8	0.5	0.6
Immigration status					
Native born	5.5	4.9	5.0	4.1	3.3
Foreign born	1.5	2.1	2.0	2.0	2.4
Sex					
Women	4.3	4.6	4.4	3.8	3.3
Men	2.7	2.4	2.6	2.3	2.4
Labor force experience (years) [a]					
Women					
Less than 10	1.8	1.8	1.6	1.4	1.3
11 to 34	2.2	2.5	2.4	2.1	1.7
35 or more	0.3	0.4	0.4	0.3	0.2
Men					
Less than 10	0.6	0.6	0.7	0.5	0.8
11 to 34	1.5	1.6	1.7	1.5	1.4
35 or more	0.6	0.3	0.2	0.3	0.2
Shared lifetime earnings quintile [b]					
Bottom	5.0	6.1	6.3	5.6	5.3
Second	1.1	0.7	0.5	0.4	0.3
Third	0.4	0.2	0.1	0.1	0.1
Fourth	0.3	0.0	0.0	0.0	0.0
Top	0.1	0.0	0.0	0.0	0.0

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

NOTE: Contribution to poverty of any subgroup is equal to the product of its share in the population and its own poverty rate.

a. Labor force experience is the number of years with positive earnings from ages 22 to 67.

b. Shared lifetime earnings is the average of highest 35 years of wage-indexed shared earnings from ages 22 to 67, where shared earnings are computed by assigning each individual half of the total earnings of the couple in the years when the individual is married and his or her own earnings in years when nonmarried.

Projected Relative Income

Although family income per person is projected to increase across cohorts for the majority of retirees, not everyone will be equally well-off in later cohorts. To provide a better sense of the relative economic well-being of various subgroups, we also present the ratio of median income in a subgroup to median income of its cohort group (Table 9). Using this gauge of retirement security, we find that many historically vulnerable populations will have lower relative incomes in later cohorts than in the depression baby cohort, including widows, high school dropouts and graduates, those with less than 35 years of work experience, and those with earnings and income in the lowest income quintiles.

For example, median per capita family income for high school dropouts in the depression baby cohort is 64 percent of the median family income among all depression babies. The comparable statistic is only 46 percent for those in the GenX cohort. This is because overall median income increases 64 percent from the earliest cohort (depression baby) to the latest cohort (GenX), while median income for high school dropouts increases only 17 percent (see Table 3). So even though high school dropouts have higher family incomes in the GenX cohort than in the depression baby cohort, they are relatively worse-off compared with other GenXers.

Other subgroups, however, are expected to be relatively better-off in the GenX cohort than in the depression baby cohort. Never-married and divorced retirees, those with strong labor force attachments, and those with earnings and incomes in the highest quintiles will have higher relative incomes in the GenX cohort than in the depression baby cohort. GenXers in all racial/ethnic subgroups see gains in relative incomes compared with depression babies, but the gains are larger for minorities (particularly for Hispanics and Asians).[11] GenXers in all education subgroups see declines in relative incomes compared with depression babies, but the losses are greatest for high school graduates. These nonintuitive results occur because the relative sizes and income growth rates of racial/ethnic and education groups change over time. Median income is lower for minorities than for whites. But because the incomes of minorities are projected to increase over time by much more than those of whites, minorities in later cohorts are better-off than minorities in earlier cohorts—in both absolute and relative terms.[12]

Never-married and divorced retirees, historically vulnerable populations, will also have higher relative incomes in the GenX cohort than in the depression baby cohort. For those adults, the growth in median per capita family income from the earliest cohort (depression baby) to the latest cohort (GenX) exceeds the growth in overall average income between the cohorts, increasing their relative rank within their cohort.

In general, MINT6 predicts changes over time in the relative income ranking of important subgroups within specific cohorts. Some subgroups—mostly the historically advantaged—will experience substantial gains in real per capita income, and other subgroups—mostly the historically disadvantaged—will experience minimal gains over time. Racial/ethnic and education disparities are expected to narrow, while lifetime earnings and labor force attachment disparities are expected to increase.

Projected Replacement Rates

Income replacement rates measure the extent to which individuals' retirement incomes replace their employment incomes (Steuerle, Spiro, and Carasso 2000; Biggs and Springstead 2008). The value of those replacement rates depends largely on how employment income is measured. For example, replacement rates based on peak earnings will often generate lower values than those based on final earnings, which can decline as workers transition into retirement. Instead of using peak or final earnings in the replacement rate calculation, we use measures of lifetime earnings that reflect available resources over individuals' careers from which they could reasonably accrue retirement income.

