FINAL REPORT

Modeling Income in the Near Term 5

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TABLE OF ABBREVIATIONS

Abbreviation	Description
AGI	Adjusted Gross Income
AIE	Average Indexed Earnings
AIME	Average Indexed Monthly Earnings
AMT	Alternative Minimum Tax
BLS	Bureau of Labor Statistics
CB	Cash balance pension
CPI	Current Price Index
CPS	Current Population Survey
DB	Defined benefit pension
DC	Defined contribution pension
DER	Detailed Earnings Record
DYNASIM	Dynamic Simulation of Income Model
EBRI	Employee Benefit Research Institute
EGTRRA	Economic Growth and Tax Relief Reconciliation Act
EIC	Earned Income Credit
HRS	Health and Retirement Study
ICI	Investment Company Institute
IRA	Individual Retirement Account
JGTRRA	Jobs and Growth Tax Relief Reconciliation Act
MINT	Model of Income in the Near Term
NCS	National Compensation Survey
NRA	Normal Retirement Age
NUMIDENT	Administrative death record
OCACT	Office of the Chief Actuary
OLS	Ordinary Least Squares
PBGC	Pension Benefit Guaranty Corporation
PENSIM	Pension Simulation Model
PIMS	Pension Insurance Modeling System
Polisim	Policy Simulation Model
PSID	Panel Study of Income Dynamics
RET	Retirement Earnings Test
SCF	Survey of Consumer Finance
SER	Summary Earnings Record
SIPP	Survey of Income and Program Participation
SOI	Statistics of Income
SSA	Social Security Administration
SSI	Supplemental Security Income
TPC	Tax Policy Center

CHAPTER 1
INTRODUCTION

I. OVERVIEW

This report describes the work the Urban Institute performed to generate the Model of Income in the Near Term, Version 5 (MINT5). MINT is a tool developed for The Division of Policy Evaluation (DPE) of the Social Security Administration (SSA) to analyze the distributional consequences of Social Security reform proposals. MINT is a micro-level data file of individuals born between 1926 and 2018. It starts with a rich set of income and demographic characteristics from the 1990 to 1996 Survey of Income and Program Particpation (SIPP) data linked to SSA data on earnings and benefits. MINT then projects these characteristics until death or the year 2099.

MINT1, produced by the Urban Institute, The Brookings Institution, and The Rand Corporation, is described in Toder *et. al.* (1999) and Panis and Lillard (1999). MINT3 is described in Toder *et. al.* (2002), and MINT4 is described in Smith *et. al.* (2005). Each subsequent version of MINT enhances the earlier version by adding more recent data and adding more detail in the projection methods.

MINT5 enhances MINT4 in the following ways:

- Updates marriage, divorce, and mortality projections;
- Revises immigration targets;
- Adds fertility history to the final MINT file;
- Updates the wealth accumulation and annuity calculations;
- Substantially revises and enhances the tax module and adds after-tax retirement income to the final MINT file;
- Updates the SSI eligibility estimates;
- Revises the labor force participation and earnings estimates after age 50 until initial benefit receipt;
- Updates the earnings estimates to reflect the elimination of the retirement earnings test between the normal retirement age (NRA) and 69;
- Updates and revises estimates and projections of retirement and labor force participation;
- Refines the defined benefit pension estimates;
- Updates the projections of extended MINT cohorts through birth year 2018;
- Updates projections of retirement income, based on changes in the model.

1. Updates of Marriage, Divorce, and Mortality Projections

The marriage and divorce projections in earlier versions of MINT were estimated on the 1990 and 1991 SIPP data (Panis and Lillard, 1999). The estimation sample was based on the marriage history topical module data, updated for observed marital changes during the panel. Regressors included age splines, race, Hispanicity, education, marriage/divorce duration, number of marriages, and a measure of permanent income. Spousal attributes were not included because they were not available on the estimation sample, which included only retrospective marriage histories. Number of children was not included because MINT1 did not project it.

Marriage patterns have changed over time, with individuals in later cohorts less likely to marry and more likely to get divorced than earlier cohorts. In order to ensure that MINT captured the most recent trends in marriage patterns, we reestimated the MINT1 marriage and divorce hazard models using pooled 1990 to 2001 SIPP data. The updated estimates and results are described in Chapter 2 of this report.

MINT mortality projections are done separately for deaths up to and after age 65. The pre-65 mortality is a by-product of the earnings splicing and is calibrated to OCACT targets (Toder *et. al.* 2002 Chapter 2). The post-65 mortality projections are based on estimated equations from the Panel Study of Income Dynamics (PSID) (Panis and Lillard 1999). Regressors include age, race, education, marital status, calendar year, and a measure of permanent income. These estimated equations were anchored to Vital Statistics data from 1901-1994. Earlier versions of MINT projected considerably lower mortality rates after age 65 for both men and women than did OCACT (Toder *et. al.* 2002, Chapter 8). The PSID has a small sample size and suffers from sample selection problems due to attrition over time. Both factors adversely affected the quality of the PSID-based mortality estimates..

In MINT 5, we calibrate the mortality projections so that they match 2006 OCACT projections by age, sex, and cohort. This calibration is done by adjusting coefficients of the Panis and Lillard model to hit OCACT targets. We adjust the intercept, add mortality differentials between ever and never disabled workers, adjust the age slope, and adjust the calendar year time trend. The updated mortality model is described in Chapter 2 of this report.

2. Revision of Immigration Targets

MINT4 projected immigrants in the MINT cohorts who arrived in the United States after the SIPP interview and would arrive up to 2039. Characteristics of projected immigrants replicated those of all observed recent immigrants (post-1980) on the MINT file, updated to reflect a future immigration year. Each replicated immigrant record is reweighted so that the future immigrant population matches the target population by immigration age, gender, and source region (Eastern Europe, Western Europe, Oceania, and Japan, Asia minus Japan, Africa, Canada, Mexico and unknown, Caribbean, and Central and South America). Education and marital status were not available from the projection targets, so they were not included in the target population weights (Smith *et. al.* 2005).

MINT5 updates the projections of future immigrants in four important ways. First, it updates the composition of immigrants by age, sex, and source region, based on an updated analysis by Duleep and Dowhan (Attachment B of the RFTOP). Second, it includes both legal and illegal immigrants. Third, it projects emigration of all US resident immigrants. Earlier versions of MINT only projected emigration for post-1996 (newly added) immigrants. Fourth, it calibrates the projections of net immigration to 2006 OCACT net immigration targets. The MINT5 immigration methodology and projection results are described in Chapter 2 of this report.

3. Addition of Fertility History to the Final MINT File

Because of the importance of children's benefits, SSA wanted to improve MINT's capacity for forecasting these critical OASDI payments. This required some representation of children. Earlier versions of MINT included a simple projection of completed fertility (number of children ever born), but this value is not sufficient for determining children's benefits.

In MINT5, we added to the number of children born to each individual a vector of children's birthdates and the date each child ceases being a dependent. This information is useful for calculating children's Social Security benefits and for calculating the number of dependents needed for calculating any year's income tax liability. Chapter 2 describes the method used to project fertility history for each respondent in MINT5.

4. Updating Projections of Wealth and Annuity Calculations

Simulating both the contribution of income from assets to total income and the composition of assets is important for measuring total economic well being of future cohorts. This latter aspect of retirement income is becoming more important over time because changes in the federal income tax have encouraged more individual savings for retirement in tax-deferred accounts and more employers now offer tax-favored defined contribution pension plans to their workers.

MINT measures of income from financial assets in any year as the annuity value of 80 percent of those assets. MINT does not actually annuitize the assets for the purpose of projecting the path of wealth decumulation in retirement. The assets accumulate while individuals work and are then spent down in retirement. The annuity measure is only used to compare the well-being of older individuals with annuitized assets such as DB pensions with the well-being of workers with non-annuitized assets such as DC pensions. We include only 80 percent of the assets in the annuity measure to account for the risk of outliving one's assets if one is consuming from non-annuitized wealth.

Asset accumulation in MINT is generated through three separate processes. First, DC pension assets accumulate based on self-reported starting balances, projected contributions, and rates of return on a portfolio of retirement assets. The accumulation of pension assets is described in Chapter 8 of this report and in Toder *et. al.* (2002). Second, accumulation of assets outside of retirement accounts up to age 50 is calculated based on coefficients from random-effects models for singles and couples estimated on the PSID that project home equity and financial assets from the SIPP interview to age 50. Third, accumulation of assets outside of retirement accounts after age 50 is calculated using random-effects models for singles and couples estimated on the Health and Retirement Study (HRS) that project home equity and assets from age 50 to retirement. These random-effects models include estimated individual-specific effects that account for differences in asset accumulation among similar individuals. The regressors include age, education, cohort, nativity, indicators of whether the individual (couple) had access to a pension, a measure of lifetime earnings relative to the cohort-specific average, a measure of recent earnings, and a measure of high earnings. The specific regressors vary by model.

The HRS-based models are re-estimated for MINT5. The original estimates included only two waves of the HRS data. The revised estimates include seven waves of the HRS and recently added birth cohorts. The revised estimates are described in Chapter 3 of this report. The PSID model (SIPP interview to age 50) and the SIPP model (retirement to death) are unchanged from MINT3, as described in Toder *et. al.* (2002).

MINT5 includes two separate annuity factors that are used to convert assets to income: a unisex annuity factor and a multivariate annuity factor. The unisex annuity factor uses a uniform age and cohort-specific life expectancy, based on 2006 OCACT mortality assumptions. The multivariate annuity factor accounts for mortality differentials that are estimated in the MINT mortality hazard equation. Factors influencing mortality include age, cohort, education, marital status, and race. The annuity calculations are based on a 50 percent joint and survivor annuity for married couples and a single annuity for singles. The annuity factors are vectors that change as individuals age. The annuity factor calculations and results are described in Chapter 3 of this report.

5. Revisions of the Tax Module and Addition of After-tax Retirement Income to the Final MINT File

MINT1 included a simple tax calculator (Panis and Lillard 1999). This tax calculator simulated the 1998 tax code. It computed adjusted gross income (AGI), personal and old-age exemptions, and standard deductions. It estimated taxable income as AGI minus exemptions and deductions. The module read in taxable income sources from MINT and generated as output variables federal income taxes, payroll taxes, and state taxes.[1] Except for the thresholds for including Social Security benefits in adjusted gross income, the module assumes that future thresholds, such as tax bracket widths, standard deductions, and exemptions, increase with prices.

A drawback of the MINT1 tax module is that it was based on a number of oversimplifying assumptions and reflected outdated income tax legislation. It did not include some features of the tax code that have major implications for future tax liability, such as the Alternative Minimum Tax (AMT). Since 1998, there have been numerous major changes in the income tax in the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA), and other legislation.

MINT5 replaces the original tax calculator with one that was developed by Jon Bakija called *IncTaxCalc*. *IncTaxCalc* calculates all important features of federal and state income tax through 2010. It uses an Excel-based parameter file to store historic tax program rules including the AMT and the EGTRRA and the JGTRRA rules. It also stores projected future tax program rules for all features of the

[1] State taxes include state income and sales taxes and sub-state taxes (e.g., county and local income, sales, property, and use taxes).

tax code. We use this tax calculator to project annual federal and state tax liability for tax units in MINT. A more detailed description of the tax calculator and its implementation in MINT is included in Chapter 4 of this report.

6. Updates of SSI Eligibility Estimates

Earlier verions of MINT projected retirement income for SSI beneficiaries from age 62 through the year 2032. The MINT4 methodology did not correctly apply SSI assets and immigration eligibility rules. A number of individuals in MINT were incorrectly considered SSI-eligible, because the wealth measure used to determine eligibility included debt.

In MINT4, the SSI module treated MINT's projected wealth as though all assets that it included counted against the SSI asset test. The projected wealth vector in MINT is sum of balances in savings, money market, and checking accounts, certificates of deposit, savings bonds, values of stocks and mutual funds (including IRAs), equity in residential property (other than own residence), vehicle equity, and business equity, less unsecured *debt* (credit card debt, doctor bills, and other unsecured debt). This variable differed from assets counted against the SSI asset test in *two* ways: it subtracted debt from assets, and it included vehicle wealth as an asset, even though vehicles can be excluded from SSI asset limits under certain circumstances.

As part of the tax calculation, MINT5 now projects asset portfolios that separate out vehicle wealth and unsecured debt from total projected wealth. We have updated the SSI calculator to account correctly for these special asset categories.

The Census Bureau pools some small population states together for confidentiality purposes. MINT4 used the average state SSI supplement information for these pooled states. In MINT5, we impute a specific state for these pooled observations and specifically code actual state SSI supplement values.

MINT draws its state supplement data from the SSI module of the Urban Institute's TRIM model, which in turn draws state supplement data from published sources. State supplements in MINT differ not only by state, but also by SSI filing status (single/couple) and living arrangements (independent/home of another). In cases where states SSI supplements vary by region (for example, by county) or other characteristics that MINT does not project (for example, whether one's home has cooking facilities), we make simplifying assumptions, for example assigning weighted average supplements, usually based on data from the state about the distribution of supplemental benefits in current payments. We model eligibility simply, assuming that the federal program rules apply to each state. Information on SSI eligibility and participation is included in Chapter 9 of this report.

7. Revisions of Projections of Labor Force Participation and Earnings After Age 50

The Social Security Retirement Earnings Test (RET) reduces the Social Security benefits of beneficiaries whose earnings exceed the RET threshold.[2] During the 1990s, the RET existed for beneficiaries under age 70. The Senior Citizens' Freedom to Work Act of 2000, which was signed into law in April 2000, eliminated the RET for individuals between the Normal Retirement Age (NRA) and age 69. Prior to this legislation, the RET reduced the benefits of beneficiaries between the NRA and 69 by $1 for every $3 of earnings in excess of the RET threshold, where the threshold was equal to $15,500 in 1999.[3]

The RET, and thus its removal, has the potential to affect older Americans' employment status (i.e., work versus not work), earnings, and timing of Social Security benefit take-up. The literature to date finds little evidence that removing the RET will increase the percent of older Americans who are employed (Song 2004, Gruber and Orszag 2001, Toder *et. al.* 1999). Findings from the literature do suggest, however, that removing the RET should have increased earnings for working beneficiaries (Song 2004, Friedberg 1999,[4] Toder *et. al.* 1999, Burtless and Moffitt 1984)[5] and caused them on average to claim Social Security benefits earlier (Song 2004, Gruber and Orszag 2001). Because this literature suggests that the 2000 elimination of the RET for individuals between the NRA and age 69 will affect behavior, we reestimated the MINT models for retirement, Social Security take-up, and earnings of beneficiaries. Chapter 6 of this report includes results for the Social Security take-up and beneficiary earnings models. Chapter 7 includes results of the revised retirement model.

8. Revision of Projections of Income from Defined Benefit and Defined Contribution Pensions

Earlier versions of MINT included detailed models to project income in retirement from defined benefit (DB) and defined contributon (DC) pensions, but both the DB and DC models had some important limitations. The projections of DB pension plans did not incorporate conversions of traditional DB plans to cash balance (CB) plans and did not account for recent DB plan freezes. It failed to account for differences in DB plan provisions between firms that offer DB plans only and firms that offer dual (both DB and DC) plans. Finally, it used an overly simple model for the choice of selecting joint and survivor versus single annuity DB pensions. The projections of assets in DC plans used a simple model for DC pension plan participation and contributions that did not take account of data on DC plan contributions from administrative earnings records. MINT5 addresses each of these limitations to produce more realistic and dynamic projections of DB and DC plan pension coverage and accruals over the life course. Chapter 8 includes a detailed description of these changes in projections of pension weatlh and income in retirement from pensions.

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[2] Working beneficiaries who lose benefits because of the RET recover these benefits in actuarial terms through higher future benefits.

[3] The RET is still in place for beneficiaries between age 62 and the NRA. Beneficiaries in this age range have their benefits reduced by $1 for every $2 of earnings in excess of the RET threshold.

[4] Friedberg's (1999) analysis also suggest that the RET *reduces* (by 4 percent) the earnings of workers who have earnings above the point at which Social Security benefits would be fully taxed away.

[5] Gruber and Orszag (2001) are an exception.

9. Updates of Methodology Used to Extend MINT Through 2018 Birth Cohorts

MINT was originally designed to do short-term projections. As such, it contains a limited set of cohorts and projects retirement income to about 2035. Specifically, MINT3 contains the 1926 to 1965 cohorts and projects income to 2032. MINT4 contains the 1926 to 1972 cohorts and projects income to 2039. For the CSSS project, MINT was extended to 2099 for the purpose of calculating income of retirees after the President's Commission to Strengthen Social Security plan 2 is fully phased in (see Smith *et. al* 2005).

The extension first projects retirement income for the MINT population out to 2099. It then uses a series of statistical matches to link original MINT observations from later cohorts to a projected population of individuals born between 1966 and 2017. All year-specific values are then shifted to preserve the age-specific patterns of the donor records. The donor date of death is shifted to capture the increase in life expectancy of later cohorts compared to the MINT donor cohorts.

The population projections came from multiple sources. Population projections for individuals born between 1965 and 1972 in MINT3 came directly from MINT4. Population projections for individuals born 1973 to 1983 were based directly on the 2003 March CPS. Projections for individuals born between 1984 and 2017 were based on Census Bureau population projections. Later cohorts systematically have less linking information than earlier cohorts. The target population loses information about earnings, education, marital status, all of which are important characteristics for determining earnings histories and retirement income.

MINT5 still generates projections for cohorts born after 1972 using a statistical match to link original MINT observations from later cohorts to a projected population of individuals born. MINT5 changed the target population to conform with OCACT population projections. It also extended the projected cohorts to include those born through 2018. Chapter 5 includes more information on the MINT extension.

10. Updated Projections of Retirement Income

Chapter 5 of this report describes changes made to the earnings projections in MINT5. It then presents detailed information on projected labor force participation and earnings by age, cohort, and sex. It also presents detailed information on the distribution of lifetime Social Security covered and total earnings by cohort and sex.

Chapter 9 of this report provides a summary of the model projections. It discusses the projections produced by several of the important modules of MINT5, including the work and benefit claiming behavior of the aged, average wealth, and pension coverage. It then summarizes the results of the income projections, beginning with the status of the respective birth cohorts first as they reach age 62 and then as they reach age 67. The projections at age 67 also include the living arrangements of the people living to age 67 and their SSI claiming behavior. This is followed by an examination of the average incomes among the members of the respective cohorts still living in 2020 and 2060. An appendix to Chapter 9 contains tables showing the projection results in greater detail.

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CHAPTER 2

DEMOGRAPHIC PROJECTIONS

I. INTRODUCTION

MINT5 begins with the 1990 to 1996 Survey of Income and Program Participation (SIPP) data and includes the 1926 to 1965 birth cohorts from the 1990-1993 panels and the 1926 to 1972 birth cohorts from the 1996 panel. MINT5 also includes projections for individuals born between 1973 and 2018 that are generated by cloning MINT records born between 1960 and 1964.

From the 1990-96 SIPP data, MINT gets a host of demographic variables including, birth year, sex, educational attainment, race, ethnicity, immigration status, immigrant source country, and marriage history, fertility history, and disability history at the time of the SIPP interview. MINT then projects future marriage, remarriage, and divorce; future immigration and emigration; completed fertility histories; institutionalization and death. This chapter describes these demographic projections. Section II describes the marriage and divorce projections. Section III describes the death projections. Section IV describes the immigration and emigration projections. Finally, section V describes the fertility projections.

II. MARRIAGE AND DIVORCE

Marriage and divorce histories are important determinants of incomes of retirees. Social Security benefits are closely tied to spousal earnings and marriage durations. In addition, accumulation of assets, labor force participation, and earnings are also affected by changes in marital status.

The MINT5 marriage and divorce projections build off of the MINT1 marriage and divorce projections developed by Stan Panis and Lee Lillard (Panis and Lillard 1999). The MINT1 marriage and divorce models were estimated on the 1990 to 1991 SIPP data using a continuous time hazard model. Under the MINT5 contract, we have re-estimated the MINT1 marriage and divorce models using pooled 1990 to 2001 SIPP data.[1]

For comparison purposes, we present parameter estimates for separate SIPP panels and pooled. We used the pooled 1990-2001 models for the MINT5 projections because this provides a better representation of important time trends than projections using any single SIPP panel.

[1] The pooled data includes the 1990, 1991, 1992, 1993, 1996, and 2001 SIPP panel data.

The SIPP marriage history topical module asks respondents their current marital status, how many marriages they have had to date, when their most recent marriage began and ended, when their first marriage began and ended, and how these marriages ended. For respondents with more than two marriages at the SIPP interview, we impute a starting and ending date for the missing marriages to be consistent with the reported starting and ending dates of their first and last marriages.

We adjusted a handful of self reported marriage begin and end dates to correct coding or response errors. These adjustments ensure that each marriage ends before the next marriage begins. It also ensures that both husband and wife report the same marriage start date.[2] We also used the linked Social Security Administrative data to correct misreported birth dates.[3]

We limited the estimation sample to include marriage histories only up to the wave 2 topical module interview. The original Panis sample included all SIPP marriage histories through the end of the SIPP panel. Including marriage histories beyond the wave 2 interview may introduce bias in the estimation because sample attrition among those who divorce would produce a sample in later waves that over-represents individuals in stable marriages.

Tables 2–1 and 2–2 show the original Panis marriage hazard estimates and our updated models estimated on the 1990-1991 SIPP data, 1996 SIPP data, 2001 SIPP data, and pooled 1990-2001 SIPP data for men and women, respectively. The revised estimates are quite similar to the original Panis estimates. The signs and values for most parameter estimates are similar across SIPP waves. The time trend coefficient, however, becomes increasingly more negative in each successive SIPP panel for both men and women, showing a more pronounced trend for lower marriage rates over time. The parameter estimates for married once and married twice are also lower in the 2001 SIPP estimates than in the 1990 estimates. This implies that projections based on the 2001 SIPP estimates will have fewer individuals becoming married and remarried compared to projections based on the 1990 SIPP. The pooled estimates used in MINT5 will project fewer future marriages than earlier versions of MINT.

Tables 2–3 and 2–4 show the original Panis divorce hazard estimates and our updated models estimated on the 1990-1991 SIPP data, 1996 SIPP data, 2001 SIPP data, and pooled 1990-2001 SIPP data for men and women, respectively. The revised estimates are similar to the original Panis estimates. The signs and values for the parameter estimates for most variables are similar across SIPP panels. The divorce model estimates two separate time trend slopes: before 1980 and after 1980. The before 1980 time trend coefficient is positive and increases in each successive SIPP panel compared to the previous one for both men and women, meaning that the estimated pre-1980 positive time trend in divorced becomes higher using more recent data. The

[2] When husbands and wives report different marriage start dates, we use the wife's reported values.
[3] When birth dates on the administrative data were more than five years different from the SIPP birth date, we assume the error was in the SIPP match. In these cases, we treat the record as not having a valid administrative match and disregard the birth date from the administrative data.

Table 2–1. Parameter Estimate of Marriage Hazard for Males by SIPP Panel

	SIPP Panel														
	Panis			1990-1991			1996			2001			Pooled 1990-2001		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Constant	-23.7332	1.2834	***	-23.9509	1.2757	***	-27.3845	1.4277	***	-22.6781	1.2837	***	-24.9740	0.6642	***
Age slope 0-16	1.1847	0.0813	***	1.1942	0.0808	***	1.3888	0.0901	***	1.0807	0.0815	***	1.2453	0.0420	***
Age slope 16-20	0.6211	0.0121	***	0.6265	0.0120	***	0.6974	0.0136	***	0.7099	0.0165	***	0.6682	0.0065	***
Age slope 20-25	0.0840	0.0041	***	0.0956	0.0041	***	0.0944	0.0042	***	0.1213	0.0050	***	0.0964	0.0021	***
Age slope 25+	-0.0496	0.0010	***	-0.0482	0.0011	***	-0.0461	0.0011	***	-0.0455	0.0012	***	-0.0467	0.0006	***
Slope on duration unmarried, 0-3 years	0.1208	0.0153	***	0.1249	0.0157	***	0.1635	0.0157	***	0.2476	0.0177	***	0.1600	0.0080	***
Slope on duration unmarried, 3-8 years	-0.1086	0.0101	***	-0.1018	0.0105	***	-0.0670	0.0101	***	-0.1623	0.0116	***	-0.1123	0.0053	***
Slope on duration unmarried, 8+ years	-0.0382	0.0074	***	-0.0450	0.0081	***	-0.0629	0.0081	***	-0.0254	0.0079	***	-0.0426	0.0040	***
Calendar time	-0.0079	0.0004	***	-0.0085	0.0004	***	-0.0112	0.0004	***	-0.0172	0.0005	***	-0.0104	0.0002	***
Married once before	0.4325	0.0327	***	0.4170	0.0335	***	0.3149	0.0343	***	0.2493	0.0398	***	0.3744	0.0172	***
Married twice before	0.6669	0.0425	***	0.6558	0.0440	***	0.5992	0.0442	***	0.5895	0.0489	***	0.6388	0.0224	***
Married three or more times before	1.2981	0.0576	***	1.3281	0.0591	***	1.3046	0.0608	***	1.2342	0.0649	***	1.3050	0.0301	***
Black	-0.3587	0.0208	***	-0.3727	0.0211	***	-0.4459	0.0218	***	-0.3849	0.0241	***	-0.3818	0.0107	***
American Indian, Eskimo or Aleut	-0.1756	0.0750	**	-0.1878	0.0740	**	-0.0049	0.0516		-0.2332	0.0734	***	-0.1186	0.0336	***
Asian or Pacific Islander	-0.2368	0.0491	***	-0.2707	0.0502	***	-0.2780	0.0453	***	-0.2326	0.0451	***	-0.2848	0.0234	***
Hispanic	-0.0592	0.0241	**	-0.0443	0.0237	*	-0.0763	0.0226	***	-0.0451	0.0248	*	-0.0651	0.0116	***
High school drop-out	-0.0744	0.0153	***	-0.0786	0.0152	***	-0.0906	0.0161	***	-0.0693	0.0205	***	-0.0705	0.0079	***
College graduate	-0.1733	0.0153	***	-0.1925	0.0155	***	-0.1847	0.0158	***	-0.1480	0.0170	***	-0.1839	0.0079	***
Widowed	0.2856	0.0399	***	0.2580	0.0411	***	0.1075	0.0472	**	0.1874	0.0553	***	0.2069	0.0218	***
Permanent income	0.0164	0.0059	***	0.0140	0.0059	**	0.0297	0.0060	***	0.0186	0.0073	**	0.0166	0.0030	***
Observations	32267			34303			34094			27302			134206		
Log Likelihood	-328843			-328084			-323284			-255886			-1266787.4		

Significance: '*'=10%; '**'=5%; '***'=1%.

Source: Panis and Lillard (1999) and Urban Institute estimates from the SIPP. The pooled data combines the 1990, 1991, 1992, 1993, 1996, and 2001 SIPP data for individuals age 25 and older.

Table 2–2. Parameter Estimate of Marriage Hazard for Females by SIPP Panel

	SIPP Panel														
	Panis			1990-1991			1996			2001			Pooled 1990-2001		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Constant	-21.9557	0.5813	***	-22.2872	0.5764	***	-22.1903	0.5622	***	-23.2117	0.6714	***	-22.4494	0.2919	***
Age slope 0-16	1.1783	0.0370	***	1.1942	0.0367	***	1.1702	0.0358	***	1.2229	0.0427	***	1.1969	0.0186	***
Age slope 16-20	0.3855	0.0072	***	0.3879	0.0071	***	0.4390	0.0078	***	0.4432	0.0094	***	0.3971	0.0038	***
Age slope 20-25	-0.0545	0.0038	***	-0.0409	0.0038	***	-0.0109	0.0038	***	0.0135	0.0044	***	-0.0196	0.0019	***
Age slope 25+	-0.0751	0.0012	***	-0.0744	0.0012	***	-0.0655	0.0012	***	-0.0653	0.0014	***	-0.0707	0.0006	***
Slope on duration unmarried, 0-3 years	0.0789	0.0146	***	0.0828	0.0150	***	0.1500	0.0148	***	0.1665	0.0171	***	0.1302	0.0076	***
Slope on duration unmarried, 3-8 years	-0.0726	0.0094	***	-0.0724	0.0098	***	-0.0915	0.0094	***	-0.0866	0.0103	***	-0.0879	0.0048	***
Slope on duration unmarried, 8+ years	-0.0223	0.0061	***	-0.0220	0.0065	***	-0.0367	0.0064	***	-0.0326	0.0069	***	-0.0267	0.0032	***
Calendar time	-0.0036	0.0003	***	-0.0051	0.0003	***	-0.0086	0.0004	***	-0.0143	0.0004	***	-0.0078	0.0002	***
Married once before	0.3590	0.0304	***	0.3534	0.0310	***	0.1657	0.0318	***	0.1658	0.0372	***	0.2622	0.0160	***
Married twice before	0.6248	0.0395	***	0.6328	0.0406	***	0.4662	0.0417	***	0.4205	0.0482	***	0.5213	0.0210	***
Married three or more times before	1.2017	0.0506	***	1.2400	0.0524	***	0.9675	0.0495	***	1.1254	0.0597	***	1.1363	0.0263	***
Black	-0.5179	0.0183	***	-0.5303	0.0184	***	-0.5890	0.0189	***	-0.6358	0.0221	***	-0.5571	0.0095	***
American Indian, Eskimo or Aleut	-0.0543	0.0647		-0.0446	0.0646		-0.0826	0.0506		-0.2557	0.0561	***	-0.0451	0.0267	*
Asian or Pacific Islander	-0.2276	0.0425	***	-0.2394	0.0417	***	-0.2737	0.0415	***	-0.2606	0.0423	***	-0.2438	0.0209	***
Hispanic	-0.3009	0.0232	***	-0.2753	0.0227	***	-0.2520	0.0210	***	-0.1936	0.0233	***	-0.2397	0.0110	***
High school drop-out	0.1284	0.0134	***	0.1311	0.0133	***	0.0701	0.0144	***	0.0277	0.0183		0.0910	0.0070	***
College graduate	-0.4313	0.0173	***	-0.4636	0.0174	***	-0.4255	0.0165	***	-0.3480	0.0177	***	-0.4284	0.0085	***
Widowed	-0.3813	0.0356	***	-0.4168	0.0362	***	-0.5562	0.0412	***	-0.4445	0.0491	***	-0.4652	0.0192	***
Permanent income	-0.0279	0.0049	***	-0.0316	0.0048	***	-0.0155	0.0040	***	-0.0172	0.0052	***	-0.0225	0.0022	***
Observations	42215			44290			43626			33155			170096		
Log Likelihood	-328843			-328084			-323284			-255886			-1266787.4		

Significance: '*'=10%; '**'=5%; '***'=1%.

Source: Panis and Lillard (1999) and Urban Institute estimates from the SIPP. The pooled data combines the 1990, 1991, 1992, 1993, 1996, and 2001 SIPP data for individuals age 25 and older.

Table 2–3. Parameter Estimate of Divorce Hazard for Males by SIPP Panel

	SIPP Panel														
	Panis			1990-1991			1996			2001			Pooled 1990-2001		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Constant	-1.0198	0.1100	***	-0.9099	0.1612	***	-1.2036	0.1716	***	-1.1584	0.2018	***	-1.0711	0.0830	***
Age slope, 0-30 years	-0.1193	0.0038	***	-0.1280	0.0056	***	-0.1123	0.0057	***	-0.1107	0.0067	***	-0.1196	0.0028	***
Age slope, 30+ years	-0.0400	0.0015	***	-0.0442	0.0022	***	-0.0461	0.0023	***	-0.0457	0.0025	***	-0.0417	0.0012	***
Marriage duration, 0-1 years	0.4339	0.0724	***	0.4945	0.1058	***	0.5324	0.1055	***	0.2255	0.1300	*	0.4366	0.0544	***
Marriage duration, 1-4 years	0.2395	0.0117	***	0.2520	0.0174	***	0.1923	0.0168	***	0.2799	0.0205	***	0.2464	0.0088	***
Marriage duration, 4-15 years	-0.0228	0.0032	***	-0.0133	0.0049	***	0.0176	0.0046	***	0.0260	0.0051	***	-0.0033	0.0024	
Marriage duration, 15-25 years	-0.0386	0.0048	***	-0.0347	0.0072	***	-0.0609	0.0070	***	-0.0732	0.0076	***	-0.0526	0.0036	***
Marriage duration, 25+ years	-0.0875	0.0060	***	-0.0924	0.0101	***	-0.0658	0.0096	***	-0.0611	0.0101	***	-0.0742	0.0047	***
Calendar time, pre-1980	0.0401	0.0010	***	0.0390	0.0014	***	0.0500	0.0018	***	0.0638	0.0029	***	0.0422	0.0008	***
Calendar time, post-1980	-0.0025	0.0020		0.0032	0.0038		-0.0018	0.0024		0.0007	0.0021		0.0050	0.0012	***
Second marriage	0.5737	0.0248	***	0.6192	0.0382	***	0.6306	0.0366	***	0.5960	0.0408	***	0.6022	0.0188	***
Third or higher marriage	1.2503	0.0396	***	1.4786	0.0576	***	1.3946	0.0555	***	1.4774	0.0558	***	1.3993	0.0283	***
Black	0.1198	0.0276	***	0.1726	0.0403	***	0.0911	0.0420	**	0.0979	0.0429	**	0.1321	0.0205	***
American Indian, Eskimo or Aleut	0.3339	0.0766	***	0.2994	0.1233	**	0.3484	0.0885	***	0.1915	0.1159	*	0.3056	0.0542	***
Asian or Pacific Islander	-0.6198	0.0692	***	-0.6353	0.1097	***	-0.6414	0.0867	***	-0.5559	0.0896	***	-0.6093	0.0485	***
Hispanic	-0.3015	0.0343	***	-0.3694	0.0555	***	-0.4066	0.0459	***	-0.3873	0.0469	***	-0.3619	0.0243	***
High school drop-out	-0.0274	0.0208		-0.0066	0.0306		-0.0294	0.0312		-0.0995	0.0385	***	-0.0410	0.0159	***
College graduate	-0.2117	0.0204	***	-0.1569	0.0301	***	-0.2914	0.0298	***	-0.3368	0.0315	***	-0.2491	0.0152	***
Observations	26497			26486			26129			20779			103392		
Log Likelihood	-118840			-113617			-121280			-97774			-460054		

Significance: '*'=10%; '**'=5%; '***'=1%.

Source: Panis and Lillard (1999) and Urban Institute estimates from the SIPP. The pooled data combines the 1990, 1991, 1992, 1993, 1996, and 2001 SIPP data for individuals age 25 and older.

Table 2–4. Parameter Estimate of Divorce Hazard for Females by SIPP Panel

	SIPP Panel														
	Panis			1990-1991			1996			2001			Pooled 1990-2001		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Constant	-1.7268	0.0946	***	-1.5089	0.1364	***	-1.5208	0.1366	***	-1.8058	0.1701	***	-1.7065	0.0705	***
Age slope, 0-30 years	-0.1021	0.0032	***	-0.1128	0.0047	***	-0.1087	0.0047	***	-0.1033	0.0054	***	-0.1079	0.0024	***
Age slope, 30+ years	-0.0523	0.0015	***	-0.0459	0.0024	***	-0.0485	0.0021	***	-0.0513	0.0025	***	-0.0474	0.0011	***
Marriage duration, 0-1 years	0.7350	0.0694	***	0.7349	0.0988	***	0.5223	0.0962	***	0.7386	0.1284	***	0.7607	0.0515	***
Marriage duration, 1-4 years	0.1526	0.0107	***	0.1693	0.0155	***	0.2100	0.0158	***	0.2173	0.0180	***	0.1832	0.0079	***
Marriage duration, 4-15 years	-0.0156	0.0030	***	-0.0151	0.0047	***	0.0135	0.0044	***	0.0214	0.0048	***	-0.0003	0.0023	
Marriage duration, 15-25 years	-0.0275	0.0044	***	-0.0330	0.0068	***	-0.0305	0.0062	***	-0.0502	0.0070	***	-0.0359	0.0033	***
Marriage duration, 25+ years	-0.0832	0.0052	***	-0.0725	0.0085	***	-0.0913	0.0090	***	-0.0779	0.0099	***	-0.0760	0.0043	***
Calendar time, pre-1980	0.0429	0.0008	***	0.0405	0.0011	***	0.0512	0.0015	***	0.0690	0.0024	***	0.0456	0.0006	***
Calendar time, post-1980	0.0058	0.0019	***	0.0099	0.0035	***	0.0021	0.0021		0.0018	0.0019		0.0084	0.0011	***
Second marriage	0.6368	0.0232	***	0.6577	0.0354	***	0.7161	0.0339	***	0.5760	0.0383	***	0.6681	0.0174	***
Third or higher marriage	1.3584	0.0338	***	1.4989	0.0508	***	1.6954	0.0483	***	1.6001	0.0541	***	1.5314	0.0250	***
Black	0.1786	0.0240	***	0.2424	0.0359	***	0.1985	0.0352	***	0.1370	0.0402	***	0.1880	0.0181	***
American Indian, Eskimo or Aleut	0.3237	0.0611	***	0.3885	0.1128	***	0.3118	0.0913	***	0.2065	0.0904	**	0.3178	0.0445	***
Asian or Pacific Islander	-0.6378	0.0610	***	-0.7386	0.1007	***	-0.5151	0.0800	***	-0.7216	0.0897	***	-0.6380	0.0437	***
Hispanic	-0.2076	0.0314	***	-0.2576	0.0499	***	-0.2678	0.0431	***	-0.3591	0.0456	***	-0.2754	0.0226	***
High school drop-out	-0.0085	0.0186		0.0069	0.0276		-0.0837	0.0296	***	-0.0530	0.0346		-0.0091	0.0142	
College graduate	-0.1068	0.0215	***	-0.0983	0.0328	***	-0.1091	0.0299	***	-0.1791	0.0315	***	-0.1124	0.0156	***
Observations	31936			32494			31944			24345			125212		
Log Likelihood	-118840			-113617			-121280			-97774			-460054		

Significance: '*'=10%; '**'=5%; '***'=1%.

Source: Panis and Lillard (1999) and Urban Institute estimates from the SIPP. The pooled data combines the 1990, 1991, 1992, 1993, 1996, and 2001 SIPP data for individuals age 25 and older.

negative sign on the constant term is bigger in later panels, however, so that predicted levels of divorce are not higher. The post-1980 time trend in divorce for women falls in successive SIPP panels, but it is positive in the pooled model. The post -1980 time trend for men is near zero and not statistically significant in the single panel models, but it is positive and significant in the pooled model.

Figure 2–1 shows the percent of surviving women born between 1961 and 1965 who are divorced by age for four different data sources: MINT3, MINT4, MINT5, and 2007 Social Security Office of the Actuary (OCACT) projections. The MINT3 projections include only the 1990-1993 SIPP panels. MINT4 included only the 1996 panel. MINT5 includes all panels.

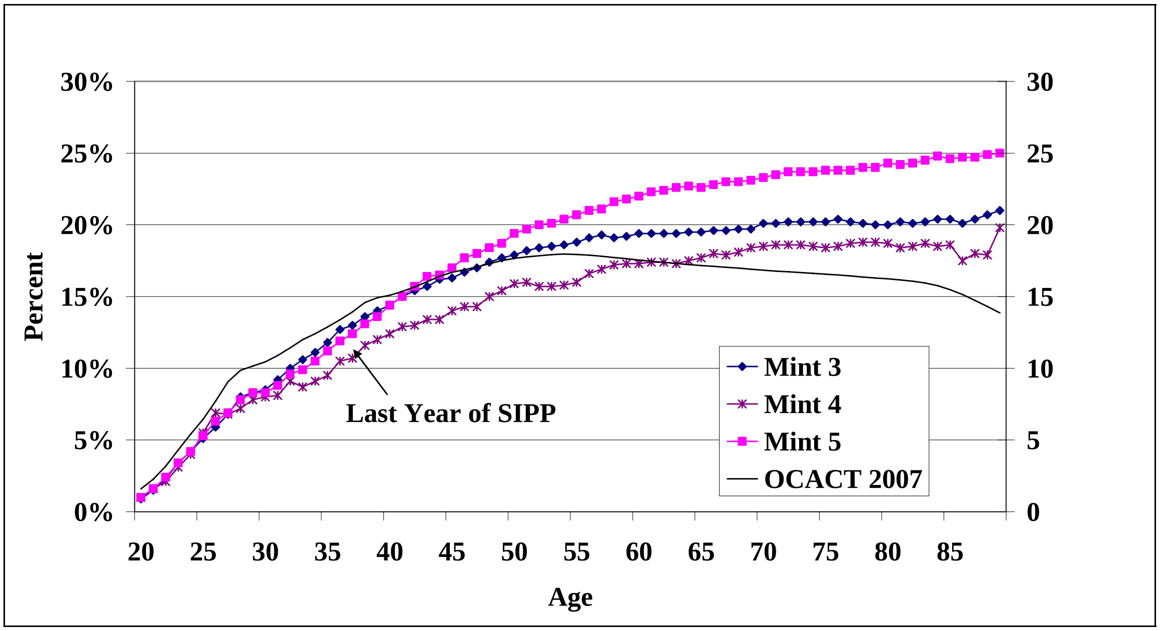
Generally the data before the early 30s come directly from the SIPP data. Data from the mid-30s on are projected. In all cases, the underlying SIPP data report a smaller share of divorced women than OCACT before age 42. MINT4 has a smaller share of divorced women than does MINT3. The share of divorce women in MINT5 is between the MINT3 and MINT4 values but tends to be closer to the MINT3 values, reflecting the higher weight of the MINT3 sample than the MINT4 sample.

The updated marriage and divorce equations project higher rates of divorce and lower rates of marriage compared to those used in both MINT3 and MINT4, but after accounting for the changes in the mortality projection in MINT5, the projected marital status distributions in MINT5 remain similar to those in MINT3. Mortality rates are higher for divorced individuals than for married individuals. MINT5 increased the mortality rates compared to MINT3. Even though MINT5 projects more individuals to divorce than MINT3, divorced individuals are also more likely to die at younger ages. The final MINT5 population projections contain about the same share of divorced individuals at each age as in MINT3.

Figure 2–2 shows the distribution of marital status by age among surviving women born between 1961 and 1965 for both MINT5 and MINT3. The bars indicate the MINT3 share and the lines indicate the MINT5 share. The updated estimates generate very similar marriage status distributions as the older estimates. As expected, the share of women who are never married declines with age, as women get married. The share that are divorced and widowed also rise with age. MINT5 projects a slightly higher share of divorced women at older ages compared to MINT3, but the differences are small.

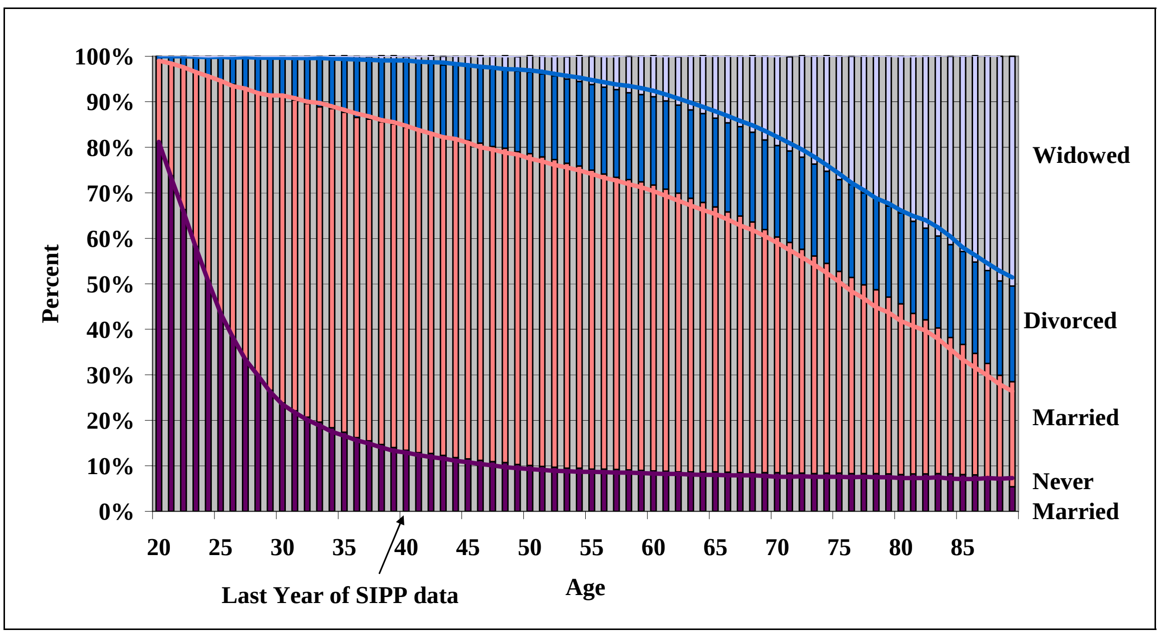
Figure 2–3 compares the distribution of marital status by age among surviving women born between 1931 and 1935 for both the MINT5 and 2007 OCACT projections. The bars indicate the OCACT share and the lines indicate the MINT5 share. Shares before about age 62 are self reported values in MINT and projected at older ages. MINT5 projects a higher share of divorced women and a smaller share of widows after age 63 than OCACT. Again, these shares are both a function of marriage and divorce rates and of differential mortality. Given these differentials, MINT5 will project a lower share of survivor beneficiaries at older ages for women born between 1931 and 1935 than OCACT and a higher share of divorced spouse beneficiaries.

Figure 2–1. Percent of Women Born between 1961-1965 who are Divorced by Age and Simulation



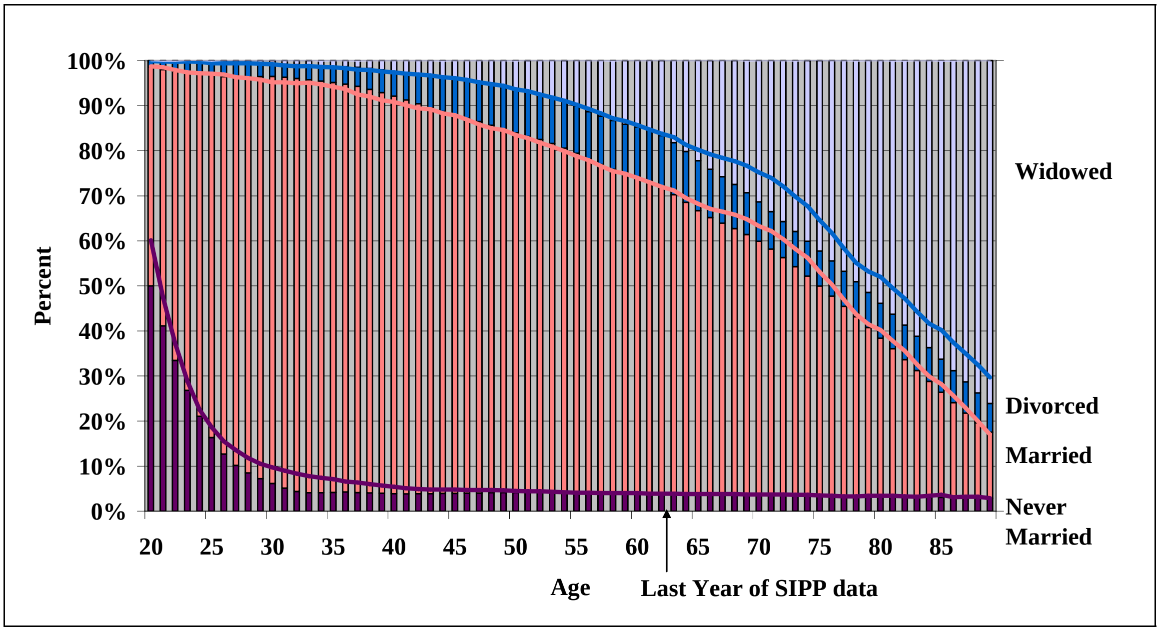
Source: Urban Institute tabulations of MINT3, MINT4, MINT5, and OCACT 2007 projections.

Figure 2–2. Distribution of Marital Status by Age for Surviving Females Born 1961-1965 for MINT5 and MINT3.



Notes: Lines show MINT5 share and the bars show MINT3 shares.
Source: Urban Institute tabulations of MINT5 and MINT3.

Figure 2–3. Distribution of Marital Status by Age for Surviving Females Born 1931-1935 for MINT5 and 2007 OCACT

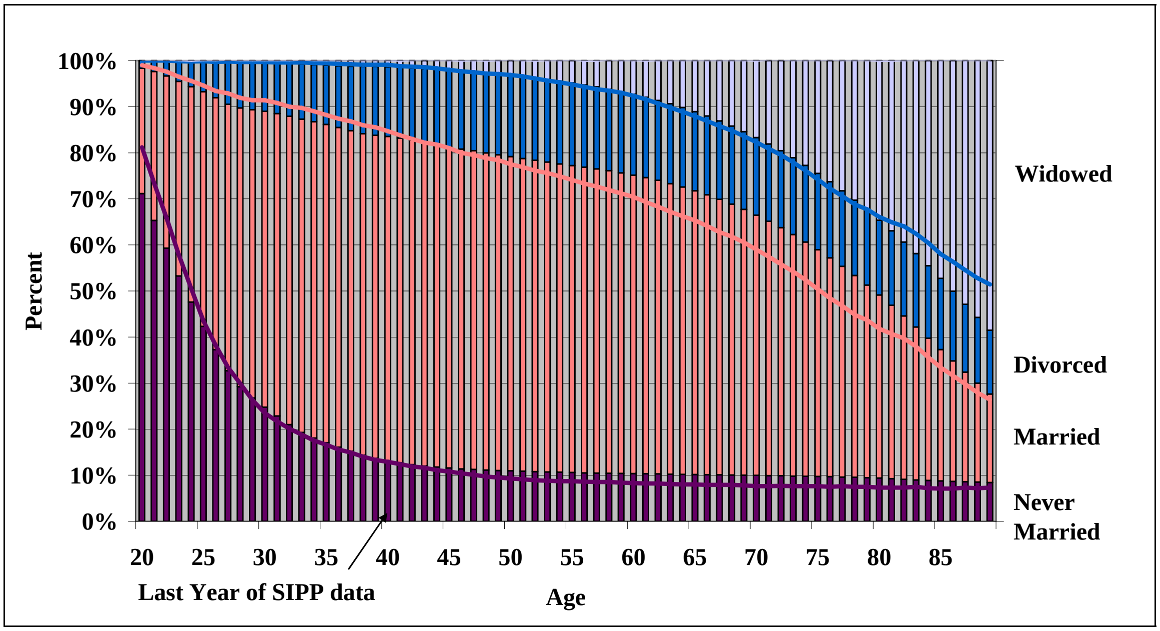


Notes: Lines show MINT5 share and the bars show 2007 OCACT shares.
Source: Urban Institute tabulations of MINT5 and 2007 OCACT.

Figure 2–4 compares the distribution of marital status by age among surviving women born between 1961 and 1965 for both the MINT5 and 2007 OCACT projections. The bars indicate the OCACT share and the lines indicate the MINT5 share. MINT5 projects a higher share of divorced women after age 45 compared to OCACT and a smaller share of widowed women after age 80 compared to OCACT. MINT5 also projects a slightly smaller share of never married women at older ages. These shares are a function of both marriage and divorce rates and differential mortality. Given these differentials, for women born between 1961 and 1965, MINT5 will project a higher share of divorced spouse beneficiaries and a smaller share of survivor beneficiaries than OCACT.

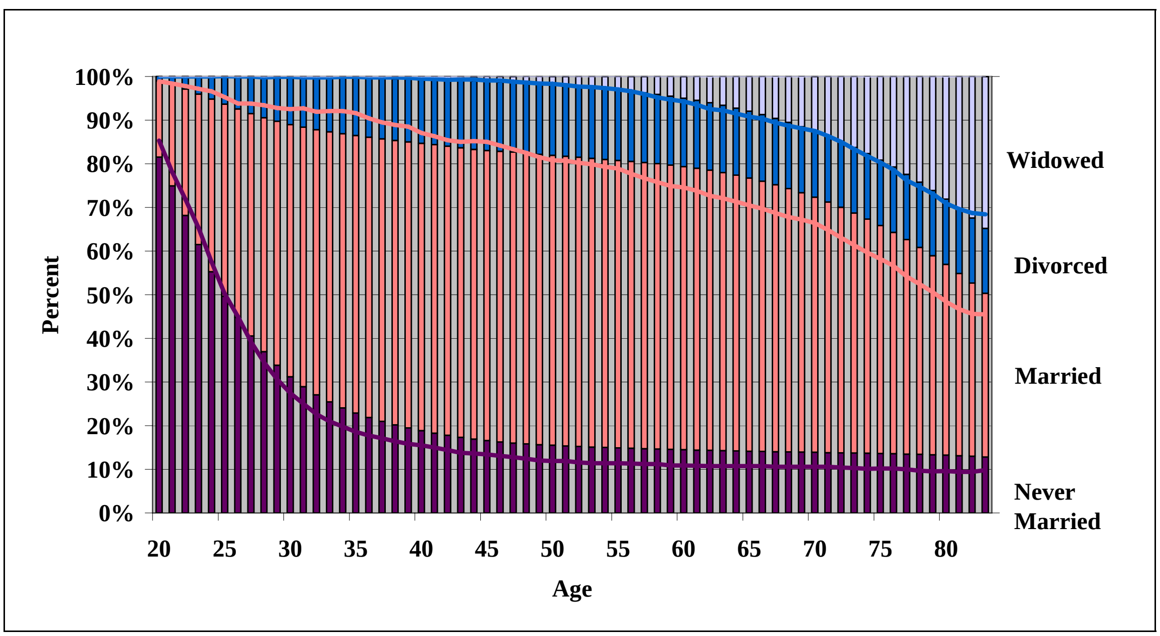
Figure 2–5 compares the distribution of marital status by age among surviving women born between 2011 and 2015 for the MINT5 and 2007 OCACT projections. The bars indicate the OCACT share and the lines indicate the MINT5 share. MINT5 projects a smaller share of divorced women before age 50 and a higher share of divorced women after age 50 than OCACT. MINT5 also projects a smaller share of never married women than OCACT. These differences in projections will reduce MINT5's projected share of dual beneficiaries and increase its share of divorced spouse beneficiaries compared with OCACT.

Figure 2–4. Distribution of Marital Status by Age for Surviving Females Born 1961-1965 for MINT5 and 2007 OCACT



Notes: Lines show MINT5 share and the bars show 2007 OCACT shares.
Source: Urban Institute tabulations of MINT5 and 2007 OCACT.

Figure 2–5. Distribution of Marital Status by Age for Surviving Females Born 2011-2015 for MINT5 and 2007 OCACT



Notes: Lines show MINT5 share and the bars show 2007 OCACT shares.
Source: Urban Institute tabulations of MINT5 and 2007 OCACT.

III. DEATH PROJECTIONS

The MINT5 mortality projections are calibrated to hit 2005 OCACT mortality rates. The MINT1 projections included no mortality alignment (Panis and Lillard 1999). The MINT3 and MINT4 mortality projections were aligned to OCACT mortality and disability rates as part of the earnings projections through age 65. MINT4 also aligned mortality projections separately for both disability recipients and others (Smith *et. al.* 2005). MINT5 now aligns mortality projections to OCACT mortality rates for all ages.