We calculate two replacement rates that are based on shared earnings from ages 22 to 67, but that differ in how those earnings are indexed. The first replacement rate—largely based on the Social Security benefit formula—wage indexes shared earnings to age 67, takes the highest 35 years of earnings, and then averages them. The second replacement rate price indexes shared earnings to 2011 dollars, takes the highest 35 years of earnings, and then averages them. Both replacement rates measure the extent to which income at age 67 replaces average shared lifetime earnings. The wage-adjusted replacement rate accounts for increases in the standard of living over time, as is done in the Social Security benefit formula. The price-adjusted replacement rate accounts for

Table 9.
Ratio of subgroup to cohort median per capita family income of adults at age 67, by individual characteristics and birth cohort (in percent)

Characteristic	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
Total	100	100	100	100	100
Marital status					
Never married	77	74	75	70	81
Married	104	107	108	107	104
Widowed	91	86	85	91	87
Divorced	88	83	83	91	102
Race/ethnicity					
Non-Hispanic white	108	112	112	113	116
Non-Hispanic black	63	63	66	65	76
Hispanic	58	49	58	66	70
Other	70	69	71	92	99
Education					
High school dropout	64	44	40	46	46
High school graduate	104	94	87	85	83
College graduate	182	175	168	177	170
Immigration status					
Native born	103	104	105	105	107
Foreign born	70	65	65	75	80
Sex					
Women	94	94	96	95	94
Men	107	106	104	105	108
Labor force experience (years) [a]					
Women					
Less than 10	72	51	29	24	24
11 to 34	95	88	72	70	67
35 or more	115	118	125	121	122
Men					
Less than 10	35	23	21	22	19
11 to 34	81	62	58	58	60
35 or more	121	120	123	123	129
Shared lifetime earnings quintile [b]					
Bottom	45	34	33	32	33
Second	76	73	70	69	66
Third	98	98	100	97	95
Fourth	125	137	138	137	140
Top	186	215	226	240	249
Income quintile [c]					
Bottom	36	30	29	29	30
Second	68	64	63	63	62
Third	100	100	100	100	100
Fourth	146	152	155	154	157
Top	269	306	297	312	320

Source: Authors' tabulations of MINT5 and MINT6 (see text for details).

a. Labor force experience is the number of years with positive earnings from ages 22 to 67.

b. Shared lifetime earnings is the average of highest 35 years of wage-indexed shared earnings from ages 22 to 67, where shared earnings are computed by assigning each individual half of the total earnings of the couple in the years when the individual is married and his or her own earnings in years when nonmarried.

c. Income includes annuitized income from assets, earnings, SSI payments, imputed rental income, Social Security benefits, DB pension income, and annuitized income from retirement accounts.

increases in the cost of living. Because wages typically grow faster than prices, replacement rates based on wage-adjusted earnings tend to be lower than those based on price-adjusted earnings.[13]

MINT projects that median wage-adjusted replacement rates will increase from 95 percent to 98 percent from the earliest cohort (depression baby) to the next cohort (war babies), but then steadily decline over time reaching 84 percent for the latest cohort (GenX); see Table 10. The share of retirees with less than 100 percent replacement rates is projected to decline from 53 percent of depression babies to 51 percent of war babies, and then increase to 60 percent of trailing boomers and 61 percent of GenXers. Given their reduced expenses, however, many experts say that retirees will only need 75 percent to 85 percent of their preretirement income to maintain their preretirement living standards. Using this lower standard, 39 percent of leading boomers, 41 percent of trailing boomers, and 43 percent of GenXers will fail to have enough income at age 67 to maintain their preretirement standard of living compared with 35 percent of depression babies.

As expected, price-adjusted replacement rates are higher than wage-adjusted replacement rates. As with wage-adjusted replacement rates, median price-adjusted replacement rates increase from the earliest cohort (depression baby) to the very next cohort (war baby) and then fall for later cohorts; however, the subsequent decline in price-adjusted replacement rates is not as large as with wage-adjusted rates—a result of differential real wage growth between cohorts. Median price-adjusted replacement rates rise from 109 percent for depression babies to 119 percent for war babies, before falling to 110 percent for GenXers. About a quarter of all 67-year-olds in every cohort is projected to have retirement incomes that replace less than 75 percent of their price-indexed lifetime earnings.