The mortality adjustment before age 65 is handled through the earnings splicing function (Toder *et. al.* 2002). MINT imputes respondent earnings in five-year segments by replicating a similar worker from an older cohort with similar age-specific earnings in the prior five years. This splicing method projects earnings, disability status, and mortality. MINT selects two donors in doing the match: a primary donor, and a secondary donor. MINT then switches donors as necessary to hit OCACT mortality and disability targets. For example, if the primary donors give too many DI beneficiaries, MINT will switch from primary donors to secondary donors, if the secondary donor moves the projection closer to the OCACT target. MINT switches only the number needed to hit the target. After age 65, MINT uses a mortality hazard function to predict death.

In MINT5, we adjusted the MINT1 mortality hazard function after age 65 to align to OCACT mortality rates. This adjustment included three separate factors for men and women: an intercept adjustment, an age slope adjustment, and a time trend adjustment. The modified hazard function parameter estimates are shown in Table 2–5. The first column shows the original MINT1 parameter estimates. The MINT4 parameters included intercept and age slope adjustments to match OCACT mortality differentials by disability status (Smith *et. al.* 2005). In addition to the adjustments by disability status in MINT4, MINT5 parameters also include intercept, age, and time trend adjustments to match OCACT projections by age and year after age 65. We calculated these factors using a simulation method developed for MINT3. Tables 2–6 and 2–7 show the number of men and women alive at each age from age 66 to 100 calculated from the projected mortality rates by gender and cohort for both MINT5 and OCACT per 100,000 survivors at 66. Age-specific mortality rates are quite noisy in the MINT population due to differential weights and sensitivity of the projections to projected permanent income and marital status. As required, MINT5 mortality rates align closely with OCACT mortality rates by sex, cohort, and age.[4]

MINT5 includes two separate annuity factors that are used to convert wealth into income: a multivariate annuity rate, and a unisex annuity rate.[5] The multivariate annuity rate is derived directly from the original mortality estimates. They include the same parameter adjustments as were used to calibrate the mortality projections to OCACT: specifically intercept, age, and time trend adjustments. The multivariate annuity rates

[4] The original mortality calibration was done using 2005 OCACT projections. These projections are very similar to the 2007 projections used in these tables.

[5] The annuity factor is use to convert wealth to income and income to wealth using the following relationship: income = wealth / annuity factor.

Table 2–5. Parameter Estimate of Mortality Hazard for Men and Women by Source

		MINT1		MINT4	MINT5
Male					
	Constant	-8.40236	***	-8.40236	-8.52236
	Ever Disabled	0.00000		0.93000	0.93000
	Never Disabled	0.00000		-0.05000	-0.05000
	Age 30-65	0.06911	***	0.06911	0.06911
	Age 65 + Ever Disabled	0.07753	***	0.04847	0.07847
	Age 65 + Never Disabled	0.07753	***	0.07909	0.10909
	Time	-0.00202	***	-0.00202	-0.00802
	Black	0.06705	**	0.06705	0.06705
	High School Dropout	0.37783	***	0.37783	0.37783
	College Graduate	-0.05127		-0.05127	-0.05127
	Never Married	0.21376	*	0.21376	0.21376
	Divorced	0.43429	***	0.43429	0.43429
	Widowed	0.10803		0.10803	0.10803
	Permanent Income	-0.15915	***	-0.15915	-0.15915
	Income Missing	-0.40831		-0.40831	-0.40831
Female					
	Constant	-8.62573	***	-8.62573	-8.68573
	Ever Disabled	0.00000		1.09000	1.09000
	Never Disabled	0.00000		-0.05000	-0.05000
	Age 30-65	0.06518	***	0.06518	0.06518
	Age 65 + Ever Disabled	0.09602	***	0.06196	0.08196
	Age 65 + Never Disabled	0.09602	***	0.09758	0.11758
	Time	-0.01114	***	-0.01114	-0.00714
	Black	0.12204	***	0.12204	0.12204
	High School Dropout	0.09345		0.09345	0.09345
	College Graduate	-0.25137	*	-0.25137	-0.25137
	Never Married	0.01844		0.01844	0.01844
	Divorced	-0.11853		-0.11853	-0.11853
	Widowed	-0.00415		-0.00415	-0.00415
	Permanent Income	-0.26747	***	-0.26747	-0.26747
	Income Missing	-2.13036		-2.13036	-2.13036

Source: Panis and Lillard (1999) and Urban Institute calculated adjustments. The highlighted items are modified compared to the MINT1 Panis and Lillard estimates.

Note: Significance *=10%, **=5%, ***=1%.

Table 2–6. Number of Male Survivors by Age and Cohort for MINT5 and OCACT 2007

	MINT5									OCACT2007								
	Birth Year									Birth Year								
Age	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60	1961-65	1966-72	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60	1961-65	1966-72
66	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000
67	98274	98177	97748	98077	98199	97599	98211	97987	98438	97526	97759	97980	98120	98221	98301	98372	98437	98498
68	96255	96394	95757	95705	96282	95728	95719	96043	96636	94927	95423	95848	96120	96318	96480	96624	96757	96880
69	93981	94710	92725	92884	94032	93215	94037	93825	94930	92229	92991	93593	93995	94290	94535	94754	94957	95146
70	91505	92036	89900	90173	91367	91050	91426	91438	92771	89431	90454	91215	91742	92133	92463	92760	93035	93292
71	88927	89241	86786	86933	88382	88634	89049	89115	89368	86524	87797	88702	89347	89835	90251	90629	90980	91308
72	86267	86402	83273	84398	85592	86047	86398	86812	86796	83505	85010	86046	86803	87388	87893	88354	88784	89186
73	83891	83392	80336	81225	82907	83200	83812	84344	84318	80382	82095	83253	84119	84802	85397	85944	86453	86932
74	81641	79246	78018	78409	80371	80420	80962	81392	81318	77180	79052	80337	81309	82088	82775	83408	84000	84556
75	78636	75521	75081	75021	77235	77508	77769	78851	79070	73897	75899	77304	78377	79253	80032	80752	81426	82061
76	74886	71642	72146	71905	73984	74327	74768	75564	76394	70511	72626	74137	75308	76278	77147	77953	78710	79423
77	70239	68116	68591	68417	70238	70982	71556	72292	73183	67011	69220	70825	72088	73149	74107	74999	75837	76629
78	65480	64374	64802	64720	66539	67717	68064	68960	69731	63408	65691	67379	68729	69879	70925	71901	72822	73693
79	60350	60462	60898	60705	62787	64246	64324	65088	66063	59711	62051	63814	65248	66487	67620	68682	69685	70636
80	56036	56379	57181	57776	59227	60505	60635	61911	63073	55934	58310	60139	61654	62980	64200	65347	66433	67463
81	51367	52181	53608	54114	55521	56751	57243	58227	58503	52075	54470	56357	57949	59358	60663	61894	63061	64171
82	46615	47755	49041	50242	51808	52512	53490	53920	55393	48137	50530	52463	54122	55609	56993	58302	59548	60734
83	42458	43322	44704	46128	47667	48416	48812	50340	51333	44129	46498	48457	50167	51716	53166	54544	55857	57110
84	38740	39102	40556	41979	43432	44673	44380	46346	47289	40070	42387	44346	46082	47669	49166	50593	51957	53264
85	34578	35156	36363	38161	39643	40808	40719	42233	42530	35988	38223	40151	41883	43483	45001	46454	47850	49191
86	30525	31216	31903	33908	35575	36787	36959	38582	39391	31923	34047	35914	37613	39199	40712	42170	43575	44931
87	26343	27116	28441	30428	31765	32551	32914	34588	35002	27924	29914	31694	33335	34881	36368	37806	39201	40553
88	22556	23800	25046	26638	28115	28909	29476	30840	31303	24051	25888	27560	29121	30607	32046	33446	34811	36141
89	18847	20726	21174	23158	24736	25303	26191	27335	28091	20364	22035	23583	25048	26456	27828	29173	30491	31782
90	15994	17339	17937	19700	21410	21854	22948	23413	24387	16922	18421	19833	21187	22501	23791	25064	26319	27556
91	12637	14218	15151	17097	17997	18571	19611	20076	20561	13778	15100	16368	17599	18806	20001	21188	22366	23533
92	10032	11560	12505	14444	14907	15777	16405	17102	17148	10971	12118	13235	14335	15424	16512	17600	18687	19771
93	7967	8784	10298	11481	12388	12981	13397	14582	14598	8529	9502	10467	11430	12394	13365	14344	15329	16318
94	5832	7276	7836	9328	10055	10844	10859	11758	12037	6459	7267	8081	8905	9739	10587	11449	12324	13209
95	4266	5661	5888	7572	7914	8692	8626	9592	9839	4755	5408	6078	6764	7468	8191	8933	9692	10466
100	761	974	1206	1265	1569	2000	1904	2242	2479	683	834	1003	1191	1396	1621	1866	2129	2412

Source: Urban Institute calculations from MINT5 and OCACT 2007.

Table 2–7. Number of Female Survivors by Age and Cohort for MINT5 and OCACT 2007

	MINT5									OCACT 2007								
	Birth Year									Birth Year								
Age	**1926-30**	**1931-35**	**1936-40**	**1941-45**	**1946-50**	**1951-55**	**1956-60**	**1961-65**	**1966-72**	**1926-30**	**1931-35**	**1936-40**	**1941-45**	**1946-50**	**1951-55**	**1956-60**	**1961-65**	**1966-72**
66	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000
67	98527	98864	98361	98474	98483	98746	98480	98775	99048	98565	98607	98675	98705	98749	98795	98840	98882	98922
68	97527	97496	96844	96805	97133	97231	97168	97474	97813	97029	97118	97246	97307	97397	97491	97583	97669	97751
69	96509	96057	95076	95148	95534	95699	95793	96301	96716	95392	95536	95702	95802	95942	96087	96228	96361	96487
70	94704	94697	92735	93361	93696	94195	94196	94870	95124	93645	93851	94042	94185	94378	94578	94771	94955	95128
71	93107	92626	90496	91552	91787	92388	92298	93194	93112	91776	92045	92254	92445	92695	92953	93202	93438	93661
72	91839	90535	88398	89560	89957	90443	90209	91340	91401	89778	90100	90327	90571	90883	91203	91511	91804	92079
73	89844	87537	85803	87578	88090	88525	88020	89612	89470	87648	88014	88265	88567	88945	89330	89701	90053	90385
74	87780	84619	83301	85596	85807	85963	86161	87953	87829	85398	85784	86073	86440	86887	87341	87777	88191	88581
75	85354	81520	81022	82941	83588	83506	83979	85711	85682	83017	83417	83753	84190	84710	85234	85739	86217	86667
76	82262	78692	78490	80238	81246	81266	81536	83081	82529	80485	80896	81286	81797	82392	82989	83563	84107	84620
77	78538	76030	75833	77171	78777	78810	79068	80721	79616	77782	78204	78657	79245	79917	80589	81234	81846	82423
78	74865	72869	73048	74583	75951	75833	76451	77922	77245	74902	75343	75866	76536	77290	78040	78759	79442	80086
79	70153	70327	69820	71053	73001	72876	73749	74999	74220	71841	72318	72922	73682	74522	75355	76154	76911	77626
80	66189	66159	66817	68339	69716	69731	70728	71881	71413	68603	69130	69826	70682	71614	72535	73418	74254	75044
81	62227	62413	63217	65266	66825	66059	67528	68530	68689	65178	65769	66567	67526	68556	69570	70540	71460	72329
82	58350	58751	60118	61837	63052	62748	63730	65208	64737	61559	62228	63132	64196	65325	66433	67493	68497	69447
83	54748	54853	56480	58310	59531	59024	60075	61525	60836	57756	58508	59514	60676	61897	63093	64238	65323	66350
84	50116	51118	52962	54566	55954	55282	56480	58191	56869	53786	54616	55709	56953	58250	59520	60737	61892	62988
85	45829	46943	49228	50712	52093	52051	52980	54398	53545	49667	50562	51721	53025	54378	55704	56975	58187	59339
86	41499	42808	45273	46779	47940	48263	49345	50681	49787	45422	46367	47570	48911	50298	51660	52969	54221	55416
87	37133	38846	41243	43535	44481	44378	45377	47245	46393	41087	42065	43292	44650	46052	47430	48761	50038	51261
88	32988	34720	36388	39417	40866	40625	41765	43517	41898	36709	37706	38938	40295	41694	43074	44412	45700	46939
89	29210	31206	31975	35158	36467	36675	37406	39798	37439	32347	33349	34573	35912	37294	38661	39990	41277	42521
90	25826	27061	27932	31093	32305	32731	33711	35566	33770	28071	29065	30265	31572	32922	34261	35570	36842	38077
91	21968	23544	24445	27178	28230	28985	29611	31211	29756	23953	24927	26087	27348	28650	29946	31220	32465	33679
92	18132	20111	21313	23633	24488	25342	25981	27506	25688	20068	21005	22110	23308	24547	25787	27010	28213	29391
93	15415	16769	18017	19726	21037	21638	21905	23876	22655	16479	17365	18398	19518	20678	21845	23003	24147	25275
94	12280	13744	14780	16770	17693	18503	18568	20440	19768	13242	14059	15006	16033	17099	18177	19255	20326	21389
95	9788	11563	12277	14002	14574	15322	15703	17173	15801	10393	11128	11976	12896	13856	14833	15816	16800	17782
100	1947	2283	3094	3284	4099	4389	4591	5232	4651	2166	2454	2790	3163	3567	3997	4449	4922	5413

Source: Urban Institute calculations from MINT5 and OCACT 2007.

account for sex, age, birth year, race (black, non-black), and education (less than high school, high school graduate, college graduate). The annuity rates assume real annuity (price indexed) with a 50 percent survivor option. The unisex annuity rates are derived directly from the 2005 OCACT mortality rates. They are a weighted blend of the male and female rates based on the share of the projected surviving population.

MINT5 also includes unisex annuity factors that can be used for certain Social Security reform options. The real unisex annuity factors are bigger in MINT5 than the MINT1. The MINT1 unisex annuity calculation did not include a time trend, so they were constant at each age over time. The MINT5 unisex annuity factors, which are based on the 2005 OCACT age and cohort-specific mortality rates, increase over time due to projected increases in life expectancy. The **bigger** unisex annuity factors in MINT5 mean that MINT5 will generate **lower** calculated income from assets compared to earlier versions of MINT, and the differences will be greater for later cohorts compared to earlier cohorts. Table 2–8 shows average real unisex annuity factors by age and birth year for both MINT5 and pooled MINT3 and MINT4 projections.[6] For example, a respondent born in 1926 with $100,000 of assets at age 62 would receive on average $6,258 per year of income in MINT5 and $6,892 per year in MINT3 ($634 less in MINT5). For a similar respondent born in 1970, they will receive $5,835 per year in MINT5 but would have received $6,879 per year in MINT3 ($1044 less in MINT5) before indexing.

While the real unisex annuity factors are bigger in MINT5 than in MINT1, the real multivariate annuity factors are smaller in MINT5 than in MINT1. MINT5 has higher mortality rates compared to MINT1 and thus at each year of age, a respondent must spread the asset income over fewer years. Table 2–9 shows the average real multivariate annuity factors by age and birth year for both MINT5 and pooled MINT3 and MINT4 projections. A respondent born in 1926 with $100,000 of assets at age 62 would receive on average $6847 per year in MINT5 and $6459 in MINT1 ($388 more in MINT5).

IV. IMMIGRATION PROJECTIONS

MINT4 projected immigrants born between 1926 and 1972 who will arrive in the United States after the SIPP interview up to 2039. It replicated all observed recent immigrants (post-1980), updated to reflect a future immigration year. Each replicated immigrant record was re-weighted so that the future immigrant population matched the target population by immigration age, gender, and source region. Education and marital status were not available from the projection targets, so they were not included in the target population weights.

MINT4 used immigration targets that are out of date. Dowhan and Duleep updated their projections to better capture the sex-age distribution by source region (Attachment B of the RFTOP). This task required MINT5 to use the updated immigrant targets and to develop a method for adding immigrants that tracks the most recent Trustees Report assumptions on the number of future immigrants.

[6] Both MINT3 and MINT4 use the MINT1 annuity function. Because of the absence of a time trend in the MINT1 unisex annuity function, the small differences in the pooled values by birth year are due solely to differences in spouse characteristics across cohorts.

Table 2–8. Average Real Unisex Annuity Factor by Age, Birth Year, and Data Source

	MINT5									Pooled MINT3 and MINT4								
	Birth Year									Birth Year								
Age	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60	1961-65	1966-72	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60	1961-65	1966-72
62	15.980	16.187	16.361	16.526	16.674	16.800	16.921	17.042	17.138	14.510	14.515	14.509	14.554	14.550	14.554	14.516	14.516	14.538
63	15.576	15.787	15.952	16.117	16.268	16.392	16.510	16.633	16.736	14.115	14.128	14.117	14.163	14.164	14.166	14.122	14.126	14.146
64	15.175	15.378	15.543	15.704	15.856	15.982	16.102	16.221	16.324	13.721	13.740	13.727	13.775	13.775	13.774	13.728	13.737	13.758
65	14.770	14.963	15.136	15.286	15.443	15.565	15.692	15.812	15.908	13.332	13.349	13.333	13.369	13.381	13.380	13.334	13.333	13.369
66	14.364	14.550	14.715	14.869	15.022	15.148	15.275	15.392	15.487	12.941	12.961	12.948	12.983	12.992	12.986	12.944	12.946	12.978
67	13.949	14.136	14.301	14.445	14.603	14.729	14.851	14.974	15.072	12.554	12.568	12.564	12.588	12.598	12.597	12.555	12.552	12.587
68	13.528	13.719	13.880	14.022	14.176	14.302	14.428	14.549	14.652	12.169	12.176	12.175	12.200	12.215	12.207	12.162	12.160	12.198
69	13.109	13.297	13.450	13.597	13.751	13.875	14.002	14.121	14.223	11.777	11.793	11.788	11.822	11.826	11.827	11.769	11.772	11.809
70	12.693	12.866	13.024	13.171	13.318	13.443	13.571	13.693	13.792	11.393	11.402	11.415	11.444	11.437	11.444	11.393	11.397	11.415
71	12.268	12.437	12.587	12.742	12.894	13.014	13.140	13.254	13.352	11.010	11.022	11.046	11.062	11.059	11.066	11.017	11.024	11.040
72	11.847	12.004	12.157	12.308	12.463	12.576	12.711	12.819	12.915	10.627	10.648	10.673	10.685	10.681	10.678	10.641	10.646	10.666
73	11.426	11.572	11.723	11.872	12.035	12.140	12.280	12.380	12.470	10.255	10.278	10.303	10.311	10.298	10.296	10.270	10.279	10.300
74	11.001	11.147	11.294	11.440	11.600	11.704	11.841	11.941	12.024	9.884	9.903	9.932	9.943	9.923	9.923	9.903	9.901	9.920
75	10.573	10.711	10.865	11.004	11.157	11.263	11.398	11.494	11.583	9.517	9.544	9.571	9.574	9.555	9.553	9.533	9.527	9.554
76	10.142	10.274	10.435	10.566	10.714	10.819	10.949	11.055	11.134	9.157	9.191	9.206	9.213	9.198	9.191	9.173	9.164	9.192
77	9.701	9.839	10.005	10.132	10.274	10.384	10.506	10.608	10.695	8.804	8.835	8.856	8.851	8.841	8.833	8.817	8.809	8.832
78	9.274	9.400	9.572	9.698	9.841	9.949	10.065	10.165	10.256	8.450	8.487	8.511	8.506	8.487	8.488	8.473	8.460	8.490
79	8.844	8.975	9.147	9.264	9.406	9.510	9.625	9.728	9.827	8.109	8.150	8.164	8.159	8.128	8.141	8.128	8.109	8.145
80	8.419	8.561	8.723	8.845	8.971	9.082	9.187	9.292	9.376	7.775	7.808	7.823	7.818	7.794	7.802	7.791	7.775	7.805
81	8.001	8.132	8.290	8.420	8.546	8.653	8.744	8.853	8.930	7.445	7.487	7.495	7.493	7.464	7.467	7.463	7.448	7.467
82	7.590	7.715	7.852	7.990	8.112	8.226	8.306	8.423	8.489	7.125	7.158	7.177	7.179	7.141	7.143	7.144	7.127	7.146
83	7.188	7.297	7.446	7.583	7.681	7.802	7.865	7.984	8.055	6.813	6.838	6.863	6.864	6.820	6.824	6.825	6.803	6.826
84	6.804	6.913	7.060	7.188	7.273	7.385	7.450	7.562	7.621	6.512	6.527	6.547	6.557	6.510	6.513	6.509	6.496	6.521
85	6.422	6.533	6.668	6.797	6.880	6.981	7.046	7.151	7.215	6.222	6.231	6.249	6.251	6.204	6.208	6.205	6.189	6.221
86	6.065	6.171	6.313	6.421	6.503	6.599	6.661	6.768	6.816	5.924	5.941	5.955	5.965	5.913	5.917	5.924	5.894	5.933
87	5.718	5.827	5.970	6.067	6.153	6.243	6.296	6.407	6.443	5.644	5.662	5.672	5.688	5.635	5.635	5.640	5.610	5.652
88	5.378	5.496	5.638	5.754	5.829	5.907	5.963	6.068	6.094	5.366	5.403	5.397	5.414	5.368	5.357	5.372	5.338	5.375
89	5.065	5.187	5.312	5.434	5.519	5.584	5.639	5.735	5.763	5.102	5.158	5.130	5.158	5.102	5.097	5.109	5.075	5.119
90	4.757	4.869	5.027	5.135	5.207	5.284	5.327	5.424	5.428	4.842	4.908	4.881	4.905	4.841	4.838	4.855	4.820	4.861
95	3.576	3.633	3.766	3.849	3.882	3.973	4.011	4.102	4.136	3.683	3.739	3.738	3.767	3.694	3.679	3.715	3.665	3.711
99	3.005	3.010	3.148	3.139	3.184	3.299	3.331	3.392	3.478	2.929	3.018	2.988	2.968	2.947	2.933	2.937	2.916	2.936

Source: Urban Institute calculations from MINT5 and pooled MINT3 and MINT4.

Table 2–9. Average Real Multivariate Annuity Factor by Age, Birth Year, and Data Source

	MINT5									Pooled MINT3 and MINT4								
	Birth Year									Birth Year								
Age	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60	1961-65	1966-72	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60	1961-65	1966-72
62	14.605	14.829	15.064	15.337	15.589	15.712	15.798	15.910	16.007	15.483	15.690	15.925	16.227	16.504	16.603	16.695	16.772	16.931
63	14.204	14.423	14.652	14.935	15.191	15.311	15.396	15.511	15.613	15.127	15.342	15.578	15.873	16.163	16.263	16.349	16.417	16.582
64	13.798	14.012	14.243	14.533	14.786	14.909	14.990	15.105	15.206	14.768	14.999	15.234	15.530	15.817	15.916	15.997	16.087	16.240
65	13.388	13.597	13.835	14.125	14.376	14.490	14.583	14.698	14.784	14.418	14.648	14.879	15.163	15.469	15.566	15.646	15.720	15.895
66	12.973	13.179	13.422	13.711	13.959	14.078	14.167	14.283	14.365	14.053	14.291	14.546	14.824	15.132	15.223	15.304	15.388	15.562
67	12.554	12.754	13.009	13.294	13.542	13.666	13.749	13.871	13.956	13.703	13.923	14.202	14.477	14.777	14.864	14.965	15.038	15.212
68	12.131	12.331	12.603	12.885	13.123	13.249	13.335	13.454	13.540	13.349	13.555	13.852	14.127	14.442	14.521	14.621	14.703	14.878
69	11.709	11.909	12.197	12.477	12.709	12.826	12.917	13.034	13.121	12.986	13.213	13.504	13.794	14.098	14.193	14.269	14.363	14.551
70	11.293	11.498	11.803	12.069	12.296	12.407	12.496	12.619	12.706	12.632	12.862	13.188	13.458	13.761	13.858	13.943	14.039	14.202
71	10.871	11.087	11.400	11.657	11.892	11.993	12.087	12.199	12.292	12.272	12.517	12.854	13.128	13.428	13.519	13.617	13.724	13.888
72	10.457	10.680	10.996	11.247	11.480	11.572	11.678	11.784	11.874	11.916	12.195	12.518	12.781	13.096	13.173	13.291	13.394	13.557
73	10.045	10.292	10.602	10.839	11.073	11.160	11.267	11.367	11.449	11.577	11.860	12.186	12.441	12.762	12.836	12.954	13.065	13.243
74	9.639	9.913	10.203	10.441	10.665	10.755	10.858	10.958	11.037	11.235	11.502	11.839	12.116	12.419	12.497	12.621	12.724	12.902
75	9.237	9.541	9.825	10.041	10.265	10.357	10.453	10.552	10.627	10.885	11.180	11.510	11.795	12.069	12.170	12.282	12.388	12.578
76	8.856	9.163	9.447	9.656	9.861	9.956	10.044	10.156	10.226	10.550	10.868	11.162	11.455	11.743	11.833	11.944	12.061	12.260
77	8.474	8.804	9.067	9.266	9.463	9.561	9.645	9.752	9.836	10.228	10.560	10.841	11.124	11.402	11.514	11.609	11.734	11.939
78	8.130	8.435	8.688	8.883	9.073	9.172	9.246	9.363	9.447	9.910	10.240	10.524	10.810	11.055	11.203	11.280	11.397	11.628
79	7.783	8.071	8.312	8.502	8.686	8.782	8.855	8.968	9.066	9.619	9.930	10.204	10.475	10.715	10.875	10.966	11.057	11.312
80	7.459	7.710	7.935	8.137	8.308	8.403	8.475	8.594	8.677	9.322	9.607	9.888	10.155	10.385	10.559	10.650	10.758	11.008
81	7.133	7.349	7.579	7.780	7.939	8.033	8.091	8.223	8.296	9.010	9.297	9.583	9.840	10.071	10.250	10.337	10.456	10.686
82	6.797	7.000	7.215	7.413	7.574	7.666	7.719	7.853	7.930	8.712	8.988	9.277	9.551	9.775	9.935	10.042	10.158	10.389
83	6.474	6.654	6.876	7.076	7.210	7.312	7.351	7.494	7.566	8.423	8.681	8.982	9.259	9.483	9.632	9.734	9.833	10.069
84	6.172	6.339	6.565	6.752	6.865	6.957	6.995	7.139	7.201	8.142	8.369	8.688	8.942	9.167	9.310	9.413	9.529	9.767
85	5.876	6.020	6.238	6.426	6.542	6.614	6.652	6.794	6.848	7.858	8.081	8.392	8.636	8.850	8.999	9.077	9.203	9.466
86	5.585	5.716	5.934	6.105	6.219	6.289	6.326	6.470	6.514	7.556	7.807	8.080	8.331	8.559	8.701	8.790	8.893	9.173
87	5.295	5.435	5.644	5.808	5.911	5.982	5.998	6.149	6.183	7.267	7.521	7.780	8.052	8.255	8.417	8.484	8.572	8.861
88	5.025	5.171	5.368	5.523	5.624	5.676	5.705	5.839	5.859	6.973	7.277	7.507	7.774	7.984	8.108	8.224	8.284	8.557
89	4.773	4.915	5.088	5.247	5.347	5.392	5.413	5.538	5.567	6.722	7.034	7.246	7.510	7.699	7.842	7.953	8.028	8.334
90	4.516	4.629	4.831	4.976	5.073	5.120	5.131	5.256	5.249	6.458	6.763	6.987	7.249	7.427	7.559	7.656	7.764	8.047
95	3.426	3.437	3.624	3.707	3.767	3.829	3.854	3.949	3.980	5.172	5.461	5.725	5.906	6.084	6.200	6.367	6.428	6.716
99	2.734	2.673	2.863	2.852	2.900	3.005	3.029	3.100	3.161	4.380	4.555	4.812	4.965	5.105	5.199	5.330	5.480	5.705

Source: Urban Institute calculations from MINT5 and pooled MINT3 and MINT4.

1. Background

Duleep and Dowhan (2002) analyzed the demographic characteristics and earnings of immigrants, compared with native-born residents, using the 1994 Current Population Survey matched to Social Security Administration longitudinal earnings records. Their key findings include the following:

- Immigrant earnings profiles are profoundly different from those of natives;
- Male and female immigrants have different earnings profiles;
- The age of immigration matters for calculating Social Security covered earnings;
- The earnings profiles of immigrants relative to natives has changed over time;
- There are dramatic differences in earnings profiles of immigrants by educational attainment;
- Family reunification is a key determinant of current U.S. immigration policy; and
- Absent any major immigration policy change, future immigrant earnings profiles will likely resemble recent immigrant earnings profiles.

Prior to 1965, U.S. immigration policy allocated visas according to the national origin composition of the U.S. population in 1920. This policy favored West European immigration and excluded almost all Asian immigration. In 1965, Congress replaced the immigration policy to one that eliminated the national origins system and made family reunification the major source of preferential treatment in determination of U.S. admission. This policy change greatly influenced the composition and skills of new immigrants. Duleep and Regrets (1997a, 1997b, 2002) and Borjas (1992) suggest that initially the immigration policy change brought highly-skilled immigrants from non-Western European countries. These highly-skilled immigrants were then followed by lower-skilled relatives. These lower-skilled immigrants had less transferable skills in the United States than earlier immigrants. The lower-skilled relatives earned lower entry wages, but had higher earnings growth rates than earlier-arriving immigrants. Duleep and Regrets conclude that as long as family reunification remains a criterion of immigrant admission, we should expect to see similar patterns of immigrant earnings in the future.

In coordination with the Social Security Administration's effort to add immigrants to MINT, Dowhan and Duleep (2002) generated projections of immigrants born from 1926 to 1965 who will enter the U.S. from 1993 until 2030, using data from the Immigration and Naturalization Service (INS) annual records. These projections were done by gender, age of immigration, source region, and year. INS does not collect information about educational attainment, so their projections were not broken down by education status. They suggest, however, that by using recent immigrants from the SIPP panels as clones by age-of-immigration, gender, and source region, the projected immigrant population should have the appropriate educational distribution. They also project an emigration hazard rate by source region and years residing in the United States. These projections are the basis of the immigration and emigration projections in MINT3 and MINT4 (Smith and Berk 2003)

Dowhan and Duleep have updated their immigrant projections for MINT5 (Attachment B of the RFTOP). Their updated projections differ from the MINT4 projections by altering the gross legal immigrant targets, by adding source region variation to the underlying age and sex distribution of new immigrants, and by expanding the emigration hazard details.

Layered on top of the updated Dowhan and Duleep projections, however, is the requirement that the MINT5 projections hit OCACT immigration targets. Dowhan and Duleep project **gross** legal immigrants, and OCACT projects **net** legal and illegal immigrants.[7] The original MINT projections start by adding gross legal immigrants and then MINT applied an emigration hazard to immigrants to project emigration.

MINT4 applied the emigration hazard only to projected immigrants after the SIPP interview. This resulted in MINT4 overstating the number of net immigrants because much of the emigration will occur among the existing (SIPP interviewed) immigrant population. To get net immigration correct, we needed to apply the emigration hazard equation to all immigrants currently residing in the United States. The SIPP does not identify the legal status of immigrants, so it is not possible to determine emigration separately by legal status. To solve this problem, we added gross legal and illegal immigrants and applied the emigration hazard to all (both projected future and currently observed) immigrants.

2. Method

MINT5 imputes the characteristics of new immigrants by replicating the records of observed immigrants in the MINT data system who arrived in the U.S. in 1980 or later. We added immigrants in the appropriate gender, age-at-migration, and source region categories up to age 89. The donor record provides all of the MINT projections including earnings, wealth, demographic characteristics, and marriage histories. We then shift all year-specific variables forward in time based on the number of years between when the donor immigrant entered the United States and the projected immigrant will enter the U.S. We also shift all date-specific variables by the same number of years. All events continue to occur at the same age, but now they happen in different years. Immigrant earnings and wealth profiles are maintained relative to the age-at-migration.

MINT5 generates gross immigrant population targets by single year of age, sex, source region and year. It then uses the target population to re-weight the donor sample. Each year after 1996, the last SIPP panel year, MINT5 adds gross immigrants to the sample. These immigrants are limited to those born in the MINT cohorts (1926 to 2018). The MINT5 emigration hazard then subsequently projects some immigrants to leave the United States.

Table 2–10 shows the target number of gross legal and other than legal immigrants by year. The gross legal immigrants for 1993 to 2005 are from 1993 to 2005 Immigration and Naturalization Service (INS) Yearbooks. Gross legal immigrants after 2005 are calculated by adding the number of expected emigrants to the OCACT net legal

[7] We use the term "illegal" immigrant. This group contains illegal immigrants as well as foreign born admitted legally, but not on a permanent basis. OCACT refer to this group as "other than legal."

Table 2–10. Gross Number of Immigrants by Legal Status and Year

Year	Gross Immigrants	Gross Legal	Gross Illegal
1993	1304292	904292	400000
1994	1204416	804416	400000
1995	1295461	720461	575000
1996	1490900	915900	575000
1997	1373378	798378	575000
1998	1235477	660477	575000
1999	1221568	646568	575000
2000	1699807	849807	850000
2001	1914318	1064318	850000
2002	1913732	1063732	850000
2003	1555827	705827	850000
2004	1796142	946142	850000
2005	1697300	1122300	575000
2006	1566533	958688	607845
2007	1482499	874654	607845
2008	1482499	874654	607845
2009	1482499	874654	607845
2010	1482499	874654	607845
2015	1482499	874654	607845
2020	1406519	874654	531865
2025	1406519	874654	531865
2030	1330538	874654	455884

Source: 2006 Immigration and Naturalization Service, 2006 OCACT and Urban Institute projections. See text for details immigrant annual targets. The gross illegal immigrants for 1993 to 2006 are from Passel (2006). Gross illegal immigrants after 2005 are calculated by adding the number of expected emigrants to the OCACT net illegal immigrant annual targets. OCACT targets are constant after 2030.

Table 2–11 shows the share of immigrants expected to remain in the United States for more than ten years by sex, age, and source region. The source regions include Eastern Europe, Western Europe and Japan, Asia (excluding Japan), Africa, Canada, Mexico, Carribean, and Central and South America. These shares are from Dowhan and Duleep (attachment B of the RFTOP). MINT5 uses these shares to convert the net immigrant targets to gross immigrant targets.

Given the gross immigrants shown in Table 2–10, MINT5 assigns target immigrants to a source region based on shares shown in Table 2–12. The shares among legal immigrants for 1993 to 2005 are calculated from the Immigration and Naturalization Service (INS) Yearbooks. Shares after 2005 are based on the average from 1990 to 2005. The shares among illegal immigrants are based on Passel (2006). These shares do not vary over time.

Within each immigrant source region, the target immigrant population is then separated by age and sex based on the age and sex distribution shown in Table 2–13. These shares are Dowhan and Duleep (attachment B of the RFTOP) calculations from the 2000 Census Public Use Micro file.

Table 2–14 shows the number of net immigrants by age and year for both MINT5 and OCACT for assorted years between 2005 and 2080. Dots in the table reflect the cohorts born after 2018, who are not included in the MINT sample. The number of net immigrants closely matches OCACT. Net immigration numbers are higher at younger ages and decline at older ages. Because MINT is a stratified sample, each record has a variable weight reflecting its probability of being sampled. The emigration hazard is a smooth function, but because the sample weights vary, the weighted number of emigrants vary based on the specific records selected to emigrate each year. Figure 2–6 compares the MINT5 and OCACT projections by age in 2005. The MINT values are smoothed over three years to reduce the noise generated by the variable weighed emigrants. The MINT5 numbers more or less bracket the OCACT numbers by age, and both show the same declining pattern by age. Figure 2–7 shows the same comparisons for 2010 and Figure 2–8 shows them for 2020. Again, the MINT numbers align closely with OCACT projections of net immigrants by age.

3. Conclusion

MINT5 significantly improved the immigrant projections compared to MINT4. The main improvements include adding illegal immigrants, and applying the emigration hazard to all immigrants instead of only those newly added. MINT5 now closely tracks the United States resident population by year and age projected by OCACT. The MINT5 immigrant donor pool selects from observed immigrants from 1990 to 1996 SIPP panel (6679 observations), while the MINT4 projections donor file included only the 1996 panel immigrants (2564 observations). The larger donor file has significantly increased the immigrant sample (from 40822 observations in MINT4 to 198854 observations in MINT5. The larger sample has also increased the heterogeneity of the MINT5 immigrant population, which was a limitation in MINT4.

Table 2–11. Share of Immigrants that Remain in the US by Sex, Age, and Source Region

Age	Eastern Europe	Western Europe + Japan	Asia (minus Japan)	Africa	Canada	Mexico	Carribean	Central and South America
					Female			
Under 5	0.165	0.165	0.27	0.276	0.165	0.297	0.297	0.297
1-9	0.404	0.404	0.600	0.596	0.404	0.556	0.556	0.556
10-14	0.607	0.607	0.832	0.750	0.607	0.776	0.776	0.776
15-19	0.562	0.562	0.739	0.773	0.562	0.692	0.692	0.692
20-24	0.537	0.537	0.710	0.610	0.537	0.784	0.784	0.784
25-29	0.597	0.597	0.833	0.678	0.597	0.815	0.815	0.815
30-34	0.659	0.659	0.893	0.682	0.659	0.858	0.858	0.858
35-39	0.694	0.694	0.936	0.744	0.694	0.864	0.864	0.864
40-44	0.693	0.693	0.944	0.842	0.693	0.826	0.826	0.826
45-49	0.622	0.622	0.939	0.788	0.622	0.801	0.801	0.801
50-54	0.622	0.622	0.939	0.788	0.622	0.801	0.801	0.801
55-59	0.607	0.607	0.858	0.882	0.607	0.829	0.829	0.829
60-64	0.607	0.607	0.858	0.882	0.607	0.829	0.829	0.829
65-69	0.630	0.630	0.864	0.908	0.630	0.864	0.864	0.864
70-74	0.630	0.630	0.864	0.908	0.630	0.864	0.864	0.864
75-79	0.853	0.853	0.880	0.968	0.853	0.947	0.947	0.947
80-84	0.853	0.853	0.880	0.968	0.853	0.947	0.947	0.947
85-89	0.853	0.853	0.880	0.968	0.853	0.947	0.947	0.947
90-94	0.853	0.853	0.880	0.968	0.853	0.947	0.947	0.947
					Male			
Under 5	0.175	0.175	0.347	0.202	0.175	0.217	0.217	0.217
1-9	0.388	0.388	0.647	0.471	0.388	0.483	0.483	0.483
10-14	0.635	0.635	0.793	0.755	0.635	0.709	0.709	0.709
15-19	0.624	0.624	0.677	0.729	0.624	0.551	0.551	0.551
20-24	0.517	0.517	0.644	0.612	0.517	0.616	0.616	0.616
25-29	0.598	0.598	0.753	0.605	0.598	0.666	0.666	0.666
30-34	0.662	0.662	0.816	0.642	0.662	0.703	0.703	0.703
35-39	0.672	0.672	0.896	0.729	0.672	0.736	0.736	0.736
40-44	0.690	0.690	0.861	0.743	0.690	0.645	0.645	0.645
45-49	0.669	0.669	0.887	0.864	0.669	0.796	0.796	0.796
50-54	0.669	0.669	0.887	0.864	0.669	0.796	0.796	0.796
55-59	0.673	0.673	0.898	0.765	0.673	0.686	0.686	0.686
60-64	0.673	0.673	0.898	0.765	0.673	0.686	0.686	0.686
65-69	0.756	0.756	0.801	0.843	0.756	0.779	0.779	0.779
70-74	0.756	0.756	0.801	0.843	0.756	0.779	0.779	0.779
75-79	0.903	0.903	0.972	0.961	0.903	0.936	0.936	0.936
80-84	0.903	0.903	0.972	0.961	0.903	0.936	0.936	0.936
85-89	0.903	0.903	0.972	0.961	0.903	0.936	0.936	0.936
90-94	0.903	0.903	0.972	0.961	0.903	0.936	0.936	0.936

Source: Urban Institute calculations of Dowhan and Duleep (2002)

Table 2–12. Share of Immigrants by Source Region, Legal Status, and Year: 1993-2004

Year	Eastern Europe	Western Europe + Japan	Asia (minus Japan)	Africa	Canada	Mexico	Carribean	Central and South America
				Legal Immigrants				
1993	0.1117	0.0764	0.3883	0.0307	0.0190	0.1400	0.1100	0.1240
1994	0.1294	0.0839	0.3562	0.0332	0.0200	0.1386	0.1303	0.1085
1995	0.1226	0.0686	0.3652	0.0589	0.0180	0.1249	0.1343	0.1075
1996	0.1169	0.0566	0.3295	0.0578	0.0173	0.1787	0.1275	0.1158
1997	0.1105	0.0514	0.3266	0.0599	0.0145	0.1843	0.1319	0.1209
1998	0.0957	0.0555	0.3249	0.0616	0.0154	0.2099	0.1143	0.1228
1999	0.1060	0.0496	0.3019	0.0568	0.0137	0.2301	0.1109	0.1312
2000	0.0990	0.0713	0.3040	0.0526	0.0191	0.2061	0.1038	0.1442
2001	0.0811	0.0984	0.3196	0.0507	0.0206	0.1962	0.0973	0.1361
2002	0.0863	0.0905	0.3138	0.0567	0.0184	0.2088	0.0907	0.1349
2003	0.1051	0.0524	0.3383	0.0691	0.0162	0.1659	0.0975	0.1556
2004	0.0853	0.0688	0.3233	0.0661	0.0237	0.2095	0.0866	0.1369
2005	0.1123	0.0586	0.3489	0.0767	0.0197	0.1486	0.0975	0.1377
2006	0.1039	0.0694	0.3340	0.0564	0.0184	0.1798	0.1088	0.1294
				Illegal Immigrants				
1993-2006	0.0207	0.0143	0.0757	0.0207	0.0069	0.6536	0.0420	0.1661

Source: Urban Institute tabulations from the 2006 U.S. Immigration and Naturalization Service (INS) yearbook for legal immigrants and Passel (2006) for illegal immigrants.

Table 2–13. Share of Immigrants by Age, Sex, and Source Region

Age	Eastern Europe	Western Europe + Japan	Asia (minus Japan)	Africa	Canada	Mexico	Carribean	Central and South America
				Female				
Under 5	0.0295	0.0315	0.0254	0.0261	0.0315	0.0550	0.0378	0.0325
1-9	0.0462	0.0295	0.0312	0.0276	0.0322	0.0408	0.0379	0.0388
10-14	0.0387	0.0220	0.0306	0.0272	0.0303	0.0330	0.0480	0.0372
15-19	0.0360	0.0420	0.0413	0.0358	0.0316	0.0643	0.0692	0.0513
20-24	0.0384	0.0903	0.0671	0.0742	0.0702	0.0916	0.0688	0.0857
25-29	0.0542	0.1019	0.0918	0.0849	0.0865	0.0627	0.0644	0.0786
30-34	0.0598	0.0708	0.0608	0.0615	0.0643	0.0353	0.0474	0.0543
35-39	0.0520	0.0437	0.0406	0.0311	0.0435	0.0203	0.0311	0.0354
40-44	0.0430	0.0263	0.0290	0.0180	0.0275	0.0107	0.0260	0.0246
45-49	0.0191	0.0152	0.0185	0.0056	0.0197	0.0097	0.0192	0.0142
50-54	0.0239	0.0093	0.0176	0.0074	0.0133	0.0071	0.0152	0.0108
55-59	0.0192	0.0053	0.0166	0.0054	0.0131	0.0050	0.0132	0.0096
60-64	0.0144	0.0048	0.0169	0.0076	0.0108	0.0051	0.0130	0.0101
65-69	0.0180	0.0039	0.0124	0.0037	0.0118	0.0033	0.0103	0.0067
70-74	0.0082	0.0031	0.0073	0.0009	0.0054	0.0022	0.0068	0.0041
75-79	0.0090	0.0025	0.0038	0.0019	0.0052	0.0015	0.0045	0.0027
80-84	0.0049	0.0021	0.0016	0.0002	0.0050	0.0009	0.0026	0.0009
85-89	0.0026	0.0021	0.0006	0.0008	0.0022	0.0004	0.0015	0.0004
90-94	0.0009	0.0004	0.0001	0.0000	0.0003	0.0002	0.0000	0.0001
				Male				
Under 5	0.0240	0.0317	0.0286	0.0294	0.0323	0.0571	0.0411	0.0331
1-9	0.0430	0.0301	0.0334	0.0312	0.0325	0.0426	0.0407	0.0392
10-14	0.0387	0.0230	0.0334	0.0258	0.0321	0.0358	0.0492	0.0421
15-19	0.0361	0.0336	0.0475	0.0419	0.0372	0.0970	0.0579	0.0657
20-24	0.0302	0.0769	0.0675	0.0905	0.0630	0.1326	0.0618	0.0982
25-29	0.0491	0.0932	0.0777	0.1232	0.0742	0.0763	0.0627	0.0771
30-34	0.0604	0.0715	0.0570	0.1009	0.0613	0.0417	0.0492	0.0549
35-39	0.0587	0.0491	0.0358	0.0627	0.0393	0.0230	0.0319	0.0340
40-44	0.0487	0.0347	0.0261	0.0299	0.0372	0.0157	0.0255	0.0219
45-49	0.0243	0.0200	0.0184	0.0205	0.0166	0.0107	0.0146	0.0126
50-54	0.0196	0.0116	0.0146	0.0126	0.0164	0.0070	0.0131	0.0073
55-59	0.0132	0.0069	0.0122	0.0039	0.0144	0.0044	0.0099	0.0066
60-64	0.0114	0.0042	0.0118	0.0031	0.0171	0.0024	0.0095	0.0037
65-69	0.0103	0.0027	0.0110	0.0027	0.0115	0.0024	0.0067	0.0026
70-74	0.0058	0.0010	0.0068	0.0009	0.0043	0.0012	0.0056	0.0015
75-79	0.0044	0.0011	0.0030	0.0005	0.0044	0.0008	0.0017	0.0011
80-84	0.0025	0.0013	0.0013	0.0003	0.0012	0.0003	0.0012	0.0004
85-89	0.0013	0.0004	0.0005	0.0000	0.0003	0.0001	0.0009	0.0002
90-94	0.0003	0.0004	0.0001	0.0000	0.0004	0.0001	0.0001	0.0001

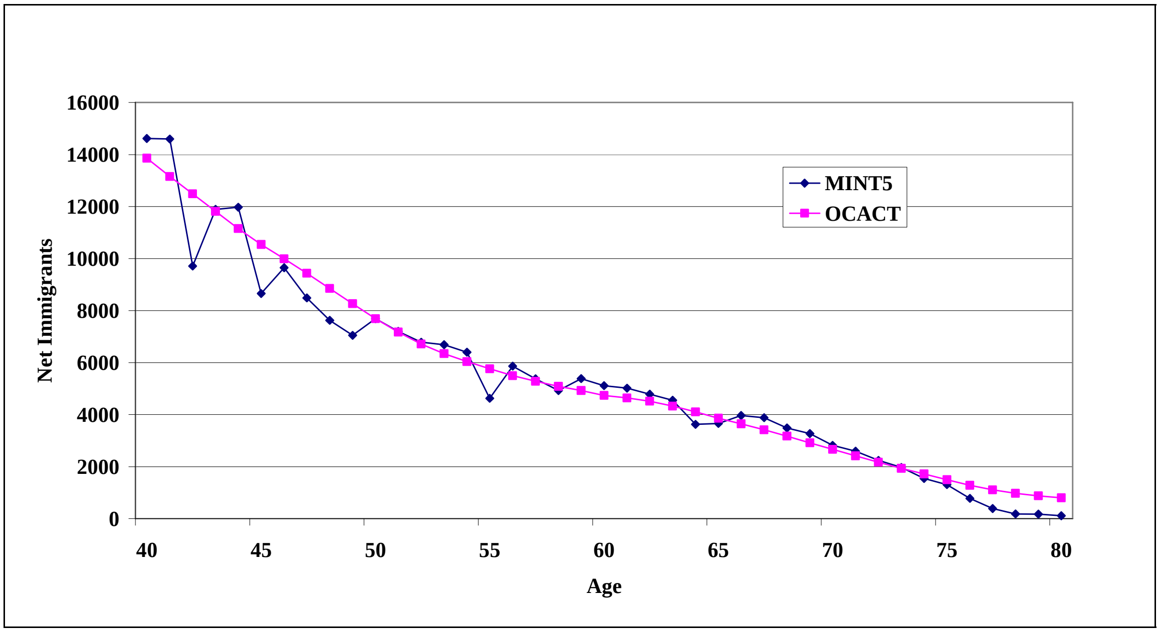
Source: Dowhan and Duleep (2002) updated in Attachment B of the RFTOP.

Table 2–14. Number of Net Immigrants by Age and Data Source: Selected Years 2005 to 2080

	MINT5									OCACT								
	Year									Year								
Age	**2005**	**2010**	**2020**	**2030**	**2040**	**2050**	**2060**	**2070**	**2080**	**2005**	**2010**	**2020**	**2030**	**2040**	**2050**	**2060**	**2070**	**2080**
40	15767	13570	11168	11929	12431	12596	.	.	.	13855	12553	12285	12018	12018	12018	12018	12018	12018
41	16613	12362	13970	10689	11021	13041	.	.	.	13154	11932	11665	11397	11397	11397	11397	11397	11397
42	15079	11823	12644	11835	8055	10315	9783	.	.	12485	11333	11069	10806	10806	10806	10806	10806	10806
43	13240	10852	9328	10497	10933	10631	10019	.	.	11814	10724	10473	10224	10224	10224	10224	10224	10224
44	12857	10015	10558	9851	10198	9866	9362	.	.	11149	10114	9885	9655	9655	9655	9655	9655	9655
45	7181	9199	8702	4981	7598	9373	8898	.	.	10540	9555	9346	9137	9137	9137	9137	9137	9137
46	10820	8390	8681	8416	8212	8415	8128	.	.	9989	9051	8858	8664	8664	8664	8664	8664	8664
47	9693	7709	7499	7347	7701	7241	7208	.	.	9430	8542	8363	8184	8184	8184	8184	8184	8184
48	9159	7409	6491	6487	5365	4961	7100	.	.	8848	8014	7847	7680	7680	7680	7680	7680	7680
49	8963	6911	6769	6393	6493	6114	6826	.	.	8261	7483	7327	7171	7171	7171	7171	7171	7171
50	8282	6568	6568	6640	6667	5675	6666	.	.	7690	6967	6820	6673	6673	6673	6673	6673	6673
51	7172	6221	6109	5936	5999	6113	6249	.	.	7171	6495	6358	6220	6220	6220	6220	6220	6220
52	6704	6456	5387	5017	4147	4992	6027	5304	.	6716	6083	5955	5828	5828	5828	5828	5828	5828
53	6616	6000	5930	5445	5320	5862	5867	5397	.	6342	5742	5624	5506	5506	5506	5506	5506	5506
54	7128	5484	5111	5131	5145	5565	5516	5037	.	6037	5464	5355	5245	5245	5245	5245	5245	5245
55	6300	4756	5196	3320	5211	4890	5224	4975	.	5761	5211	5110	5009	5009	5009	5009	5009	5009
56	6334	5200	5381	4206	4274	1753	3813	3980	.	5499	4972	4880	4786	4786	4786	4786	4786	4786
57	5497	794	4432	4620	4582	4183	3825	4754	.	5277	4766	4681	4596	4596	4596	4596	4596	4596
58	5590	4395	4491	4273	4152	4431	4789	3721	.	5088	4591	4515	4437	4437	4437	4437	4437	4437
59	5842	4797	4396	3968	4493	3979	3972	3568	.	4928	4442	4373	4304	4304	4304	4304	4304	4304
60	5711	4481	4520	4613	4178	4196	4326	4290	.	4736	4259	4204	4150	4150	4150	4150	4150	4150
61	5628	4423	3731	4428	4191	3579	4474	3966	.	4642	4173	4120	4069	4069	4069	4069	4069	4069
62	5031	4613	3842	3604	2990	4173	4042	4014	3915	4514	4056	4005	3955	3955	3955	3955	3955	3955
63	4795	4430	4029	4243	3740	3165	3747	3715	3924	4329	3891	3843	3794	3794	3794	3794	3794	3794
64	-116	3208	3580	3836	3631	3653	3481	3458	3900	4103	3689	3642	3594	3594	3594	3594	3594	3594
65	2779	3291	3869	3889	3146	3197	3715	3124	3756	3862	3472	3428	3383	3383	3383	3383	3383	3383
70	3212	2470	2401	2614	2330	2712	2428	2136	2365	2664	2402	2362	2323	2323	2323	2323	2323	2323
75	1525	1427	1314	550	1144	1475	1463	1104	1092	1493	1357	1325	1293	1293	1293	1293	1293	1293
80	.	566	402	585	484	670	694	381	-233	802	736	709	683	683	683	683	683	683

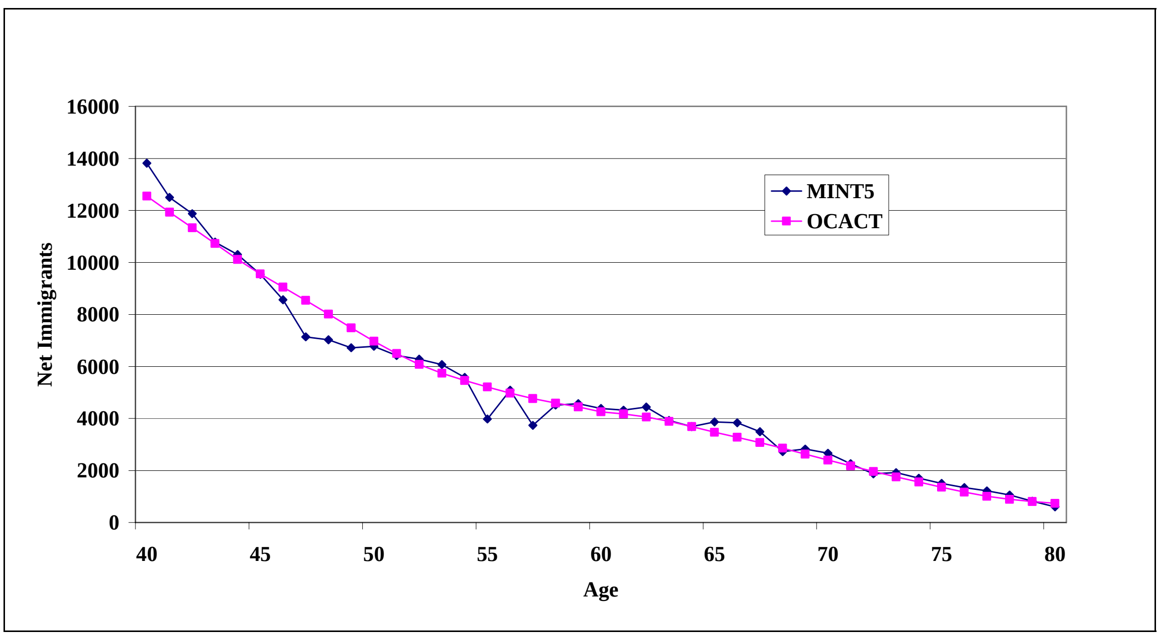
Source: Urban Institute tabulations of MINT5 and 2006 OCACT.