Median wage-adjusted replacement rates at age 67 are higher for lower lifetime earners than for higher lifetime earners (Table 11). This reflects the progressive Social Security benefit formula. Those replacement rates are also higher for persons at age 67 with high income. The high-income group accumulates more savings, more pensions, and are more likely to work at age 67 than those in the low-income group. High-income retirees also benefit more from tax-free accumulations in pensions that lower their relative earnings while working in order to accumulate higher pension incomes in retirement (Kawachi, Smith, and Toder 2005). That group also benefits more from the relatively higher earnings on their investments than do low-income retirees.

Table 10.
Median and distribution of replacement rates of adults at age 67, by birth cohort (in percent)

Median and distribution	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
			Wage-adjusted denominator [a]		
Median	95	98	89	86	84
Distribution					
< 25%	3	2	3	2	2
< 50%	13	13	17	17	18
< 75%	35	34	39	41	43
< 100%	53	51	57	60	61
< 200%	85	84	88	88	89
			Price-adjusted denominator [b]		
Median	109	119	116	113	110
Distribution					
< 25%	2	1	2	1	1
< 50%	8	7	7	7	8
< 75%	26	22	23	24	25
< 100%	44	39	40	42	44
< 200%	80	79	81	82	82

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

a. Wage-adjusted replacement rates are calculated as the ratio of income at age 67 to wage-adjusted shared lifetime earnings from ages 22 to 67. Income for replacement rates does not include coresident income or imputed rental income.

b. Price-adjusted replacement rates are calculated as the ratio of income at age 67 to price-adjusted shared lifetime earnings from ages 22 to 67. Income for replacement rates does not include coresident income or imputed rental income.

Table 11.
Median wage-adjusted replacement rates of adults at age 67, by individual characteristics and birth cohort (in percent)

Characteristic	Depression babies (1926–1935)	War babies (1936–1945)	Leading boomers (1946–1955)	Trailing boomers (1956–1965)	GenXers (1966–1975)
Total	95	98	89	86	84
Marital status					
Never married	100	102	93	84	83
Married	94	97	89	86	83
Widowed	103	107	101	98	97
Divorced	90	91	82	83	80
Race/ethnicity					
Non-Hispanic white	95	99	91	87	84
Non-Hispanic black	91	85	76	79	76
Hispanic	87	92	87	83	81
Other	140	118	99	96	96
Education					
High school dropout	86	89	88	92	82
High school graduate	93	94	84	82	80
College graduate	123	116	101	97	91
Immigration status					
Native born	94	97	88	85	82
Foreign born	112	115	100	93	91
Sex					
Women	96	101	91	85	82
Men	94	95	87	87	85
Labor force experience (years) [a]					
Women					
Less than 10	113	119	133	135	124
11 to 34	95	102	87	84	83
35 or more	87	96	92	84	80
Men					
Less than 10	395	483	250	211	241
11 to 34	110	99	90	91	91
35 or more	87	93	86	85	83
Shared lifetime earnings quintile [b]					
Bottom	145	129	110	103	104
Second	93	93	83	81	79
Third	86	88	82	81	77
Fourth	85	96	88	84	82
Top	93	99	92	87	84
Income quintile [c]					
Bottom	61	65	60	60	59
Second	68	68	62	63	62
Third	84	87	81	79	78
Fourth	106	114	105	101	98
Top	180	191	155	152	146

SOURCE: Authors' tabulations of MINT5 and MINT6 (see text for details).

NOTE: Wage-adjusted replacement rates are calculated as the ratio of income at age 67 to wage-adjusted shared lifetime earnings from ages 22 to 62. Income for replacement rates does not include coresident income or imputed rental income.

a. Labor force experience is the number of years with positive earnings from ages 22 to 67.

b. Shared lifetime earnings is the average of highest 35 years of wage-indexed shared earnings from ages 22 to 67, where shared earnings are computed by assigning each individual half of the total earnings of the couple in the years when the individual is married and his or her own earnings in years when nonmarried.

c. Income includes annuitized income from assets, earnings, SSI payments, imputed rental income, Social Security benefits, DB pension income, and annuitized income from retirement accounts.

While the top-income group has higher replacement rates than the bottom-income group, replacement rates fall more over time for those with the highest incomes than for those with the lowest incomes. The median replacement rate of GenXers in the top-income group is close to 20 percent lower than the median replacement rate of depression babies in the same income quintile (146 percent and 180 percent, respectfully). A similar drop in replacement rates is projected for college graduates, falling from 123 percent among depression babies to 91 percent for GenXers.