Figure 2–6. Net Immigrants 2005 by Age and Data Source



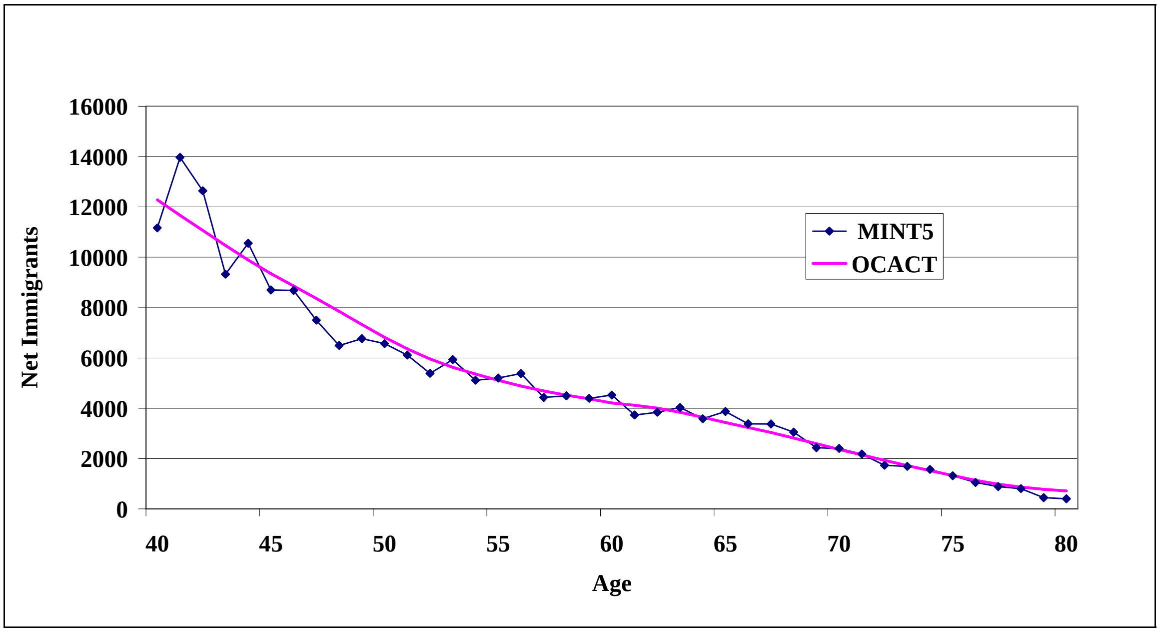
Source: Urban Institute tabulations of MINT5 and 2006 OCACT projections.
MINT values average over three years 2004-2006 to reduce the annual variation.

Figure 2–7. Net Immigrants 2010 by Age and Data Source



Source: Urban Institute tabulations of MINT5 and 2006 OCACT projections.
MINT values average over three years 2009-2011 to reduce the annual variation.

Figure 2–8. Net Immigrants 2020 by Age and Data Source



Source: Urban Institute tabulations of MINT5 and 2006 OCACT projections.
MINT values average over three years 2019-2021 to reduce the annual variation.

V. FERTILITY PROJECTIONS

MINT5 includes fertility projections that were not included in earlier versions of MINT. MINT5 includes the number of children born to each respondent and a vector containing the birthdates for up to 13 children. In addition, MINT5 includes a vector with the date each child ceases to be a dependent for tax purposes. Unlike other microsimulation models, MINT5 does not generate separate records for children, nor does it contain any links to child records. The fertility projections include only information about the number and birthdates of own and dependent children.

The fertility module starts with the self-reported fertility history collected in the second SIPP topical module. In addition we collect information from all waves of the SIPP core data. For women, the topical module gives the total number of children the mother has had along with the year and month of birth for her first and last child. The core provides the year and month of birth for all children still living in the household. We fill in the birthdates for the remaining number of children using basic assumptions about the spacing between children. Finally, we project future births using data from a logit model estimated by Michael Rendall (2005; 2003) that is used for Polisim.

The first step in this process is to get a definitive number of children for each mother. The number collected in the topical module includes only biological children that are born by wave 2 of the SIPP panel. Using the data from the core we are able to add to this number any children born after wave 2. For the 1996 SIPP panel, we added adopted and step-children still living in the household to the number of children. The information on whether a child in the core is an adopted or step-child is not included in the 1990-1993 panels. In general, we assume that observed children in the household are the respondent's children, and use the birth dates for these observed children to fill in the children's birthdates.

For all mothers who were under the age of 65 when data for the topical module was collected, we have the year and month for the birth of their first child. Although the sample covers most of the MINT cohorts, those born between 1926 and 1931 are missing this information. Using the topical module data for the 1931-1935 cohorts, we calculate a distribution of the age of the mother at first birth, and then use this distribution to impute the date of the first birth for the 1926-30 birth cohorts.

Because older children are the most likely to have left the household, if the target number of children exceeds the number of children in the core, we try to add as many children as possible between the first birth and the next child we have from the core. We attempt to equally space the number of children that need to be added over the time period between the first birth and the next birth from the core. However, if this method causes the spacing between children to be less than 12 months, we space them at 12 months instead, making into twins children who are closer together.

The topical module also provides the year and month of birth of the youngest child. If this child is not included in the core, then he is added at the end of the vector, and one less child is imputed.

While the children in the core of the 1996 panel have pointers to both their father and mother if both parents reside in the household, the 1990-1993 panel provides only a single parent pointer. For some children this pointer points to the father and for others to the mother. This presents a difficulty in using the core as described above. To accommodate this, we merge the birthdates of the children of the mother's current husband with the vector of birthdates for her own children. If the number of children in this vector exceeds the husband's target number of children, we keep only the most recent children from the husband's vector.

To project future children, we use a logit model estimated by Michael Rendall. Starting in the year of the last SIPP interview and going forward, the probability that a mother has a child is calculated based on her age, race, marriage history, fertility history, earnings, and the level of her own education and her mother's education. Comparing this probability to a random number, we determine whether the woman had a child in that year.

We also calculate fertility vectors for men. We have information on the total number of biological children from the topical module, but no information on the ages of any of the children. As in the case of the mothers, we have information from the core on the birthdates of children living in the household. In addition to this, we can match the men with their previous wives and use any children that were born during those marriages, adding the most recent children first until the target number of children is reached. If the target is not reached through this method, then children are added at 18 month intervals going backwards from the first child.

To project future children for married men, we match them to their spouses and add any children that come out of the wife's projection model. For unmarried men, we run the projection model in the same manner it is run for women. The marital status is determined by year, so men who are originally married but become divorced move to the projection model the year after the divorce.

Table 2–15 shows the average female fertility rates by age and birth year for both MINT and 2006 OCACT projections. In all cohort groups, the MINT5 and OCACT age-specific rates match reasonably closely. For women born between 1926 and 1930, MINT5 projects higher fertility rates at younger ages and lower fertility rates at older ages than OCACT. For most of these women, the children have left the parental home at the SIPP interview. While we know the number of children ever born to all women age 15 and older from the fertility history topical module on the SIPP, we do not know the date of birth for unobserved children other than the first and last child.[8] We assume births of unobserved children are evenly spaced between the births of the first and last *resident* child. This method appears to condense the children out over too narrow a range of years in MINT for women born between 1926 and 1930 (see Figure 2–9). MINT5 fertility rates more closely match OCACT rates for women born between 1931 and 1940, though MINT slightly understates fertility at younger ages (see Figure 2–10). Note, however, that these are self-reported children from SIPP. For women born between 1961 and 1970, where a large share of babies are imputed in MINT, fertility rates remain similar to OCACT projections. MINT projects women to have slightly more babies at younger ages and slightly fewer babies at older ages (see Figure 2–11).

Figure 2–12 compares the female parity (number of children a woman has had to date) for women ages 40 to 44 from 1970 to 2000 for MINT5 and 2000 National Center for Health Statistics (National Center for Health Statistics 2002). This figure confirms that parity in MINT5 closely matches the NCHS calculated parity. Comparisons of parity at younger ages also closely match NCHS data, though MINT5 slightly understates the age at first childbirth compared to NCHS especially for women in earlier cohorts.

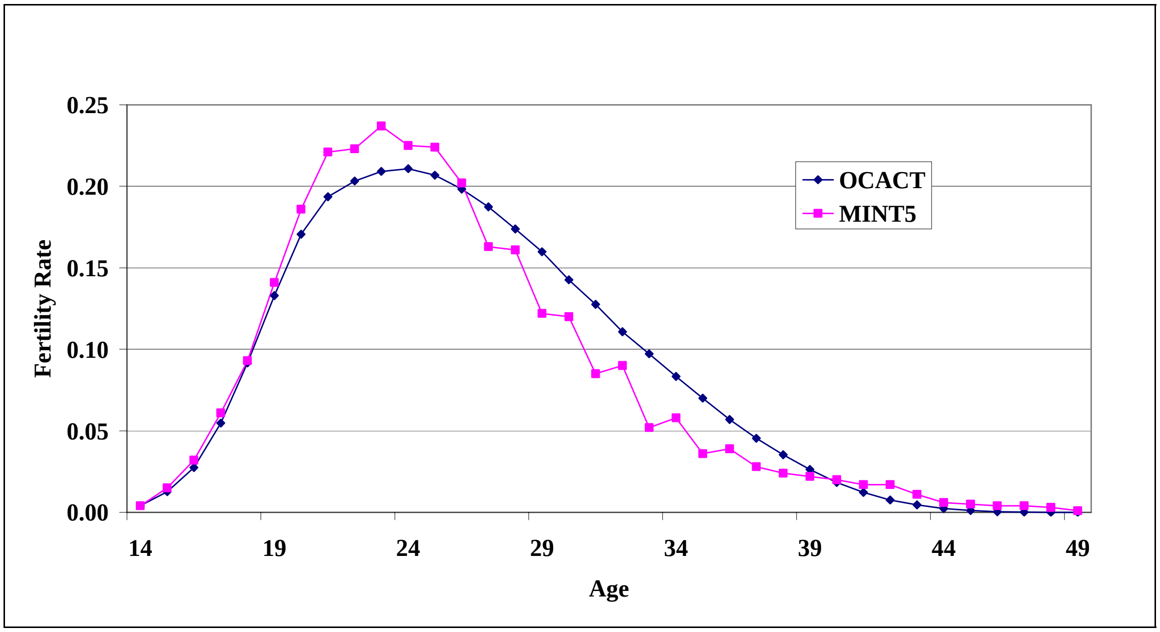
[8] The fertility topical module does not ask women age 65 and over birthdate information for her children. We impute these using fertility history from the nearest reported cohort.

Table 2–15. Female Fertility Rates by Birth Year , Age, and Data Source: MINT5 and OCACT

	MINT5										OCACT									
	Birth Year										Birth Year									
Age	1926-30	1931-40	1941-50	1951-60	1961-70	1971-80	1981-90	1991-00	2001-10	2010-18	1926-30	1931-40	1941-50	1951-60	1961-70	1971-80	1981-90	1991-00	2001-10	2010-18
16	0.032	0.042	0.032	0.030	0.037	0.036	0.040	0.043	0.042	0.044	0.028	0.027	0.043	0.041	0.037	0.031	0.035	0.025	0.021	0.020
17	0.061	0.063	0.044	0.042	0.052	0.050	0.054	0.059	0.059	0.062	0.054	0.055	0.081	0.074	0.061	0.050	0.056	0.042	0.038	0.036
18	0.093	0.095	0.067	0.062	0.068	0.074	0.069	0.078	0.075	0.079	0.085	0.092	0.128	0.115	0.083	0.072	0.079	0.064	0.059	0.056
19	0.141	0.143	0.099	0.085	0.095	0.077	0.071	0.071	0.070	0.072	0.111	0.133	0.173	0.150	0.099	0.087	0.096	0.087	0.082	0.079
20	0.186	0.184	0.129	0.113	0.112	0.093	0.086	0.094	0.094	0.100	0.128	0.171	0.213	0.175	0.108	0.099	0.104	0.095	0.089	0.085
21	0.221	0.216	0.147	0.115	0.114	0.100	0.098	0.099	0.102	0.103	0.145	0.194	0.236	0.183	0.112	0.108	0.108	0.098	0.092	0.089
22	0.223	0.212	0.154	0.122	0.121	0.094	0.094	0.098	0.096	0.098	0.163	0.203	0.248	0.180	0.116	0.113	0.111	0.103	0.096	0.093
23	0.237	0.233	0.158	0.128	0.122	0.114	0.106	0.111	0.110	0.109	0.172	0.209	0.248	0.172	0.119	0.116	0.111	0.105	0.098	0.095
24	0.225	0.220	0.169	0.144	0.137	0.119	0.122	0.123	0.125	0.127	0.173	0.211	0.238	0.160	0.119	0.115	0.111	0.106	0.100	0.098
25	0.224	0.213	0.163	0.129	0.122	0.125	0.123	0.123	0.122	0.123	0.169	0.207	0.220	0.147	0.119	0.116	0.112	0.109	0.104	0.103
26	0.202	0.191	0.154	0.127	0.129	0.121	0.133	0.132	0.137	0.138	0.162	0.198	0.198	0.134	0.117	0.117	0.112	0.107	0.103	0.104
27	0.163	0.158	0.137	0.126	0.120	0.121	0.112	0.116	0.117	0.115	0.155	0.187	0.176	0.121	0.112	0.115	0.112	0.107	0.104	0.106
28	0.161	0.158	0.138	0.128	0.129	0.129	0.131	0.130	0.130	0.129	0.146	0.174	0.154	0.107	0.111	0.116	0.112	0.107	0.104	0.105
29	0.122	0.121	0.115	0.108	0.117	0.117	0.113	0.111	0.110	0.107	0.137	0.160	0.134	0.094	0.097	0.107	0.111	0.106	0.103	0.106
30	0.120	0.112	0.097	0.100	0.108	0.102	0.105	0.106	0.106	0.105	0.125	0.143	0.114	0.079	0.091	0.101	0.110	0.114	0.115	0.119
31	0.085	0.093	0.084	0.089	0.101	0.107	0.105	0.105	0.106	0.106	0.114	0.128	0.096	0.067	0.084	0.096	0.105	0.109	0.110	0.113
32	0.090	0.088	0.078	0.093	0.092	0.098	0.096	0.095	0.094	0.092	0.102	0.111	0.079	0.056	0.074	0.087	0.094	0.097	0.099	0.104
33	0.052	0.067	0.056	0.069	0.066	0.077	0.084	0.082	0.081	0.081	0.094	0.097	0.065	0.047	0.064	0.078	0.086	0.089	0.090	0.091
34	0.058	0.056	0.053	0.064	0.062	0.062	0.062	0.061	0.060	0.061	0.083	0.083	0.052	0.039	0.054	0.069	0.077	0.079	0.081	0.083
35	0.036	0.043	0.042	0.051	0.049	0.054	0.058	0.059	0.060	0.059	0.073	0.070	0.041	0.032	0.046	0.059	0.068	0.073	0.074	0.076
36	0.039	0.043	0.036	0.043	0.037	0.045	0.045	0.044	0.044	0.042	0.064	0.057	0.033	0.026	0.039	0.049	0.056	0.059	0.062	0.064
37	0.028	0.034	0.026	0.035	0.030	0.029	0.030	0.029	0.027	0.028	0.055	0.045	0.025	0.020	0.031	0.039	0.044	0.046	0.048	0.050
38	0.024	0.023	0.020	0.025	0.024	0.024	0.029	0.028	0.029	0.026	0.046	0.035	0.019	0.016	0.025	0.031	0.034	0.036	0.037	0.037
39	0.022	0.019	0.017	0.019	0.016	0.017	0.017	0.017	0.017	0.017	0.037	0.026	0.014	0.011	0.018	0.024	0.026	0.027	0.029	0.029
40	0.020	0.015	0.014	0.014	0.011	0.008	0.008	0.007	0.007	0.007	0.028	0.018	0.009	0.008	0.013	0.017	0.019	0.019	0.021	0.021
41	0.017	0.011	0.010	0.009	0.010	0.008	0.008	0.009	0.008	0.008	0.020	0.012	0.006	0.006	0.009	0.012	0.013	0.013	0.014	0.014
42	0.017	0.010	0.006	0.007	0.006	0.005	0.006	0.006	0.006	0.006	0.014	0.008	0.004	0.004	0.006	0.007	0.008	0.008	0.009	0.009
43	0.011	0.006	0.005	0.004	0.004	0.002	0.001	0.002	0.002	0.002	0.009	0.005	0.002	0.002	0.004	0.004	0.005	0.005	0.005	0.005
44	0.006	0.005	0.003	0.003	0.005	0.004	0.005	0.004	0.004	0.004	0.006	0.002	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003
45	0.005	0.004	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.002	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
46	0.004	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001
47	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
49	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

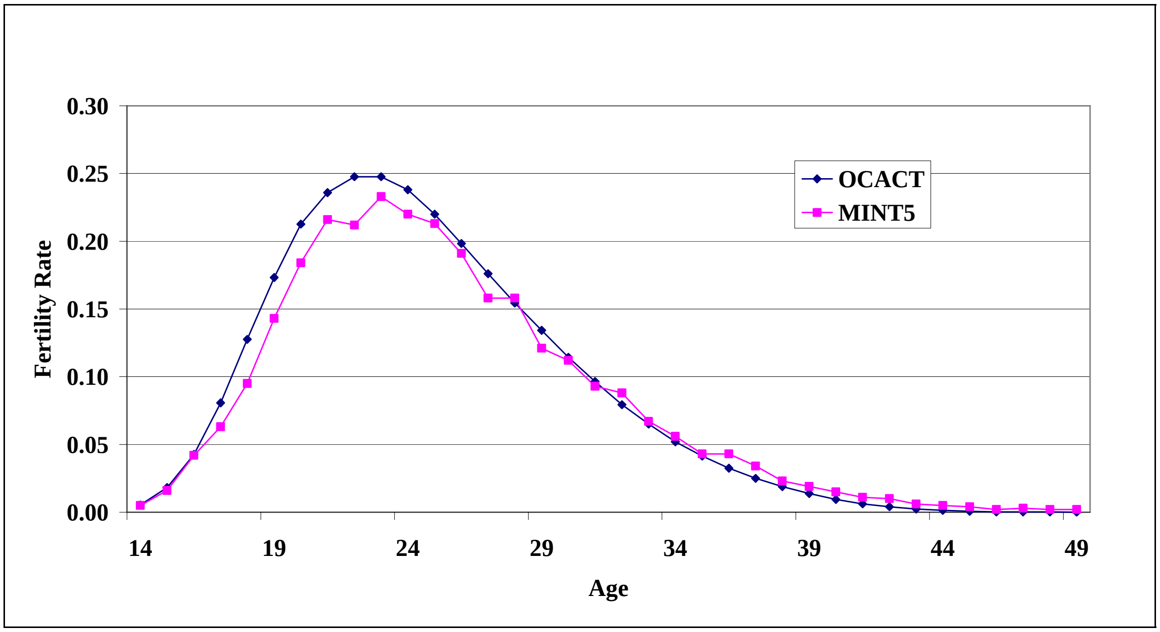
Source: Urban Institute tabulations of MINT5 and 2006 OCACT.

Figure 2–9. Female Fertility Rates for Women Born Between 1926 and 1930



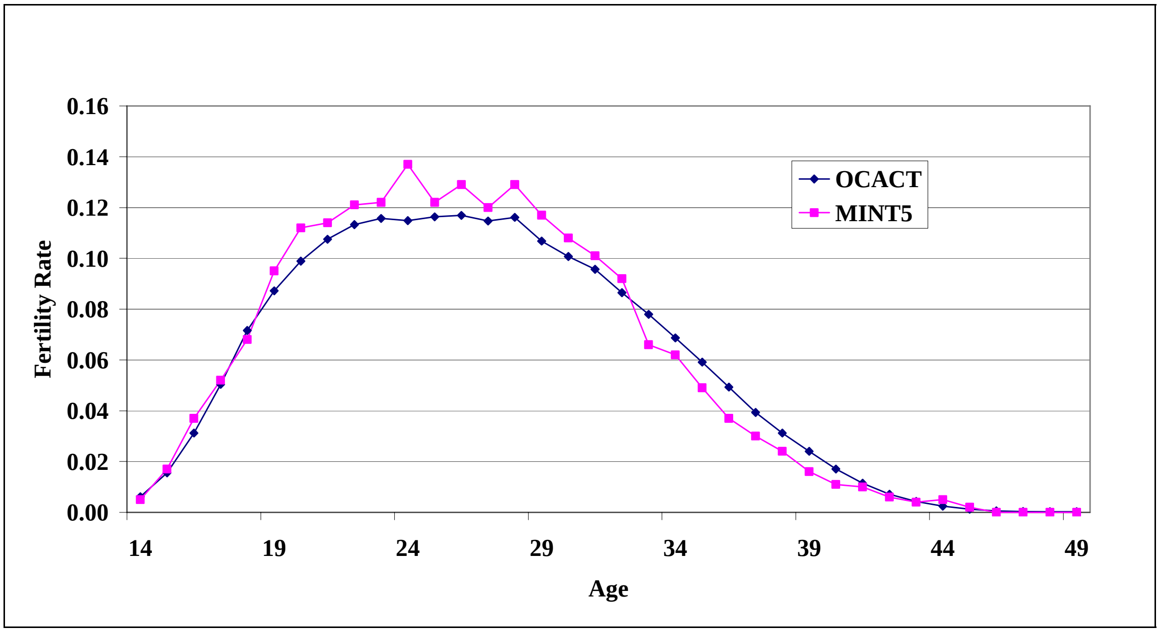
Source: Urban Institute tabulations of MINT5 and 2006 OCACT.

Figure 2–10. Female Fertility Rates for Women Born Between 1931 and 1940



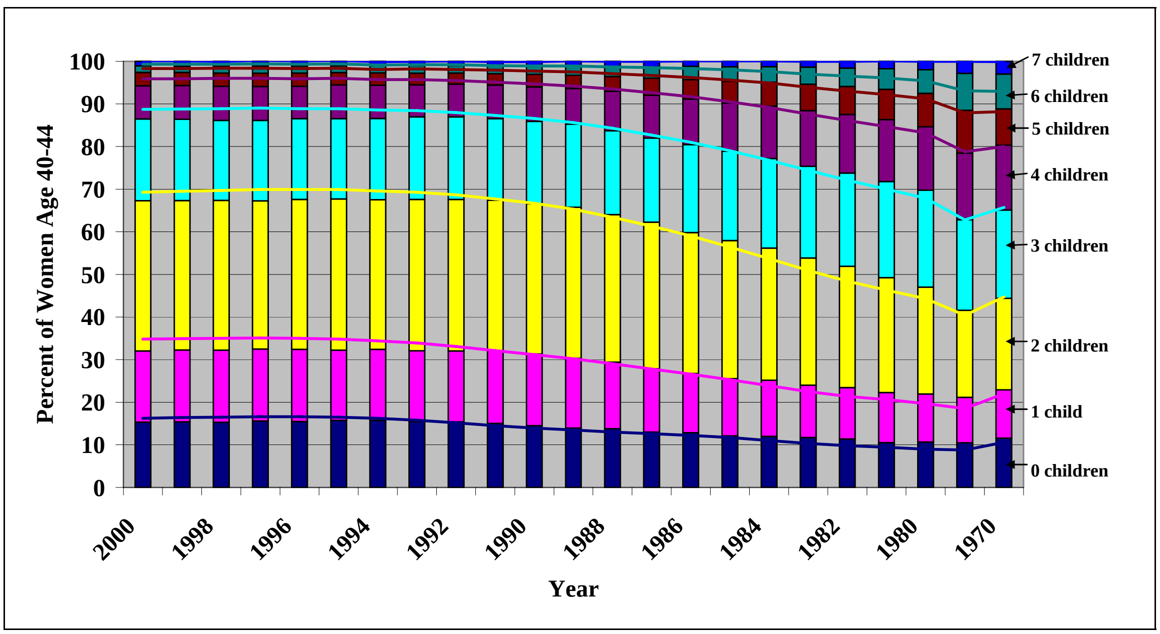
Source: Urban Institute tabulations of MINT5 and 2006 OCACT.

Figure 2–11. Female Fertility Rates for Women Born Between 1961 and 1970



Source: Urban Institute tabulations of MINT5 and 2006 OCACT.

Figure 2–12. Percentage of Women between Age 40 and 44 by Number of Children and Year: Bars=MINT5, Lines=NCHS



Source: Urban Institute tabulations of MINT5 and 2000 NCHS.

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CHAPTER 3

UPDATED PROJECTIONS OF WEALTH AND ANNUITY INCOME

I. INTRODUCTION

MINT projects home ownership, home equity, and nonpension financial assets over three separate age ranges: age at the SIPP interview to age 50, age 51 to retirement, and retirement to death. The models to project assets to age 50 were estimated on the Panel Survey of Income Dynamics. The models to project assets from age 51 to retirement were estimated on the first two waves of the Health and Retirement Study (HRS). The models to project assets from retirement to death were estimated on a synthetic panel of Survey of Income and Program Participation (SIPP) data. The latter two data sets included historic earnings from the Social Security Administration's Summary Earnings Record (SER) data.

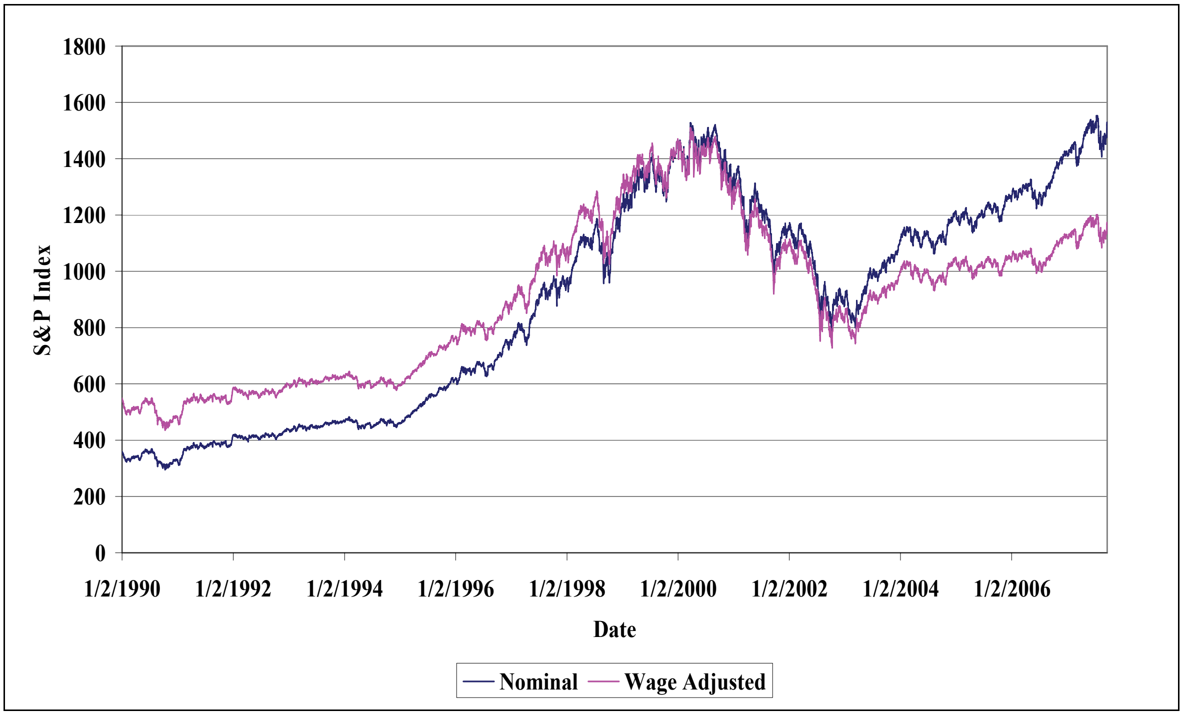
More HRS data have become available since the asset models were estimated for earlier versions of MINT. The MINT5 contract required re-estimation of the asset models for ages 51 to retirement using these additional data. The previous MINT estimates used waves 1 and 2 (1992 and 1994) of the HRS data linked to the SER for the 1931 to 1941 birth cohorts. Seven waves of HRS data are now available, spanning the years 1992-2004 and additional birth cohorts have been added to the HRS panel.[1] Furthermore, the HRS data has now been linked to the Social Security Administration's Detailed Earnings Record (DER). In contrast to the SER, the DER includes earnings in both Social Security covered and uncovered jobs and includes earnings above the Social Security taxable maximum.

Three recent developments may affect the relationship between MINT asset projections, which are based on historical trends, and current asset values. First, the stock market rose sharply between January 1995 and September 2000, then declined markedly through March 2003 and subsequently re-bounded. It did not return to its 2000 peak in absolute dollars until 2007. The ratio of stock prices to the national average wage, however, remains significantly lower than the 2000 peak (see Figure 3–1). Second, home equity values grew sharply between 1998 and 2004 (see Figure 3–2). Much of this increase was due to rising house prices, but some was also attributable to a decline in mortgage debt associated with population aging. Finally, a much larger share of workers today have access to 401k and other tax-deferred defined contribution (DC) accounts than in earlier years. This growth in access to tax-deferred assets could lead to a reduction in growth in assets outside of tax-free accounts, if people substitute contributions to tax-deferred DC accounts for other savings.

MINT uses separate methods to project tax-deferred retirement accounts, other financial assets, and home equity up to the age of retirement, but then estimates a single model to project the spend down of all wealth outside of DB pension plans after retirement. In this chapter, we present updated estimates of the nonpension financial

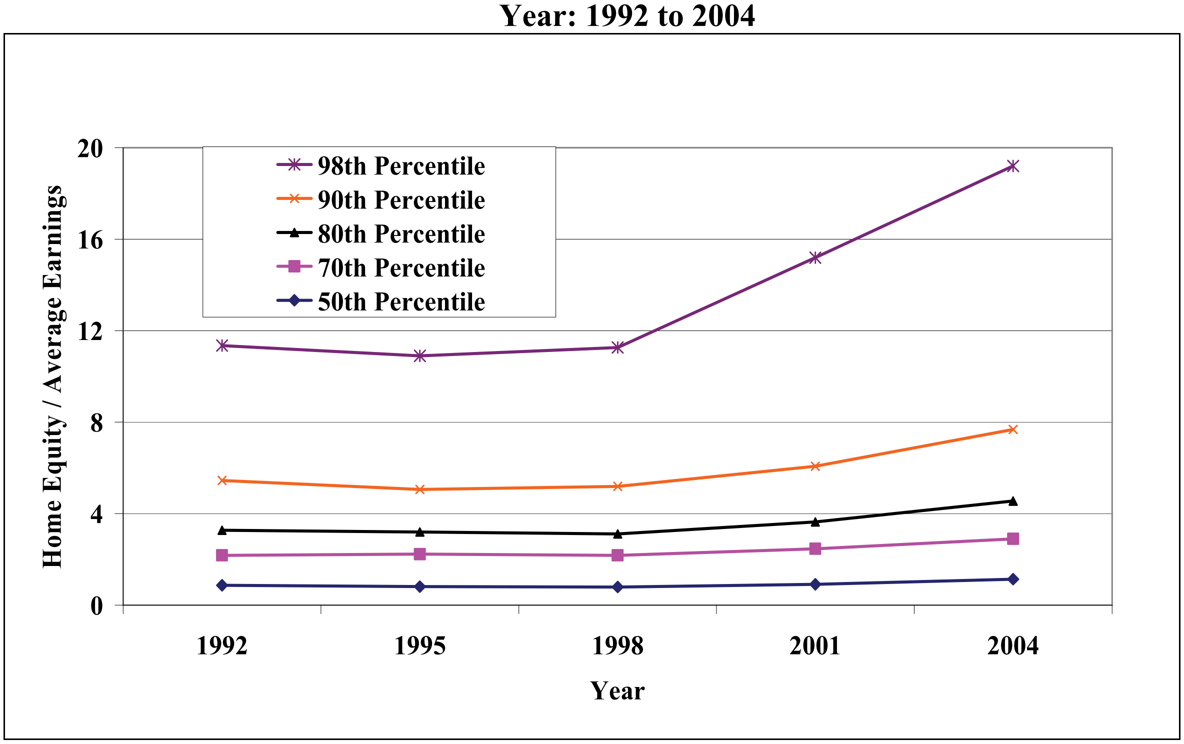
[1] War babies (those born between 1942 and 1947) were added in 1998, and early boomers (those born between 1948 and 1953) were added in 2004.

Figure 3–1. Nominal and Wage-Adjusted Standard and Poor's Stock Index: 1990-2007



Source: http://finance.yahoo.com/q/bc?s=%5EGSPC and Urban Institute calculations.
Notes: Wage adjusted to January 2001 values.

Figure 3–2. Distribution of Home Equity Relative to Average Earnings by Year: 1992 to 2004



Source: Urban Institute tabulations of 1992, 1995, 1998, 2001, and 2004 Survey of Consumer Finance.

asset and home equity models, using all available HRS waves linked to the DER data from age 51 to retirement. We present estimates of separate random-effects models for married couples and singles for both non-pension financial assets and home equity.

Non-pension assets in MINT include balances in savings, money market, and checking accounts, certificates of deposit, savings bonds, values of stocks and mutual funds (excluding IRAs), equity in residential property (other than own residence), vehicle equity, and business equity, less unsecured debt (credit card debt, doctor bills, and other unsecured debt).

As noted above, MINT uses other methods to project pension assets, including defined benefit (DB), cash balance (CB), and defined contribution (DC) plans (including IRAs). The new projections of pension assets in MINT5 are described in chapter 8.

For post-retirement financial wealth, we use the asset spend down model estimated for MINT1 (Toder *et. al.* 1999). MINT assumes that individuals begin to spend down their assets at retirement. The projections of total financial wealth include both financial assets inside and outside of tax-deferred accounts. These assets are combined at retirement. We then assume that individuals spend first from their non-pension assets accounts and then from their tax-deferred pension assets so that they can maximize the share of their wealth held in tax-deferred accounts. Beginning at age 70 ½, however, individuals must withdraw minimum amounts from their tax-deferred accounts according to IRS-prescribed schedules that represent the estimated annuity payment from the account. MINT implements the required payout from tax-deferred accounts by shifting assets from non-taxable to taxable accounts, while keeping total wealth as predicted by the spend down equation. Amounts withdrawn from the tax-deferred accounts (including a nominal rate of return) are included in taxable income.

II. ESTIMATION RESULTS

Tables 3–1 and 3–3 show the parameter estimates for couple and single home equity. Table 3–2 and 3–4 show the parameter estimates for couple and single home value. Tables 3–5 and 3–6 show parameter estimates for couple and single nonpension assets. Each of these tables show the original HRS estimated models (including only 1992 and 1994 HRS waves) in column one (labeled MINT3 in the table) and the same models using data through 2004 in column two (model 1). Model 2 adds a foreign born indicator and spouse age difference (couples only: husband-wife age between –10 and +10) to model 1. Model 3 adds a series of year dummies to model 2, and model 4 adds a series of cohort dummies to model 2.

The updated wealth estimates have three changes compared to the original estimates:

1. The updated estimates include only families with matched administrative earnings. The original estimates included all families and used imputed lifetime earnings for non-matched cases.
2. The updated estimates use wealth data from the RANDVF file. This file includes improved wealth imputation and longitudinal edits. The original estimates used HRS provided data only.
3. The updated estimates include respondents ages 51 to 70 in the HRS cohorts (1931-1941) from 1992 to 2004 and war baby (WB) cohorts (1942-1947) from 1998 to 2004. The MINT3 estimates used only the HRS cohorts from 1992 to

1994.

The revised estimates are very similar to the estimates using the MINT3 variables both using the complete new data set and when restricted to include only the 1992 and 1994 HRS waves. The parameter estimates of variables common to all the models change little over different equation specifications. For the newly added variables, the coefficient of foreign born is positive and significant for home equity and negative and significant for financial assets. The coefficients of husband-wife age difference show housing wealth decreasing by about 0.9 percent per year of age difference and financial assets increasing by about 0.6 percent per year of age difference, compared with couples when husband and wife are the same age.

1. Couple Home Equity

Table 3–1 shows the random effects model results for the log of couple home equity divided by the average wage for homeowners. The year dummies (model 3) are negative and statistically significant for couple home equity, indicating lower home equity for couples the same age in more recent years. Controlling for age, earnings, and other independent variables, wage-adjusted home equity falls between 1992 (the omitted category) and 2000 and then rises through 2004, but remains below the 1992 level. The model with cohort dummies (model 4) shows that wage-adjusted home equity monotonically falls for each cohort group compared to husbands born before 1931. Note that the age slope variables change little by the addition of the cohort terms, while the age slope (head age) decreases when adding the year dummies. Model 4 is our preferred model and is used in the MINT5 projections.

2. Couple Home Value

Table 3–2 shows the random effects model results for log of couple home value divided by the average wage. As with home equity, home value falls between 1992 (the omitted group) and 2000, and rises through 2004 (model 3). While home equity in 2004 was lower compared to 1992, home value is higher. The cohort dummies in model 4, however, are small and not significant. Controlling for age and earnings, couples in later cohorts have significantly less home equity compared to earlier cohorts, but do not have less home value. This suggests that the reason older couples in later cohorts have less home equity than couples the same age in earlier cohorts is that they are incurring or retaining more housing-related debt (perhaps by paying off their mortgages more slowly or taking home equity loans) instead of living in lower value housing. Also, note that the age slope is smaller for home value (Table 3–1) than for home equity (Table 3–2), so home equity increases faster with age than home value. This is the expected result, reflecting the paying down of mortgage debt as people age.

3. Single Home Equity

Table 3–3 shows the random effects model results for log of single home equity divided by the average wage for homeowners. The year dummies (model 3) are negative and mostly not statistically significant for single home equity. As with home equity, the cohort dummies are not significant (model 4). The age slope variables change little by the addition of the either year or cohort terms. Model 2 is our preferred model and is used in the MINT5 projections.

Table 3–1. Random Effects Models for Home Equity for Couples

	MINT3			Model 1 Add Additional HRS Waves			Model 2 Add Foreign born and Spouse Age Difference			Model 3 Add Foreign born, Spouse Age Difference, Year Dummies			Model4 Add Foreign born, Spouse Age Difference, Cohort Dummies		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	-1.0532	0.1570	**	-0.6198	0.0750	**	-0.7374	0.0766	**	-1.2224	0.1289	**	-0.5418	0.0878	**
Husband age	0.0297	0.0026	**	0.0208	0.0012	**	0.0213	0.0012	**	0.0302	0.0022	**	0.0197	0.0012	**
Husband age * poor health	-0.0008	0.0004	*	-0.0015	0.0002	**	-0.0014	0.0002	**	-0.0014	0.0002	**	-0.0014	0.0002	**
Husband age * have DC pension	0.0022	0.0004	**	0.0015	0.0002	**	0.0015	0.0002	**	0.0015	0.0002	**	0.0015	0.0002	**
Husband age * have DB pension	0.0009	0.0004	**	0.0007	0.0002	**	0.0008	0.0002	**	0.0005	0.0002	*	0.0007	0.0002	**
Husband age * husband self-employment	0.0033	0.0005	**	0.0016	0.0003	**	0.0016	0.0003	**	0.0015	0.0003	**	0.0016	0.0003	**
Husband age * black	-0.0053	0.0007	**	-0.0048	0.0006	**	-0.0046	0.0006	**	-0.0045	0.0006	**	-0.0045	0.0006	**
Husband age * college graduate	0.0036	0.0006	**	0.0043	0.0005	**	0.0041	0.0005	**	0.0041	0.0005	**	0.0042	0.0005	**
Husband age * high school dropout	-0.0038	0.0006	**	-0.0031	0.0005	**	-0.0033	0.0005	**	-0.0035	0.0005	**	-0.0035	0.0005	**
Husband age * number of children ever had	-0.0005	0.0001	**	-0.0004	0.0001	**	-0.0004	0.0001	**	-0.0004	0.0001	**	-0.0004	0.0001	**
Wife high school dropout	-0.1600	0.0347	**	-0.1976	0.0318	**	-0.2204	0.0318	**	-0.2255	0.0317	**	-0.2243	0.0317	**
Wife college graduate	0.1263	0.0512	*	0.1369	0.0435	**	0.1362	0.0432	**	0.1490	0.0431	**	0.1475	0.0432	**
Wife post college graduate	0.1190	0.0522	*	0.1657	0.0434	**	0.1677	0.0432	**	0.1818	0.0431	**	0.1763	0.0431	**
Head present value of earnings/cohort average	0.1600	0.0191	**	0.1863	0.0169	**	0.1931	0.0170	**	0.2090	0.0170	**	0.2001	0.0173	**
Foreign born							0.2313	0.0428	**	0.2433	0.0427	**	0.2395	0.0428	**
Spouse age difference (husband-wife)							-0.0082	0.0016	**	-0.0090	0.0016	**	-0.0087	0.0016	**
Year 1992 (omitted category)															
Year 1994										-0.0142	0.0136				
Year 1996										-0.0525	0.0155	**			
Year 1998										-0.1368	0.0176	**			
Year 2000										-0.1809	0.0206	**			
Year 2002										-0.1131	0.0243	**			
Year 2004										-0.0735	0.0280	**			
Born before 1931 (omitted category)															
Born 1931-1935													-0.0958	0.0370	*
Born 1936-1940													-0.0956	0.0374	*
Born 1941-1945													-0.1802	0.0427	**
Born 1945-1947													-0.2714	0.0592	**
Standard error of the individual-specific error term	0.7396			0.6949			0.6887			0.6865			0.6873		
Standard error of the random error term	0.4315			0.4871			0.4872			0.4848			0.4872		
Fraction of variance due to individual-specific error	0.7461			0.6705			0.6665			0.6673			0.6656		
Wald Chi-square	891.2			1372.53			1444.76			1627.39			1478.3		
Number of observations	7283			18130			18115			18115			18115		
Number of groups	4152			4201			4196			4196			4196		
Model overall r-squared	0.1602			0.1685			0.1773			0.1806			0.1789		

Source: Urban Institute estimates from Health and Retirement Study. Notes ** p<0.01, * p<0.05.

Table 3–2. Random Effects Models for Home Value for Couples

MINT3	Model 1 Add Additional HRS Waves			Model 2 Add Foreign born and Spouse Age Difference			Model 3 Add Foreign born, Spouse Age Difference, Year Dummies			Model4 Add Foreign born, Spouse Age Difference, Cohort Dummies		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	0.8683	0.0541	**	0.7959	0.0554	**	0.8947	0.1073	**	0.7829	0.0631	**
Husband age	0.0031	0.0008	**	0.0034	0.0008	**	0.0016	0.0018		0.0036	0.0008	**
Husband age * poor health	-0.0010	0.0002	**	-0.0010	0.0002	**	-0.0010	0.0002	**	-0.0010	0.0002	**
Husband age * have DC pension	0.0010	0.0001	**	0.0010	0.0001	**	0.0010	0.0001	**	0.0010	0.0001	**
Husband age * have DB pension	0.0004	0.0001	*	0.0004	0.0001	**	0.0002	0.0001		0.0004	0.0001	**
Husband age * husband self-employment	0.0011	0.0002	**	0.0011	0.0002	**	0.0010	0.0002	**	0.0011	0.0002	**
Husband age * black	-0.0034	0.0005	**	-0.0031	0.0005	**	-0.0031	0.0005	**	-0.0031	0.0005	**
Husband age * college graduate	0.0050	0.0004	**	0.0047	0.0004	**	0.0047	0.0004	**	0.0047	0.0004	**
Husband age * high school dropout	-0.0041	0.0004	**	-0.0045	0.0004	**	-0.0044	0.0004	**	-0.0044	0.0004	**
Husband age * number of children ever had	-0.0001	0.0001		-0.0001	0.0001		-0.0001	0.0001		-0.0001	0.0001	
Wife high school dropout	-0.2406	0.0267	**	-0.2681	0.0267	**	-0.2686	0.0267	**	-0.2668	0.0267	**
Wife college graduate	0.2272	0.0366	**	0.2186	0.0363	**	0.2207	0.0363	**	0.2181	0.0364	**
Wife post college graduate	0.2510	0.0362	**	0.2507	0.0359	**	0.2558	0.0359	**	0.2483	0.0360	**
Head present value of earnings/cohort average	0.1325	0.0138	**	0.1499	0.0138	**	0.1641	0.0139	**	0.1517	0.0140	**
Foreign born				0.3264	0.0364	**	0.3304	0.0364	**	0.3274	0.0365	**
Spouse age difference (husband-wife)				-0.0016	0.0013		-0.0015	0.0013		-0.0015	0.0013	
Year 1992 (omitted category)												
Year 1994							0.0068	0.0094				
Year 1996							-0.0132	0.0112				
Year 1998							-0.0661	0.0134	**			
Year 2000							-0.0851	0.0161	**			
Year 2002							0.0112	0.0195				
Year 2004							0.0721	0.0226	**			
Born before 1931 (omitted category)												
Born 1931-1935										-0.0300	0.0313	
Born 1936-1940										0.0195	0.0314	
Born 1941-1945										-0.0202	0.0359	
Born 1945-1947										0.0489	0.0497	
Standard error of the individual-specific error term	0.6085			0.6016			0.6018			0.6013		
Standard error of the random error term	0.3282			0.3282			0.3249			0.3282		
Fraction of variance due to individual-specific error	0.7746			0.7706			0.7743			0.7704		
Wald Chi-square	1533.56			1645.96			1970.27			1653.29		
Number of observations	18213			18197			18197			18197		
Number of groups	4201			4196			4196			4196		
Model overall r-squared	0.2277			0.241			0.2447			0.2423		

Source: Urban Institute estimates from Health and Retirement Study.
Notes ** p<0.01, * p<0.05.

Table 3–3. Random Effects Models for Home Equity for Singles

	MINT3			Model 1 Add Additional HRS Waves			Model 2 Add Foreign born and Spouse Age Difference			Model 3 Add Foreign born, Spouse Age Difference, Year Dummies			Model4 Add Foreign born, Spouse Age Difference, Cohort Dummies		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	-0.41236	0.3827		-0.6625	0.1227	**	-0.6887	0.1228	**	-0.6616	0.2247	**	-0.6656	0.2267	**
Head age	0.01494	0.0068	*	0.0172	0.0021	**	0.01718	0.0021	**	0.0171	0.0042	**	0.0166	0.0022	**
Head age * number of children ever born	-0.00087	0.0003	**	-0.0006	0.0001	**	-0.00059	0.0001	**	-0.0006	0.0001	**	-0.0006	0.0001	**
Head age * poor health	-0.00277	0.0008	**	-0.0018	0.0004	**	-0.00184	0.0004	**	-0.0018	0.0004	**	-0.0018	0.0004	**
Head age * have DC pension	0.00288	0.0008	**	0.0010	0.0004	**	0.00099	0.0004	**	0.0010	0.0004	**	0.0010	0.0004	**
Head age * have DB pension	0.00080	0.0008		0.0005	0.0004		0.00052	0.0004		0.0004	0.0004		0.0005	0.0004	
Head age * self-employed	0.00448	0.0013	**	0.0016	0.0007	*	0.00162	0.0007	*	0.0016	0.0007	*	0.0016	0.0007	*
Total number of years married	0.00865	0.0024	**	0.0103	0.0015	**	0.01041	0.0015	**	0.0104	0.0015	**	0.0102	0.0015	**
Head age * College graduate	0.00351	0.0013	**	0.0051	0.0009	**	0.00493	0.0009	**	0.0050	0.0009	**	0.0050	0.0009	**
Head age * high school dropout	-0.00424	0.0012	**	-0.0058	0.0008	**	-0.00612	0.0008	**	-0.0061	0.0008	**	-0.0062	0.0008	**
Head age * male	-0.00391	0.0013	**	-0.0032	0.0008	**	-0.00303	0.0008	**	-0.0031	0.0008	**	-0.0030	0.0008	**
Number of years with earnings above the taxmax	0.01840	0.0051	**	0.0216	0.0034	**	0.02121	0.0034	**	0.0215	0.0034	**	0.0211	0.0034	**
Foreign born							0.34584	0.0723	**	0.3433	0.0723	**	0.3481	0.0723	**
Year 1992 (omitted category)															
Year 1994										-0.0089	0.0272				
Year 1996										-0.0093	0.0307				
Year 1998										-0.0693	0.0344	*			
Year 2000										-0.0793	0.0401	*			
Year 2002										-0.0147	0.0470				
Year 2004										0.0220	0.0534				
Born before 1931 (omitted category)															
Born 1931-1935													0.0391	0.1755	
Born 1936-1940													0.0385	0.1755	
Born 1941-1945													-0.0266	0.1784	
Born 1945-1947													0.0065	0.1871	
Standard error of the individual-specific error term				0.8436			0.8381			0.8372			0.8372		
Standard error of the random error term				0.5468			0.5471			0.5459			0.5472		
Fraction of variance due to individual-specific error				0.7042			0.7011			0.7016			0.7007		
Wald Chi-square	172.92			425.96			449.43			477.02			451.90		
Number of observations	2195			7818			7803			7803			7803		
Number of groups	1351			2392			2388			2388			2388		
Model overall r-squared	0.1128			0.1099			0.1173			0.1179			0.1177		

Source: Urban Institute estimates from Health and Retirement Study.
Notes ** p<0.01, * p<0.05.

4. Single Home Value

Table 3–4 shows the random effects model results for log of single home value divided by the average wage. The year dummies (model 3) are both positive and negative and mostly not statistically significant for single home value except in 2004. Controlling for age, earnings, and other independent variables, wage-adjusted home value rises between 2000 and 2004, with home values in 2004 being about 12 percent higher than home values in 1992. The estimated increase in home value in 2004 is much greater than the estimated increase in home equity. As with home equity, the cohort dummies are not significant (model 4). The age slope variable (head age) increases slightly by the addition of the cohort terms, and oddly becomes negative with the addition of the year variables. Based on model 2, home equity increases faster with age than does home value, the same as for couples.

5. Couple Non-Pension Assets

Table 3–5 shows the random effects model results for log of non-pension assets plus 0.02 divided by the average wage. The addition of an offset equal to 0.02 to the numerator allows MINT to use to the log of wealth as the dependent variable for couples with negative net financial assets. Model 1 is the same as the column labeled MINT3, but with the more recent HRS data included. Models 2-4 include a dummy variable for foreign born status and the same measure of spouse age difference used in the home equity model. Models 3 and 4 add dummy variables for age and cohort, respectively. In model 3, the year dummies are higher in 1994 and 1996 and lower in 1998 than in 1992 (the omitted group), but the age coefficients are mostly insignificant. The set of cohort dummies (model 4) are all not significant. Our preferred specification, model 2, is used in the MINT5 projections.

6. Single Non-Pension Assets

Table 3–6 shows the random effects model results for the log of non-pension assets plus 0.02 divided by the average wage for singles. As with couples, both the year and cohort dummies (models 3 and 4) are not statistically significant. Our preferred model, again model 2, is used in the MINT5 projections.

III. PROJECTION RESULTS

The MINT5 wealth and home equity projections now include the re-estimated HRS models. These updated models only affect the projections from ages 50 to retirement. Projections outside of this age range continue to use the MINT3 equations.

1. Home Ownership

Table 3–7 shows MINT5 projected family home ownership rates by age and birth year. In all birth years, the home ownership rate rises with age. MINT5 projects that the home ownership rate at a given age will increase slightly for later cohorts of individuals

Table 3–4. Random Effects Models for Home Value for Singles

MINT3	Model 1 Add Additional HRS Waves			Model 2 Add Foreign born and Spouse Age Difference			Model 3 Add Foreign born, Spouse Age Difference, Year Dummies			Model4 Add Foreign born, Spouse Age Difference, Cohort Dummies		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	0.5989	0.0953	**	0.5688	0.0953	**	1.0165	0.1952	**	0.5481	0.1703	**
Head age	0.0024	0.0016		0.0024	0.0016		-0.0058	0.0037		0.0035	0.0017	*
Head age * number of children ever born	-0.0002	0.0001		-0.0002	0.0001		-0.0002	0.0001		-0.0002	0.0001	
Head age * poor health	-0.0015	0.0003	**	-0.0015	0.0003	**	-0.0015	0.0003	**	-0.0015	0.0003	**
Head age * have DC pension	0.0007	0.0003	*	0.0007	0.0003	*	0.0007	0.0003	*	0.0007	0.0003	*
Head age * have DB pension	0.0010	0.0003	**	0.0011	0.0003	**	0.0010	0.0003	**	0.0011	0.0003	**
Head age * self-employed	0.0012	0.0005	*	0.0011	0.0005	*	0.0011	0.0005	*	0.0011	0.0005	*
Total number of years married	0.0069	0.0013	**	0.0070	0.0013	**	0.0075	0.0013	**	0.0074	0.0013	**
Head age * College graduate	0.0069	0.0008	**	0.0067	0.0008	**	0.0066	0.0008	**	0.0066	0.0008	**
Head age * high school dropout	-0.0073	0.0007	**	-0.0076	0.0007	**	-0.0074	0.0007	**	-0.0074	0.0007	**
Head age * male	-0.0039	0.0007	**	-0.0038	0.0007	**	-0.0039	0.0007	**	-0.0039	0.0007	**
Number of years with earnings above the taxmax	0.0255	0.0030	**	0.0253	0.0029	**	0.0264	0.0030	**	0.0257	0.0030	**
Foreign born				0.3893	0.0639	**	0.3824	0.0638	**	0.3836	0.0639	**
Year 1992 (omitted category)												
Year 1994							-0.0079	0.0206				
Year 1996							0.0246	0.0240				
Year 1998							-0.0065	0.0278				
Year 2000							-0.0095	0.0332				
Year 2002							0.0762	0.0396				
Year 2004							0.1194	0.0455	**			
Born before 1931 (omitted category)												
Born 1931-1935										-0.1173	0.1307	
Born 1936-1940										-0.0245	0.1314	
Born 1941-1945										-0.0230	0.1353	
Born 1945-1947										0.0470	0.1463	
Standard error of the individual-specific error term	0.7637			0.7565			0.7551			0.7558		
Standard error of the random error term	0.4064			0.4065			0.4053			0.4065		
Fraction of variance due to individual-specific error	0.7793			0.7759			0.7763			0.7756		
Wald Chi-square	576.95			620.1			666.09			630.06		
Number of observations	7836			7821			7821			7821		
Number of groups	2392			2388			2388			2388		
Model overall r-squared	0.1603			0.1728			0.1744			0.1743		

Source: Urban Institute estimates from Health and Retirement Study.
Notes ** p<0.01, * p<0.05.