A number of factors explain these trends including changes in women's earnings, differences in historic investment returns, and differences in saving preferences. Higher-educated men born in the depression were more likely to have nonworking wives than were lower-educated men. Those wives contribute no earnings in the denominator of the replacement rate, but benefit from Social Security spouse benefits, yielding higher replacement rates among depression baby retirees with high incomes and college degrees. But spouse benefits decline sharply over time as more women work at higher wages, thus lowering replacement rates among GenX retirees with high incomes and college degrees.

In addition, depression babies reached age 67 from 1993 through 2002. The bulk of those seniors experienced exceptionally high rates of return on equities as the stock market boomed in the 1982–2000 period. Investments for later cohorts plummeted as the stock market crashed in 2001 and again in 2008. The gains experienced by depression baby retirees and losses experienced by baby boom and GenX retirees are more concentrated among those with high incomes and college degrees because they had more savings invested in the stock market than lower-income and lower-educated seniors. As a result, replacement rates are projected to decline from the earliest cohort (depression baby) to the latest cohort (GenX), particularly for retirees with high incomes and college educations.

Discussion

A number of demographic and economic factors will affect income trends over time. Because the Social Security benefit formula pays benefits based on one's own earnings and a spouse's earnings, many lower-earning women receive Social Security spouse and survivor (auxiliary) benefits and do not reap higher Social Security benefits for their own work effort (Butrica and others 2006). As women work more at higher wages and the gap between men's and women's earnings closes, the share of women receiving benefits based on their husband's earnings will fall. This transition will lower replacement rates over time.

The shift from DB to DC pensions has changed retirement income dynamics. DB pension plans typically pay workers benefits based on tenure and late-career earnings. DC pensions accumulate value as long as workers contribute to those plans and their investments earn a rate of return above inflation. Leading boomers, however, got the worst of both plans: They were denied their high accrual years as plans switched from DB to DC plans and had relatively few years to build retirement account balances before retirement (Butrica and others 2009).

Higher divorce rates and the rising share of individuals who forego marriage in later cohorts means that a larger share of later cohorts will not benefit from the economic security of spousal income in periods of unemployment or disability, leaving many single workers economically vulnerable in old age (Johnson, Mermin, and Uccello 2006).

The civil rights movements and subsequent anti-discrimination labor laws have lessened the racial disparities in earnings, and increased educational attainment means that more workers have access to rising prosperity as long as they work and invest in their futures.

Finally, the increase in the Social Security normal retirement age for cohorts born after 1937 will systematically lower Social Security replacement rates for retirees claiming benefits at the same age in earlier cohorts.

Conclusions

Despite the numerous demographic, economic, and policy changes that have occurred since the early 1990s, the general findings of earlier research by Butrica, Iams, and Smith (2007) have not changed. Future retirees are projected to have higher incomes and lower poverty rates, and so their prospects look better than current retirees in absolute terms. However, future retirees are also projected to have lower replacement rates, and so their prospects are actually worse than current retirees in relative terms. For example, the typical GenX retiree is projected to have an income of $46,000 at age 67. In contrast, the typical depression baby retiree had income of only $28,000. However, the income of the GenX retiree is projected to replace only 84 percent of preretirement

earnings—significantly less than the 95 percent replacement rate for the depression baby retiree.

Gains in retirement income are largely going to higher socioeconomic groups (whites, the college educated, high earners, and workers with strong labor force attachments), than to lower socioeconomic groups, leading to rising retirement income inequality. Regardless of the measure of well-being, certain baby boom and GenX subgroups will remain economically vulnerable, including unmarried retirees, non-Hispanic blacks, high school dropouts, those with weak labor force attachments, and those with the lowest lifetime earnings. While these economically vulnerable subgroups typically have higher than average replacement rates, high replacement rates do not ensure economic well-being.

Projecting incomes over the next several decades involves much uncertainty, and future developments could lead to outcomes very different from our forecasts. MINT includes historic data through 2008, capturing only the early parts of the recession. Most depression babies and war babies retired by the time the recession hit. Unemployment rates were lower for older workers than for younger workers (Butrica, Johnson, and Smith 2011), so the impact of unmodeled job losses on future retirement security will be larger for trailing boomers and GenXers than for leading boomers. The unusually long unemployment spells that characterized the Great Recession could seriously scar workers who lost their jobs and lead to worse outcomes than MINT projects. Alternatively, average wages could bounce back to their prerecession levels, offsetting much of the recessionary losses. The recession might also induce some workers to change their behavior to improve their retirement security either by working more hours or by delaying retirement. Furthermore, MINT calculates Social Security benefits under current law. Promised Social Security benefits may change as a result of reforms needed to address long-term solvency.

Appendix: How Have MINT Projections Changed?

Despite the numerous data changes between MINT6 and MINT3 projections, the substantive conclusions remain the same. Later cohorts can expect higher real incomes and lower poverty rates, but declining replacement rates compared with depression babies.

Changes in mortality projections mean than MINT6 has slightly fewer widowed boomers than MINT3 because of increasing projected life expectancy. MINT6 projects a lower share of boomers without high school diplomas compared with MINT3. This is partly due to unmodeled gains in educational attainment beyond the SIPP interview date in MINT3 that are observed in MINT6 and partly due to SIPP sample differences (Smith, Michelmore, and Toder 2008).

MINT6 projects about 7 percent lower lifetime average earnings for boomers than did MINT3 largely because of lower than expected actual growth in real wages compared with the *2002 Trustees Report* assumptions used in MINT3. While high-income groups were less likely to have lost a job during the recession than low-income groups, high-income groups have more to lose and lost more during the recession (Butrica, Johnson, and Smith 2011). Younger cohorts were more likely to have lost a job during the recession than older cohorts, and the impact of the recession accumulates over time.

MINT6 projects a significantly higher share of retirement account ownership for later cohorts than did MINT3 because of changes in future pension assumptions. MINT6 assumes that all private-sector DB pensions and a third of state and local DB pensions freeze between 2006 and 2011. It assumes that frozen plans are replaced with substitute DC pensions (Butrica and others 2009). Younger workers that converted to substitute DC plans benefited from the stock market crash because they were able to buy stocks on sale and benefit from stock market growth rates that were projected to be higher than average as stock prices recovered (Butrica, Smith, and Toder 2010). Projected gains in retirement account ownership are greatest for workers in the middle of the income distribution. Low-income workers continue to have low rates of retirement account ownership, and high-income workers continue to have high rates of retirement account ownership. The assumed rate of pension freezes should be revisited for future versions of MINT given the actual course of history, but current evidence still shows that DB plans remain on the decline (Vanguard 2011).

Differences between MINT6 and MINT3 projections of per capita retirement income vary more than differences in lifetime earnings by cohort. MINT6 projects 17 percent higher average retirement income than MINT3 for depression babies, 25 percent higher retirement income for war babies, 4 percent lower retirement income for leading boomers, and 5 percent higher retirement income for trailing boomers. The

majority of the differences are due to the wealth alignment in MINT6 that was not in MINT3. This alignment primarily increased the self-reported retirement account balances and financial assets at the top of the asset distribution and accounts for about 75 percent of the increase in retirement income of depression babies and 42 percent of the increase for war babies. Because older individuals have more assets on average than younger individuals, the alignment inflated assets for depression babies and war babies substantially more than it did for the leading and trailing boomers.

While the wealth alignment increased the asset income of depression babies and war babies, the driving factor in the 4 percent reduction in projected retirement income of leading boomers was the 2008 stock market crash. Leading boomers were in their fifties—the zenith of their careers and savings—when the stock market crashed. Because of projected asset rebalancing, leading boomers sold stocks at low prices to buy bonds. They did not gain as much from higher-than-average, post-crash stock market increases as did trailing boomers (Butrica, Smith, and Toder 2010).

MINT6 captures the rise in home equity that was due to the housing bubble—not projected in MINT3—increasing projected imputed rental income slightly (about 4 percent of the gain). Increased historic labor force participation among 67-year-olds also increased average retirement income of depression babies and war babies in MINT6 compared with MINT3, accounting for about 18 percent of depression baby income gains and 27 percent of war baby gains, both groups benefiting from the elimination of the RET.

Projected Social Security income is very similar across versions of MINT. Because Social Security is based on lifetime earnings and MINT observes much of that history in both MINT3 and MINT6, projections of Social Security income are more certain and less volatile than projections of other sources of retirement income. Both MINT6 and MINT3 find that Social Security remains the most important source of income for low-income seniors.