Table 3–5. Random Effects Models for Financial Assets for Couples

	MINT3			Model 1 Add Additional HRS Waves			Model 2 Add Foreign born and Spouse Age Difference			Model 3 Add Foreign born, Spouse Age Difference, Year Dummies			Model4 Add Foreign born, Spouse Age Difference, Cohort Dummies		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	-1.2347	0.2445	**	-0.2147	0.1575		-0.2407	0.1607		-0.8121	0.2387	**	-0.0804	0.1831	
Husband age * own home	0.0271	0.0040	**	0.0089	0.0024	**	0.0090	0.0024	**	0.0190	0.0040	**	0.0069	0.0025	**
Husband age * rent	0.0180	0.0041	**	0.0025	0.0025		0.0027	0.0025		0.0127	0.0041	**	0.0006	0.0027	
Husband age * poor health	-0.0031	0.0006	**	-0.0025	0.0004	**	-0.0025	0.0004	**	-0.0025	0.0004	**	-0.0025	0.0004	**
Husband age * family SS DI receipt	-0.0044	0.0009	**	-0.0056	0.0008	**	-0.0057	0.0008	**	-0.0058	0.0008	**	-0.0058	0.0008	**
Husband age * have DC pension	0.0064	0.0006	**	0.0013	0.0004	**	0.0013	0.0004	**	0.0013	0.0004	**	0.0013	0.0004	**
Husband age * have DB pension	0.0011	0.0006		0.0016	0.0004	**	0.0016	0.0004	**	0.0013	0.0004	**	0.0015	0.0004	**
Husband age * husband self-employment	0.0144	0.0008	**	0.0095	0.0006	**	0.0095	0.0006	**	0.0094	0.0006	**	0.0094	0.0006	**
Wife age * wife self-employment	0.0066	0.0011	**	0.0043	0.0007	**	0.0043	0.0007	**	0.0042	0.0007	**	0.0043	0.0007	**
Husband age * black	-0.0093	0.0011	**	-0.0092	0.0010	**	-0.0092	0.0010	**	-0.0092	0.0010	**	-0.0092	0.0010	**
Husband age * Hispanic	-0.0063	0.0013	**	-0.0095	0.0012	**	-0.0083	0.0013	**	-0.0082	0.0013	**	-0.0082	0.0013	**
Husband age * college graduate	0.0049	0.0009	**	0.0048	0.0009	**	0.0049	0.0009	**	0.0051	0.0009	**	0.0050	0.0009	**
Husband age * high school dropout	-0.0076	0.0009	**	-0.0066	0.0008	**	-0.0065	0.0008	**	-0.0068	0.0008	**	-0.0067	0.0008	**
Husband age * number of children ever had	-0.0010	0.0002	**	-0.0007	0.0001	**	-0.0007	0.0001	**	-0.0007	0.0001	**	-0.0007	0.0001	**
Wife high school dropout	-0.5529	0.0619	**	-0.7137	0.0596	**	-0.7189	0.0597	**	-0.7347	0.0599	**	-0.7299	0.0598	**
Wife high school graduate	-0.2576	0.0480	**	-0.3202	0.0451	**	-0.3297	0.0452	**	-0.3404	0.0453	**	-0.3393	0.0453	**
Husband + wife present value earnings/cohort average	0.0946	0.0276	**	0.0822	0.0248	**	0.0764	0.0250	**	0.0932	0.0256	**	0.0824	0.0259	**
Family number of years with earnings above the taxmax	0.0286	0.0025	**	0.0321	0.0021	**	0.0320	0.0021	**	0.0298	0.0022	**	0.0307	0.0022	**
Foreign born							-0.1625	0.0715	*	-0.1630	0.0715	*	-0.1635	0.0715	*
Spouse age difference (husband-wife)							-0.0058	0.0027	*	-0.0067	0.0027	*	-0.0060	0.0027	*
Year 1992 (omitted category)															
Year 1994										0.0702	0.0281	*			
Year 1996										0.0204	0.0317				
Year 1998										-0.0567	0.0347				
Year 2000										-0.0948	0.0396	*			
Year 2002										-0.0672	0.0457				
Year 2004										-0.1179	0.0520	*			
Born before 1931 (omitted category)															
Born 1931-1935													0.0531	0.0618	
Born 1936-1940													-0.0201	0.0643	
Born 1941-1945													-0.1118	0.0745	
Born 1945-1947													-0.1851	0.1037	

Continued

	MINT3	Model 1 Add Additional HRS Waves	Model 2 Add Foreign born and Spouse Age Difference	Model 3 Add Foreign born, Spouse Age Difference, Year Dummies	Model4 Add Foreign born, Spouse Age Difference, Cohort Dummies
Standard error of the individual-specific error term	1.1551	1.0761	1.0755	1.0760	1.0756
Standard error of the random error term 0.80035	0.8003	0.9903	0.9904	0.9896	0.9904
Fraction of variance due to individual-specific error	0.6756	0.5415	0.5412	0.5418	0.5412
Wald Chi-square	3371.37	3378.62	3392.83	3421.31	3405.15
Number of observations	8368	16709	16694	16694	16694
Number of groups	4689	4368	4363	4363	4363
Model overall r-squared	0.3962	0.3478	0.3492	0.3498	0.3502

Source: Urban Institute estimates from Health and Retirement Study.

Notes ** $p<0.01$, * $p<0.05$.

Table 3–6. Random Effects Models for Financial Assets for Singles

	MINT3			Model 1 Add Additional HRS Waves			Model 2 Add Foreign born and Spouse Age Difference			Model 3 Add Foreign born, Spouse Age Difference, Year Dummies			Model4 Add Foreign born, Spouse Age Difference, Cohort Dummies		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	-2.0058	0.0952	**	-1.9917	0.0722	**	-1.9594	0.0735	**	-1.9778	0.0763	**	-1.7909	0.2786	**
Head age * home ownership	0.0122	0.0010	**	0.0077	0.0006	**	0.0076	0.0006	**	0.0077	0.0006	**	0.0076	0.0006	**
Head age * number of children ever had	-0.0012	0.0003	**	-0.0009	0.0002	**	-0.0009	0.0002	**	-0.0008	0.0002	**	-0.0009	0.0002	**
Head age * poor health	-0.0063	0.0010	**	-0.0047	0.0006	**	-0.0046	0.0006	**	-0.0046	0.0006	**	-0.0047	0.0006	**
Head age * have DC pension	0.0146	0.0011	**	0.0056	0.0006	**	0.0057	0.0006	**	0.0057	0.0006	**	0.0057	0.0006	**
Head age * have DB pension	0.0042	0.0012	**	0.0020	0.0007	**	0.0020	0.0007	**	0.0018	0.0007	**	0.0020	0.0007	**
Head age * self-employed	0.0176	0.0018	**	0.0109	0.0010	**	0.0109	0.0010	**	0.0109	0.0010	**	0.0109	0.0010	**
Head age * widowed	0.0040	0.0012	**	0.0030	0.0008	**	0.0029	0.0008	**	0.0030	0.0008	**	0.0028	0.0008	**
Total years ever married	0.0164	0.0029	**	0.0183	0.0020	**	0.0181	0.0020	**	0.0181	0.0020	**	0.0178	0.0020	**
Head age * black	-0.0115	0.0012	**	-0.0140	0.0009	**	-0.0142	0.0010	**	-0.0141	0.0010	**	-0.0142	0.0010	**
Head age * college graduate	0.0137	0.0016	**	0.0145	0.0013	**	0.0146	0.0013	**	0.0147	0.0013	**	0.0146	0.0013	**
Head age * high school dropout	-0.0124	0.0013	**	-0.0136	0.0010	**	-0.0133	0.0010	**	-0.0133	0.0010	**	-0.0134	0.0010	**
Head age * male	0.0029	0.0013	*	-0.0007	0.0010		-0.0007	0.0010		-0.0007	0.0010		-0.0008	0.0010	
Present value of earnings/cohort average	0.4548	0.0598	**	0.6779	0.0478	**	0.6665	0.0480	**	0.6683	0.0480	**	0.6658	0.0480	**
Foreign born							-0.2332	0.0860	**	-0.2326	0.0861	**	-0.2335	0.0860	**
Year 1992 (omitted category)															
Year 1994										0.0681	0.0407				
Year 1996										-0.0097	0.0417				
Year 1998										-0.0058	0.0417				
Year 2000										-0.0392	0.0439				
Year 2002										-0.0098	0.0454				
Year 2004										-0.0048	0.0485				
Born before 1931 (omitted category)															
Born 1931-1935													-0.1005	0.2687	
Born 1936-1940													-0.1659	0.2681	
Born 1941-1945													-0.1742	0.2706	
Born 1945-1947													-0.2266	0.2832	
Standard error of the individual-specific error term				1.1793			1.1793			1.1808			1.1799		
Standard error of the random error term				1.0401			1.0406			1.0403			1.0406		
Fraction of variance due to individual-specific error				0.5625			0.5622			0.5630			0.5625		
Wald Chi-square	2303.97			2856.37			2846.90			2848.46			2846.95		
Number of observations	3923			10426			10400			10400			10400		
Number of groups	2310			3138			3132			3132			3132		
Model overall r-squared	0.4805			0.4332			0.4326			0.4328			0.4328		

Source: Urban Institute estimates from Health and Retirement Study.
Notes ** $p<0.01$, * $p<0.05$

Table 3–7. Home Ownership rates by Birth Year and Age

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							0.489	0.543	0.539	0.520	0.483	0.503
40						0.593	0.630	0.641	0.640	0.609	0.576	0.592
45					0.662	0.679	0.701	0.706	0.688	0.683	0.656	0.668
50				0.701	0.732	0.724	0.735	0.732	0.711	0.723	0.702	0.711
55			0.736	0.757	0.763	0.762	0.766	0.756	0.742	0.737	0.721	0.735
60		0.752	0.773	0.790	0.798	0.798	0.796	0.792	0.776	0.758	0.756	0.768
65	0.769	0.762	0.781	0.794	0.802	0.803	0.800	0.797	0.783	0.764	0.758	0.772
70	0.771	0.770	0.790	0.802	0.808	0.808	0.802	0.799	0.784	0.769	0.766	0.779
75	0.778	0.784	0.804	0.811	0.817	0.816	0.812	0.804	0.787	0.781	0.777	0.790
80	0.809	0.797	0.820	0.820	0.831	0.825	0.821	0.812	0.801	0.788	0.795	0.805
85	0.826	0.814	0.823	0.837	0.846	0.842	0.838	0.824	0.815	0.794	0.807	0.819
90	0.858	0.833	0.823	0.839	0.863	0.861	0.855	0.835	0.822	0.790	0.802	0.825

Source: Urban Institute tabulations of MINT5.

born between 1926 and 1955 and then fall slightly for later cohorts of individuals born after 1955. For example, at age 65, about 77 percent of family heads born between 1926 and 1930 owned a home. This share is projected to increase to about 80 percent for similar heads born between 1951 and 1955 and then decrease slightly to 76 percent for heads born between 1971 and 1975.

2. Home Equity

Table 3–8 shows median projected family home equity relative to average earnings by age and birth year. Within cohorts, relative median home equity rises with age, but levels off at about age 65. This reflects the natural increase in home equity as homeowners pay down their mortgages as they near retirement. Relative home equity is lower for individuals born in later cohorts compared to earlier cohorts and the gap widens at older ages. For example, projected median family home equity at age 50 for family heads born between 1941 and 1945 is about 1.19 times the average wage. This falls to 0.71 for family heads born between 1966 and 1970. At age 60, MINT5 projects median home equity for family heads born between 1941 and 1945 to be about 1.81 times the average wage. For 60-year-old heads born between 1966 and 1970, projected median home equity is only slightly above (1.007 times) the average wage.

MINT maintains the real value of home equity after retirement. It does not allow for additions in home equity after retirement that could occur through additional mortgage principal repayments or market value increases or for additional decreases by people who do not maintain their homes. MINT assumes a 1.1 percent annual real wage growth (2006 OCACT economic assumptions). Because wages are assumed to grow faster than prices, projected wage-adjusted home equity generally falls after age 60. Any increase in average relative home equity after retirement is a result of differential mortality; i.e, relatively higher mortality among those in lower income and education groups who have less home equity on average.

We see similar trends in home equity at higher percentiles as at the median value. Table 3–9 shows the 70th percentile, Table 3–10 the 80th percentile, and Table 3–11 the 90th percentile of projected home equity relative to average wages. As with the median value, home equity at the higher percentiles also rise with age with a cohort group, but levels off at about age 65. Relative home equity is lower for individuals born in later than earlier cohorts and the gap widens at older ages.

MINT projects home equity to become less evenly distributed over time. Table 3–12 shows the distribution of home equity relative to average wages at age 65 by birth year. Across successive cohorts, relative home equity has been declining at the low end of the distribution and either increasing or declining only slightly at the high end. For example, the 30th percentile family home equity relative to average wages was about 0.74 for 65-year-olds born between 1926 and 1930, but is projected to fall to only about 0.33 for 65-year olds born between 1971 and 1975. The 95th percentile family home equity relative to average wages is about 9.5 for 65-year-olds born between 1926 and 1930 and

Table 3–8. Median Family Home Equity Relative to Average Earnings by Age and Birth Year

	Birth Year											
Age	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
35							0	0.169	0.173	0.120	0	0.092
40						0.420	0.454	0.426	0.394	0.391	0.347	0.405
45					0.836	0.741	0.637	0.611	0.562	0.541	0.538	0.638
50				1.188	1.218	0.939	0.823	0.782	0.712	0.764	0.764	0.899
55			1.451	1.530	1.407	1.098	0.969	0.910	0.856	0.831	0.875	1.103
60		1.851	1.880	1.806	1.628	1.333	1.171	1.106	1.007	0.994	1.063	1.384
65	2.032	1.906	1.884	1.787	1.641	1.340	1.160	1.103	1.015	1.010	1.062	1.449
70	1.950	1.887	1.840	1.745	1.645	1.302	1.116	1.065	0.963	0.924	1.024	1.406
75	1.931	1.922	1.808	1.731	1.656	1.291	1.104	1.047	0.924	0.954	1.024	1.399
80	2.014	1.898	1.862	1.732	1.683	1.329	1.098	1.019	0.920	0.944	1.046	1.413
85	2.014	1.865	1.824	1.766	1.712	1.393	1.114	1.044	0.907	0.975	1.168	1.435
90	2.073	1.932	1.791	1.818	1.802	1.461	1.136	1.075	0.867	0.955	1.143	1.459

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.
Notes: Median equity is calculated including non-homeowners. Changes in median home equity include both the effect of equity changes and home ownership. Zero median home equity indicates that less than half of families at that age are home owners.

Table 3–9. Seventieth Percentile Family Home Equity Relative to Average Earnings by Age and Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							0.710	0.726	0.708	0.669	0.866	0.736
40						1.374	1.204	1.090	1.000	1.065	1.158	1.148
45					2.039	1.738	1.440	1.364	1.243	1.296	1.335	1.494
50				2.744	2.619	2.137	1.799	1.644	1.502	1.594	1.724	1.971
55			3.112	3.120	2.927	2.402	2.032	1.857	1.811	1.736	1.841	2.315
60		3.341	3.447	3.516	3.284	2.783	2.395	2.188	2.032	2.138	2.285	2.741
65	3.633	3.282	3.529	3.490	3.370	2.792	2.386	2.215	1.987	2.168	2.313	2.833
70	3.345	3.237	3.385	3.344	3.320	2.727	2.313	2.162	1.989	2.119	2.209	2.741
75	3.241	3.207	3.270	3.231	3.253	2.702	2.273	2.111	1.946	2.068	2.243	2.686
80	3.223	3.166	3.211	3.168	3.187	2.687	2.243	2.083	1.921	2.041	2.210	2.649
85	3.145	3.128	3.108	3.188	3.142	2.709	2.274	2.076	1.869	2.079	2.376	2.645
90	3.165	3.196	3.158	3.237	3.273	2.858	2.308	2.153	1.804	2.101	2.403	2.696

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

Table 3–10. Eightieth Percentile Family Home Equity Relative to Average Earnings by Age and Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							1.266	1.231	1.186	1.065	1.351	1.220
40						2.096	1.860	1.656	1.545	1.565	1.790	1.752
45					3.110	2.625	2.206	2.014	1.872	2.000	2.123	2.279
50				4.037	3.810	3.278	2.689	2.486	2.321	2.419	2.712	2.969
55			4.320	4.460	4.233	3.644	3.028	2.752	2.714	2.674	2.919	3.416
60		4.626	4.678	4.888	4.678	4.177	3.539	3.301	3.011	3.235	3.523	3.966
65	5.125	4.476	4.777	4.890	4.789	4.213	3.614	3.349	3.030	3.239	3.599	4.100
70	4.574	4.434	4.596	4.681	4.667	4.081	3.491	3.260	2.939	3.099	3.504	3.939
75	4.369	4.288	4.423	4.534	4.585	4.044	3.407	3.195	2.851	3.150	3.496	3.849
80	4.323	4.213	4.387	4.395	4.485	3.986	3.403	3.178	2.742	3.145	3.559	3.801
85	4.315	4.163	4.245	4.448	4.455	4.034	3.447	3.197	2.723	3.180	3.523	3.794
90	4.221	4.184	4.263	4.372	4.659	4.217	3.498	3.286	2.577	3.129	3.342	3.795

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

Table 3–11. Ninetieth Percentile Family Home Equity Relative to Average Earnings by Age and Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							2.329	2.206	2.111	1.930	2.564	2.228
40						3.599	3.243	2.812	2.737	2.751	3.026	3.028
45					5.199	4.504	3.846	3.492	3.364	3.254	3.632	3.899
50				6.312	6.237	5.470	4.671	4.274	4.086	4.319	4.588	4.994
55			6.507	6.788	6.853	6.199	5.269	4.781	4.534	4.810	5.227	5.663
60		6.971	6.973	7.457	7.688	7.167	6.210	5.634	5.219	5.544	6.350	6.521
65	7.561	6.720	7.095	7.612	8.026	7.196	6.314	5.810	5.293	5.598	6.527	6.705
70	6.571	6.483	6.902	7.249	7.765	7.026	6.056	5.611	5.166	5.654	6.250	6.430
75	6.341	6.230	6.515	6.918	7.488	6.824	5.959	5.436	4.898	5.531	6.173	6.210
80	6.036	6.056	6.319	6.766	7.281	6.920	5.982	5.438	4.671	5.489	6.188	6.104
85	6.037	6.053	6.271	6.638	7.186	6.798	6.006	5.347	4.946	5.294	6.261	6.076
90	5.740	5.883	6.223	6.515	7.277	7.127	6.123	5.452	4.667	5.563	5.753	6.030

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

Table 3–12. Distribution of Home Equity Relative to Average Earnings and Home Ownership Rate at Age 65 by Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
30th Percentile	0.735	0.558	0.598	0.592	0.615	0.503	0.439	0.416	0.372	0.327	0.342	0.500
50th Percentile	2.032	1.906	1.884	1.787	1.641	1.340	1.160	1.103	1.015	1.010	1.062	1.449
60th Percentile	2.732	2.514	2.593	2.526	2.400	1.953	1.660	1.566	1.389	1.502	1.587	2.038
70th Percentile	3.633	3.282	3.529	3.490	3.370	2.792	2.386	2.215	1.987	2.168	2.313	2.833
80th Percentile	5.125	4.476	4.777	4.890	4.789	4.213	3.614	3.349	3.030	3.239	3.599	4.100
90th Percentile	7.561	6.720	7.095	7.612	8.026	7.196	6.314	5.810	5.293	5.598	6.527	6.705
95th Percentile	9.502	8.919	9.602	10.507	11.893	10.818	9.916	9.006	8.702	8.908	10.208	9.816
Mean	2.914	2.685	2.892	3.014	3.218	2.877	2.635	2.453	2.267	2.338	2.602	2.718
95th/50th	4.68	4.68	5.10	5.88	7.25	8.07	8.55	8.17	8.57	8.82	9.61	6.77
95th/mean	3.26	3.32	3.32	3.49	3.70	3.76	3.76	3.67	3.84	3.81	3.92	3.61
Own Home	0.769	0.762	0.781	0.794	0.802	0.803	0.800	0.797	0.783	0.764	0.758	0.772

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

increases to 11.9 for 65-year olds born between 1946 and 1950 before dropping to 8.9 for 65-year-olds born between 1971 to 1975. The ratio of the 95th to 50th percentile of home equity for 65-year-old family head born between 1926 and 1930 is 4.68, but it is 8.82 for similar heads born between 1971 and 1975.

The projections in home equity are the result of a number of salient trends including the following:

- Declining wage-adjusted earnings of men in later cohorts compared with earlier cohorts.
- Declining family size, as women in later cohorts had fewer children than women in earlier cohorts.
- A rise in the share of families in later cohorts that are black and Hispanic compared with earlier cohorts because these minority groups typically have lower home equity.
- A rapid increase in housing values relative to wage growth in the 1960s and 1970s, which raised the net housing wealth for earlier cohorts, but not later cohorts.
- An increasing use of home equity loans over time that effectively exchanges home equity for other consumption. Home equity loans have become more common since the Tax Reform Act of 1986 eliminated deductibility of consumer interest while home mortgage interest remained deductible. Some of the decline in home equity for later cohorts compared to earlier cohorts reflects an increase in the use of home assets to fund other consumption (such as a car purchase or education).

3. Nonpension Financial Assets

Table 3–13 shows MINT5's projected median family non-pension financial assets relative to average earnings by age and birth year. For a given cohort group, median relative non-pension assets rise with age through about age 65, but then fall through about age 75 as individuals spend down their taxable assets. Median assets increase again after age 75, reflecting a shift in assets from tax deferred accounts to taxable accounts and higher mortality rates among less affluent individuals, leaving a wealthier surviving population.

At most ages, relative median non-pension assets fall for later cohorts of family heads born between 1926 and 1940. It then rises slightly for family heads born between 1936 and 1940, before declining again for family heads born after 1940. For example, at age 65, projected median non-pension assets is about 1.77 times the average wage for family heads born between 1926 and 1930 and then falls to 1.12 times the average wage for family heads born between 1936 and 1940. After rising to 1.36 times the average wage for family heads born between 1946 and 1950, it then falls again to 1.09 times the average wage for family heads born between 1966 and 1970.

Table 3–14 shows MINT5 projected family non-pension financial assets at the twentieth percentile, Table 3–15 shows the eightieth percentile, and Table 3–16 shows the 95th percentile. The age pattern in the growth of assets in these percentiles is similar

Table 3–13. Fiftieth Percentile Family Nonpension Financial Assets Relative to Average Earnings by Age and Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							0.392	0.434	0.417	0.339	0.259	0.368
40						0.606	0.648	0.685	0.719	0.579	0.577	0.636
45					0.813	0.809	0.909	0.935	0.917	0.875	0.784	0.863
50				0.994	1.055	1.041	1.121	1.115	1.055	1.074	0.958	1.052
55			1.006	1.085	1.257	1.242	1.29	1.292	1.179	1.241	1.147	1.193
60		1.608	1.203	1.303	1.514	1.420	1.443	1.438	1.345	1.408	1.326	1.401
65	1.768	1.456	1.116	1.137	1.355	1.232	1.234	1.252	1.089	1.175	1.062	1.262
70	1.529	1.283	0.968	0.939	1.088	0.988	1.004	0.999	0.902	0.886	0.786	1.034
75	1.516	1.371	0.989	0.950	1.088	1.009	0.988	0.966	0.847	0.867	0.781	1.034
80	1.733	1.443	1.121	1.072	1.193	1.094	1.064	1.037	0.875	0.949	0.891	1.134
85	1.762	1.482	1.216	1.248	1.408	1.268	1.152	1.155	0.988	1.070	1.097	1.259
90	1.842	1.702	1.468	1.498	1.664	1.487	1.38	1.378	1.201	1.373	1.705	1.518

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

Table 3–14. Twentieth Percentile Family Nonpension Financial Assets Relative to Average Earnings by Age and Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							0	0.013	0.028	-0.016	-0.087	-0.012
40						0.031	0.051	0.087	0.096	0.047	0.034	0.058
45					0.072	0.087	0.130	0.159	0.152	0.135	0.098	0.119
50				0.105	0.121	0.151	0.182	0.204	0.187	0.180	0.154	0.160
55			0.061	0.077	0.120	0.180	0.205	0.232	0.210	0.199	0.157	0.160
60		0.071	0.065	0.098	0.152	0.196	0.224	0.255	0.221	0.195	0.188	0.167
65	0.079	0.074	0.049	0.050	0.060	0.075	0.114	0.158	0.103	0.081	0.072	0.083
70	0.083	0.063	0.040	0.034	0.038	0.047	0.049	0.073	0.044	0.036	0.033	0.049
75	0.082	0.065	0.045	0.043	0.047	0.066	0.092	0.099	0.071	0.052	0.034	0.063
80	0.133	0.069	0.052	0.049	0.051	0.098	0.116	0.124	0.092	0.070	0.066	0.084
85	0.195	0.117	0.095	0.104	0.132	0.151	0.161	0.160	0.155	0.134	0.109	0.138
90	0.289	0.193	0.135	0.181	0.226	0.234	0.229	0.223	0.247	0.226	0.248	0.221

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

Table 3–15. Eightieth Percentile Family Nonpension Financial Assets Relative to Average Earnings by Age and Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							2.107	2.091	2.021	1.590	1.705	1.903
40						3.350	3.254	3.183	2.851	2.956	3.198	3.132
45					4.381	4.410	4.350	4.113	3.949	4.146	4.388	4.248
50				5.814	6.369	5.838	5.638	5.353	4.844	5.155	5.481	5.562
55			6.347	6.806	7.064	6.821	6.568	6.154	5.455	6.090	5.822	6.347
60		8.200	7.578	7.972	8.078	7.591	7.364	6.834	6.238	6.403	6.392	7.265
65	9.984	8.417	7.401	7.831	8.235	7.401	7.160	6.641	5.889	6.228	6.272	7.405
70	8.699	7.717	6.762	6.946	7.106	6.665	6.113	5.781	5.075	5.366	5.650	6.535
75	7.838	7.918	6.506	6.660	6.947	6.367	5.862	5.576	4.931	5.142	5.151	6.264
80	8.034	7.559	6.961	6.571	7.102	6.498	6.088	5.649	4.616	5.481	5.718	6.389
85	7.889	7.437	7.152	7.033	7.535	6.935	6.364	5.981	5.258	5.745	6.211	6.685
90	7.549	7.936	7.873	7.543	7.977	7.906	7.144	7.126	5.858	7.859	8.299	7.552

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

Table 3–16. Ninety-Fifth Percentile Family Nonpension Financial Assets Relative to Average Earnings by Age and Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
Age												
35							10.500	8.282	7.789	7.896	7.429	8.379
40						16.623	15.479	14.992	13.241	13.463	15.051	14.808
45					24.340	22.937	21.067	20.129	16.765	20.537	21.537	21.045
50				29.880	32.049	32.352	29.008	26.150	24.101	27.528	28.830	28.737
55			30.862	31.420	33.478	37.950	32.427	28.999	29.236	32.405	34.963	32.416
60		33.863	34.776	35.111	38.871	43.352	37.453	34.840	30.126	35.667	39.925	36.398
65	47.271	35.691	33.208	35.912	41.457	44.496	38.331	35.059	30.749	38.554	40.850	38.325
70	32.839	34.867	31.282	34.432	38.212	43.355	35.101	32.990	27.654	36.154	37.290	34.925
75	31.239	36.043	30.581	34.312	36.557	42.375	33.786	32.401	26.619	32.003	36.952	33.897
80	37.673	35.505	31.872	34.254	36.839	42.316	34.987	34.032	25.827	32.574	36.428	34.755
85	37.420	40.782	33.921	38.213	38.665	44.463	35.248	33.978	32.566	28.988	33.575	36.165
90	31.595	41.756	37.195	31.975	39.770	43.750	39.530	35.580	31.398	30.735	35.171	36.223

Source: Urban Institute tabulations of MINT5. Age and birth year are of the husband for married couples and the individual for singles.

to the pattern of median assets. Relative non-pension financial assets rise with age until about age 65 and then fall through age 75 as families spend from their taxable assets. Financial assets then rise again after age 75 as families shift assets from their tax deferred accounts to their taxable accounts and differential mortality leaves a larger share of population at older ages consisting of wealthier individuals. The relative dip in non-pension assets between ages 65 and 75 is smaller at the top of the distribution than at the middle and bottom of the distribution because the share of financial wealth in retirement accounts is smaller for high asset holders. This lower share of tax-deferred assets of the wealthier group largly reflects statutory caps that limit the amounts individuals can contribute to tax-deferred retirement accounts.