Lowering the coresidency age from 30 in MINT3 to 25 in MINT6 increased the share of 67-year-olds projected to coreside. In addition, the updated coresidency model changed the coresidency projections in MINT6 compared with earlier versions of MINT. MINT6 projects that a greater share of high-income seniors and a lower share of those with low-incomes will coreside than was projected in MINT3. The recession contributes to higher projected coresidency in MINT6, as many younger adult children who were out of work chose to remain in or return to their parents' homes to save on living expenses. Because coresidency is not included in our measure of total income, changes in coresidency projections do not contribute to reported changes in total income. However, lower coresidency rates among low-income retirees contribute to higher projected poverty rates in MINT6 compared with MINT3.

Asset income is the most volatile component of retirement income, and the roller-coaster path of investment markets makes this a difficult source of income to project. Changes in asset income projections in MINT6, compared with earlier versions of MINT, drive the projected changes in retirement incomes across model versions. Those individuals with the most to lose, lose the most when the stock market falls, but they also gain the most when the market increases.

Because most assets are owned by high-income groups, volatility in the asset market contributes little to changes in retirement income for seniors in the bottom of the income distribution, but contributes a great deal to changes in retirement income for seniors in the top of the income distribution. Despite volatile asset income projections, high-income seniors continue to have substantially more retirement income than those with low-incomes, even for seniors hardest hit by the stock market crash.

Notes

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[1] MINT6 also projects outcomes for individuals born from 1976 through 2070, using a somewhat different approach than for the core cohorts born from 1926 through 1975. However, this analysis is only concerned with individuals born from 1926 through 1975.

[2] Imputed rental income is calculated as a 3 percent real rate of return on home equity.

[3] The FRA increased from 65 to 66 in the 2003–2008 period and will increase to age 67 in the 2021–2026 period.

[4] The baby boom cohort is typically represented as those born from 1946 through 1964. For analytical purposes, however, we define the baby boom cohort as those born from 1946 and 1965.

[5] We convert earnings and incomes in MINT to 2011 dollars using the *2010 Trustees Report* wage and price assumptions (Board of Trustees 2010). Those assumptions include the economic impact of the recession and faster assumed real wage growth that are the results of the passage of

the Affordable Care Act, signed by President Obama in March 2010.

[6] Labor force experience is measured as the number of years from ages 22 to 67 that an individual has positive earnings. Because historical earnings are only available back to 1951, labor force experience is censored for members of the depression baby cohort who were born before 1929. Labor force experience before 1978 is limited to Social Security–covered earnings, causing us to understate work years for individuals in fully uncovered jobs.

[7] While 88 percent of depression babies with asset income may seem high, Fisher (2007) found that asset income in the Survey of Consumer Finance is underreported because some households do not consider certain assets (for example, checking accounts) to be assets. MINT asset income includes the value of vehicles, other real estate, and farm and business equity; stocks, mutual funds, and bond values; and checking and savings accounts, money markets, and certificate of deposit account balances, less unsecured debt. MINT takes the stock of wealth in nonpension, nonhousing assets and retirement accounts and (1) annually decays it based on age/wealth patterns in the SIPP to represent the spend-down of assets over retirement, and (2) converts assets into income by calculating the annuity a couple (or individual) could buy if they (he or she) annuitized 80 percent of their (his or her) total wealth. Thus, asset income is derived from a series of annuity estimates based on a declining stock of wealth in retirement.

[8] We annuitize assets in MINT to represent the potential, rather than actual, income from assets because most retirees do not convert their financial assets into annuities. Based on the stock of wealth each year, the annuity measure of income from assets will produce higher measured income from assets than measures based solely on the returns on assets, as the former includes both a return on assets and a return of principal, while the latter includes only a return on assets.

[9] Most SSI payments and asset parameters are not indexed to inflation. Asset levels, for example, were last set in 1989 and have not been indexed for inflation since. Consequently, fewer people qualify for benefits as time goes by.

[10] We show mean instead of median income because median values are zero for most income sources; that is, fewer than half of seniors have income from most income sources.

[11] Asians are the majority of the "Other" race group. That group also includes Native Americans and individuals of mixed races.

[12] The race and education differentials are examples of "Simpson's Paradox" in which the correlation of different groups is reversed when groups are combined. Simpson's Paradox is often explained using a joke told by Harvard students, "when Harvard students transfer to Yale, it increases the mean intelligence of both schools."

[13] We exclude imputed rental income from income in the numerator of the replacement rate (Munnell and Soto 2005).

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