Family non-pension wealth is very unevenly distributed and MINT projects it to become less evenly distributed over time. Table 3–17 shows the distribution of non-pension assets relative to average wages at age 65 by birth year. About ten to fifteen percent of 65-year-olds have little or no non-pension assets. MINT projects this share to remain fairly constant over time. Relative median non-pension assets fall for 65-year-olds born after 1926. The largest decline in median non-pension assets occurred between the 1926-30 and 1936-40 cohorts. Relative median non-pension assets then rebounded slightly for 65-year-olds born in 1946-50, before falling for later cohorts. Some of the large decline between the 1926-30 and 1936-40 cohorts could be the result of individuals shifting taxable assets to tax deferred assets as 401k plans became available. MINT projects the ratio of non-pension wealth of the 95th to the 50th percentile at age 65 will rise between the 1926-30 and 1951-55 cohorts from 26.7 to 36.1, drop to 28.0 for heads born between 1961 and 1965, and then rise to 38.5 for heads born after 1975.

IV. COMPARISON OF MINT5 TO SCF AND HRS

Comparisons with the HRS and Survey of Consumer Finance (SCF) reveal that the updated MINT projections do not capture the dramatic increase in home equity that occurred after 1998.

There are a number of factors leading to this result:

- Starting home ownership and home equity on the 1996 SIPP panel are lower than home ownership and home equity in 1996 in both the SCF and the HRS. While MINT adjusts the starting retirement account and financial assets on the 1996 SIPP to align with the SCF, no adjustments were done for home ownership or home equity.

The updated HRS equations only affect home equity from age 50 to retirement. These projections take as the starting value home equity at age 49, as projected using the PSID equations. These PSID equations were estimated using data only through 1994. They have not been updated to reflect the increase in home values between 1995 and 2004.

Table 3–17. Distribution of Family Nonpension Financial Assets Relative to Average Earnings at Age 65 by Birth Year

	Birth Year											
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976+	All
5th Percentile	-0.019	-0.020	-0.019	-0.018	-0.016	-0.010	-0.007	0.000	0.000	-0.005	-0.006	-0.011
10th Percentile	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.001
20th Percentile	0.079	0.074	0.049	0.050	0.060	0.075	0.114	0.158	0.103	0.081	0.072	0.083
30th Percentile	0.346	0.295	0.233	0.237	0.307	0.342	0.357	0.400	0.322	0.337	0.294	0.315
40th Percentile	0.831	0.711	0.530	0.592	0.705	0.673	0.715	0.726	0.621	0.666	0.620	0.672
50th Percentile	1.768	1.456	1.116	1.137	1.355	1.232	1.234	1.252	1.089	1.175	1.062	1.262
60th Percentile	3.244	2.724	2.222	2.212	2.362	2.098	2.129	2.091	1.824	1.928	1.796	2.239
70th Percentile	5.290	4.716	3.943	4.079	4.213	3.826	3.652	3.543	3.188	3.577	3.209	3.930
80th Percentile	9.984	8.417	7.401	7.831	8.235	7.401	7.160	6.641	5.889	6.228	6.272	7.405
90th Percentile	19.019	17.997	16.092	18.640	20.791	19.378	17.871	16.281	15.485	16.578	18.134	17.842
95th Percentile	47.271	35.691	33.208	35.912	41.457	44.496	38.331	35.059	30.749	38.554	40.850	38.325
98th Percentile	81.815	77.832	80.595	99.107	112.067	112.051	107.463	81.384	72.344	91.658	97.277	92.145
Mean	8.805	8.587	7.639	10.312	12.560	13.919	12.901	10.259	13.053	9.658	11.023	10.792
95th/50th	26.74	24.51	29.76	31.58	30.60	36.12	31.06	28.00	28.24	32.81	38.47	30.37
95th/mean	5.37	4.16	4.35	3.48	3.30	3.20	2.97	3.42	2.36	3.99	3.71	3.55

Source: Urban Institute tabulations of MINT5.

- MINT maintains the real value of home equity after retirement. It does not allow for increasing home equity after retirement that could occur through additional mortgage payments or market value increases. Comparisons with the HRS show that this is not a good assumption. Both the HRS and SCF show that home equity did increase after the average retirement age.

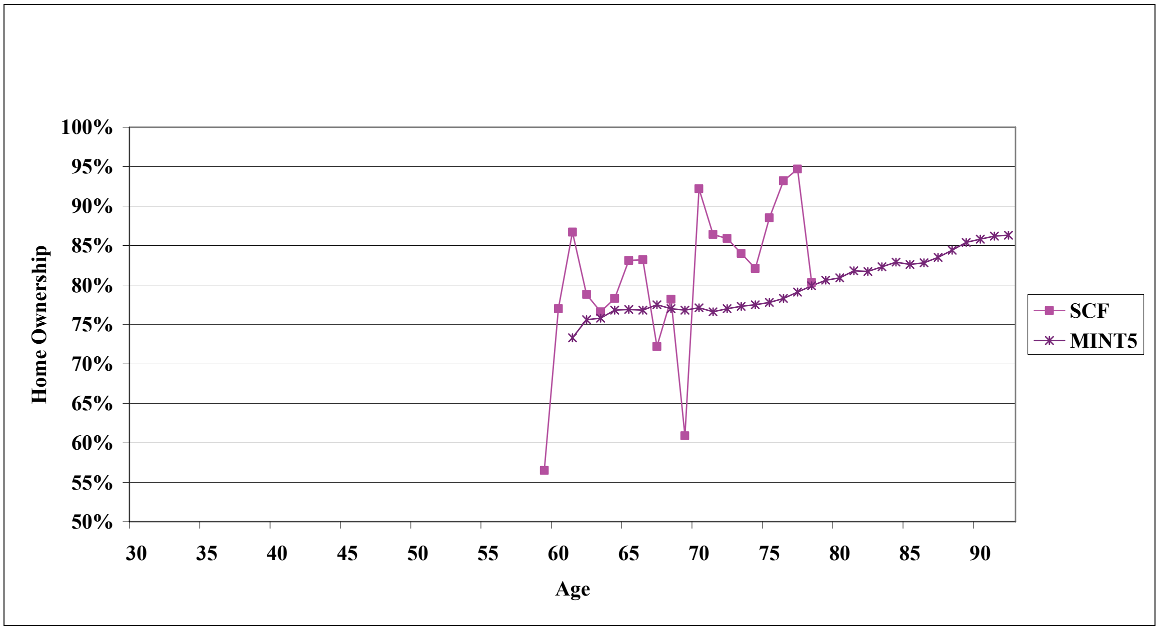
1. Home Ownership

Figures 3–3 to 3–11 show family home ownership rates by age and cohort calculated from the SCF, HRS, and MINT5. The MINT5 projections include the 1990-1993 and 1996 SIPP panels and imputed immigrants. The SCF tabulations include the 1992, 1995, 1998, 2001, and 2004 panels. Despite pooling SCF panels, small sample size causes the SCF distributions to be very noisy by single year of age. What is labeled as HRS in these figures includes HRS respondents born between 1931 and 1941 for seven waves (1992 – 2004) plus war baby respondents born between 1942 and 1947 for four waves (1998-2004). All figures are based on the age of the husband in married couples and the age of the respondent for unmarried individuals.

MINT home ownership rates closely track historic rates from the SCF and the HRS. MINT home ownership rates are slightly lower than SCF rates at younger ages. The SCF samples households, while the SIPP samples individuals. Couples are combined to generate family-level data in MINT. Because younger individuals are more likely to co-reside compared to older individuals, the SCF misses home ownership status of non-homeowning, co-residing individuals.

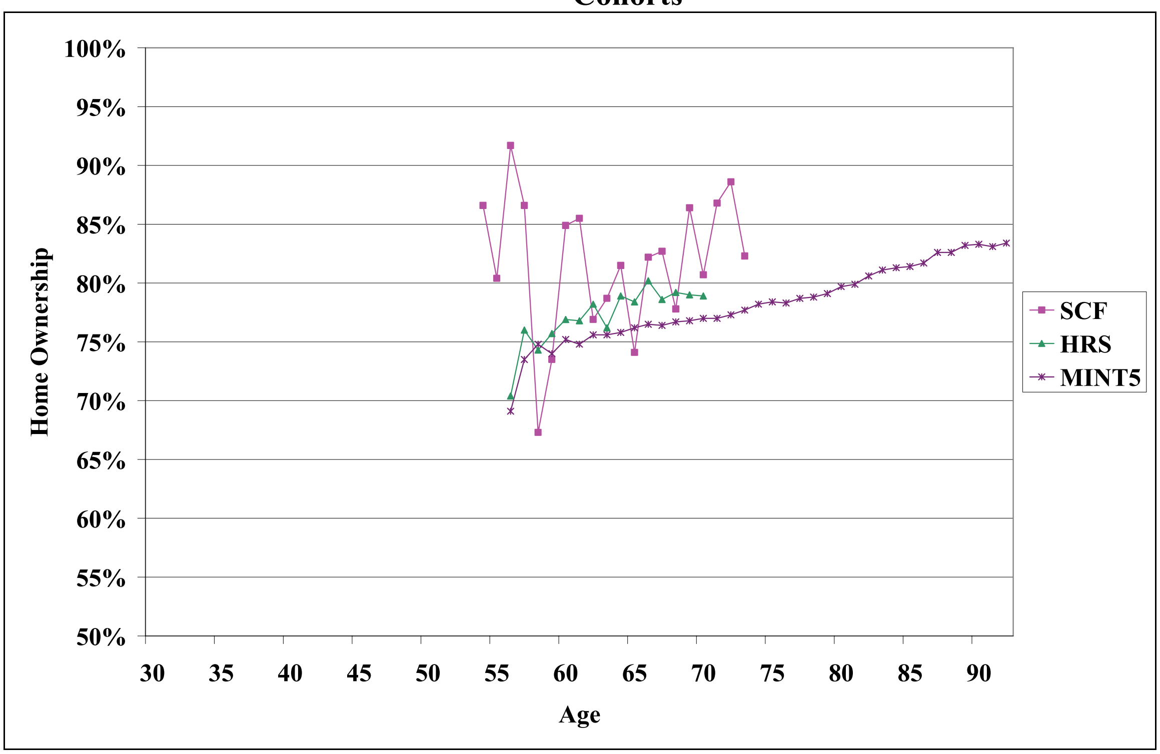
Some of the higher home ownership rates on SCF are a natural result of the SCF sample design compared to MINT. But some of the higher home ownership rates on the SCF are due to lower starting home ownership rates on the 1996 SIPP panel than in the 1990-1993 SIPP panels. Figure 3–12 shows home ownership rates for the family heads born between 1951 and 1955 for the SCF, 1990-1993 SIPP panels, and the 1996 SIPP panel. The left side of the line segment generally reflects SIPP reported home ownership values. The 1990 SIPP panel begins with home ownership in 1991 (from topical module 4). The 1996 panel begins with home ownership in 1996 (topical module 3). While the age slope of the 1990-1993 panels is virtually identical to the age slope for the 1996 panel, the 1996 panel starts at a lower value. At every age, the 1996 SIPP panel generates lower home ownership compared with both the 1990-1993 panels and the SCF. The lower ownership starting values for the 1996 SIPP panels compared to the 1990-1993 SIPP panels exists in all MINT cohorts.

Figure 3–3. Family Home Ownership by Age and Data Source: 1926-1930 Cohorts



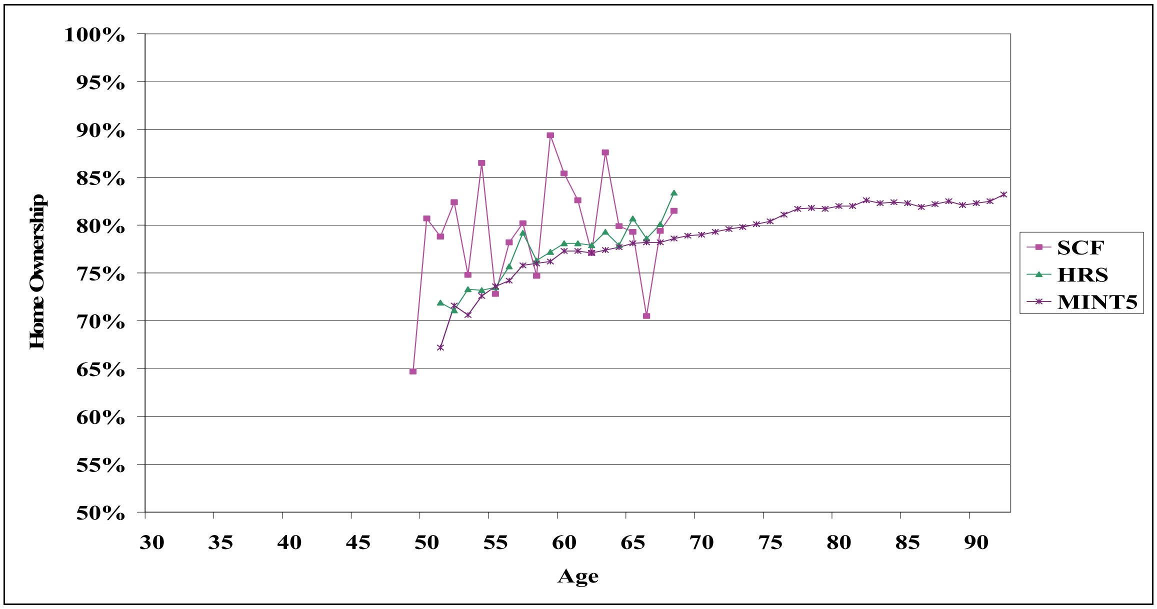
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–4. Family Home Ownership by Age and Data Source: 1931-1935 Cohorts



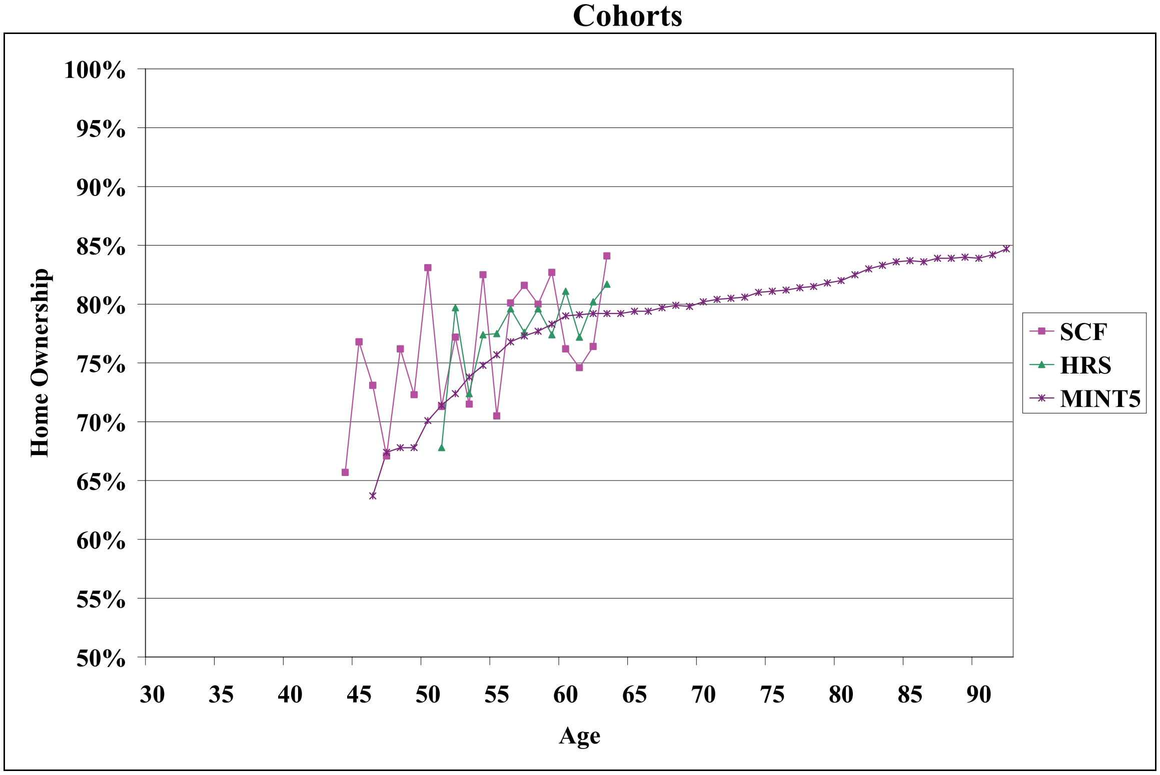
Source: Urban Institute tabulations of MINT5,1992–2004 SCF, and 1992–2004 HRS.

Figure 3–5. Family Home Ownership by Age and Data Source: 1936-1940 Cohorts



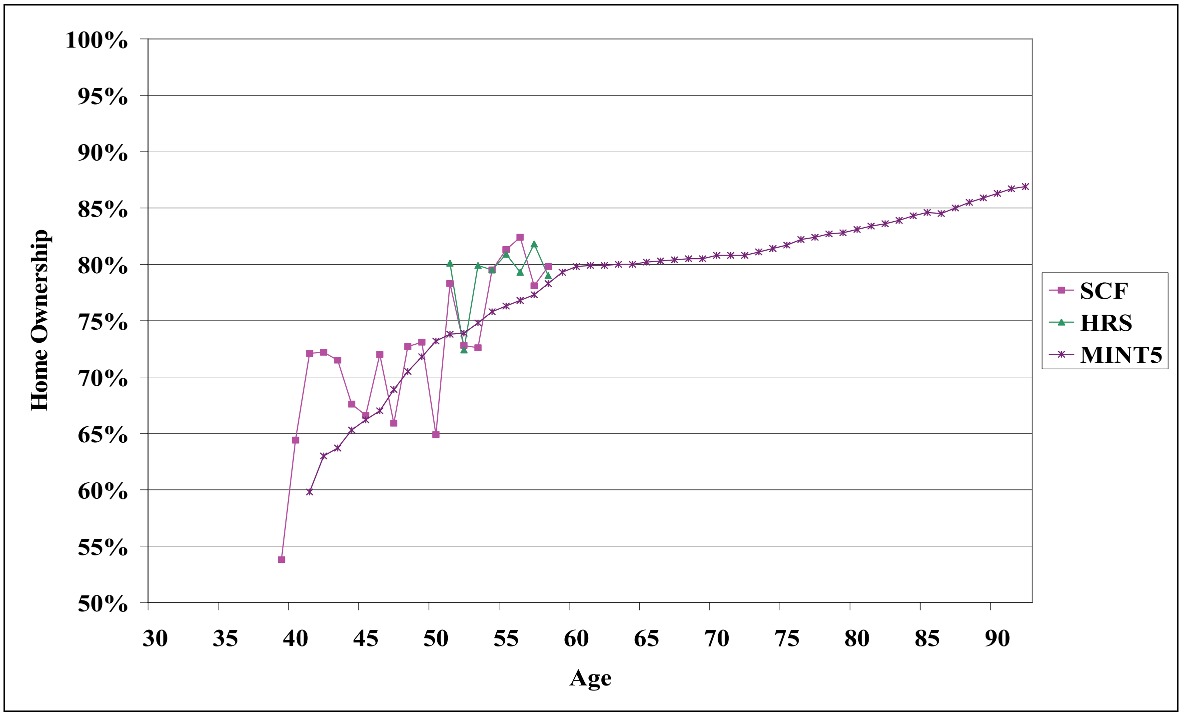
Source: Urban Institute tabulations of MINT5, 1992–2004 SCF, and 1992–2004 HRS.

Figure 3–6. Family Home Ownership by Age and Data Source: 1941-1945 Cohorts



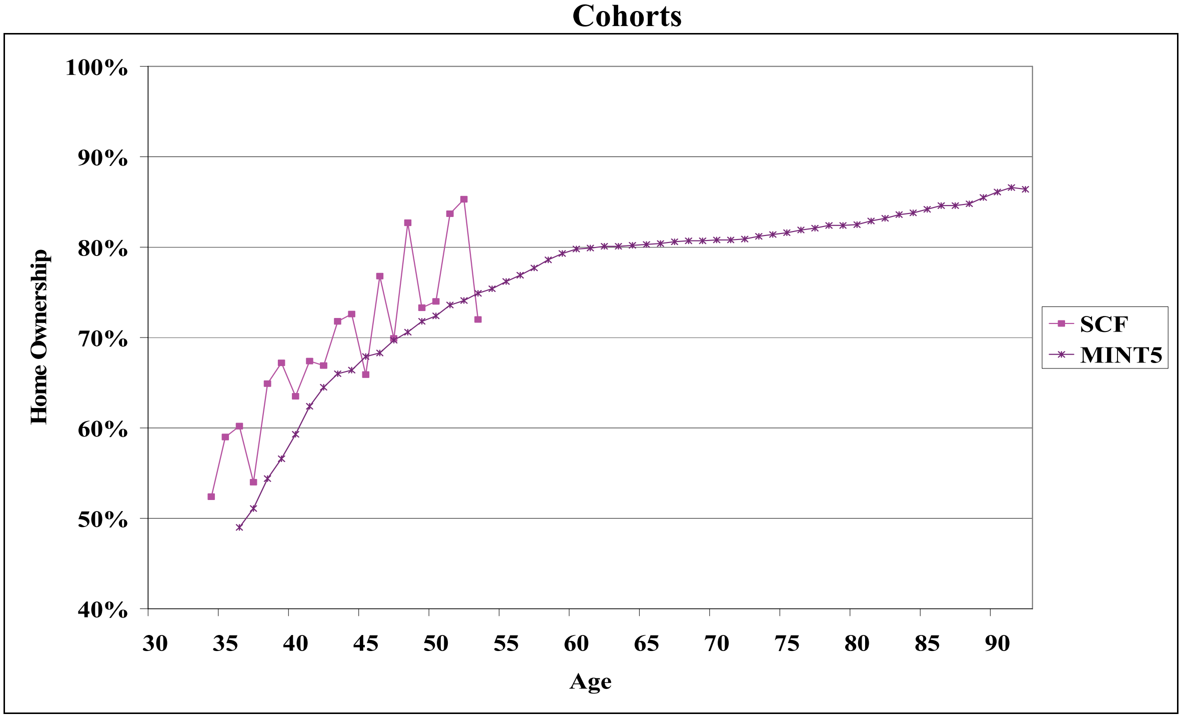
Source: Urban Institute tabulations of MINT5, 1992–2004 SCF, and 1992–2004 HRS.

Figure 3–7. Family Home Ownership by Age and Data Source: 1946-1950 Cohorts



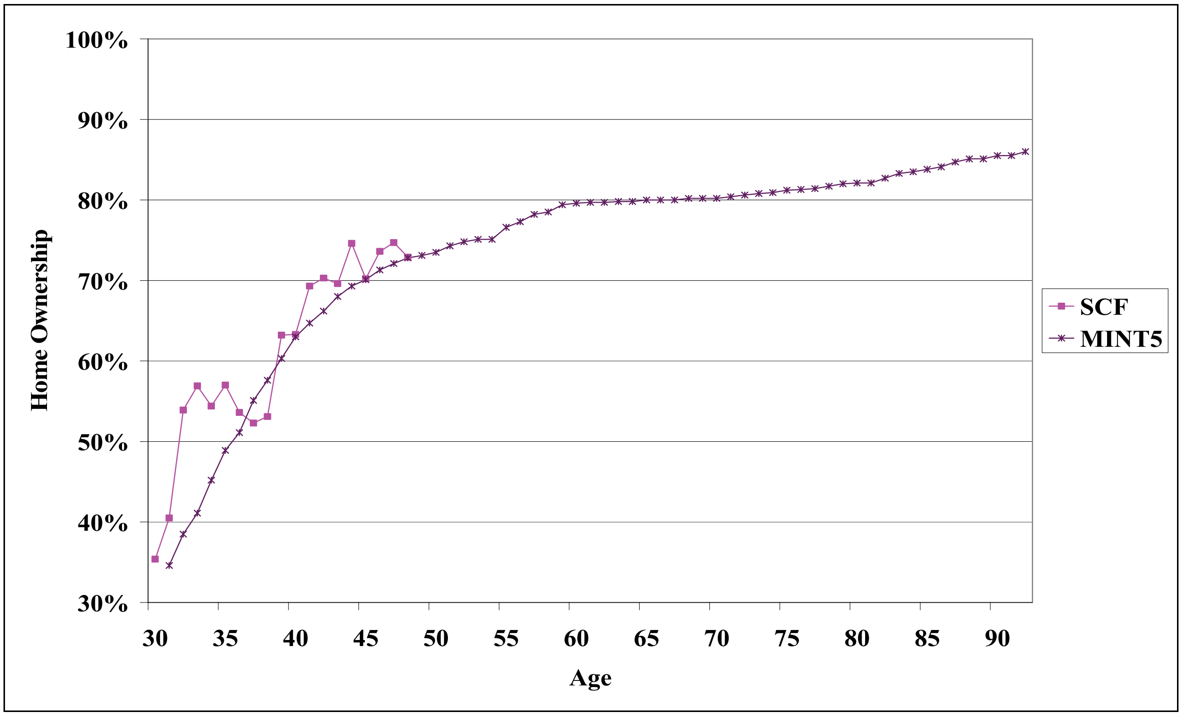
Source: Urban Institute tabulations of MINT5, 1992–2004 SCF, and 1992–2004 HRS.

Figure 3–8. Family Home Ownership by Age and Data Source: 1951-1955 Cohorts



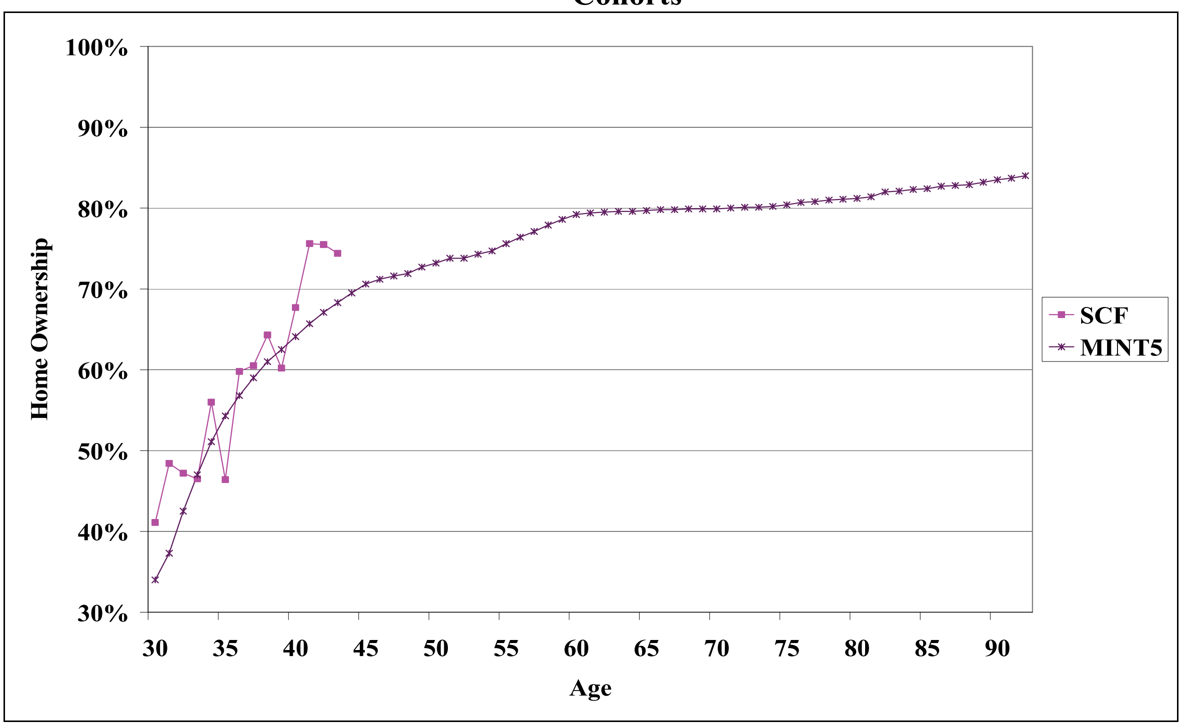
Source: Urban Institute tabulations of MINT5 and 1992–2004 SCF.

Figure 3–9. Family Home Ownership by Age and Data Source: 1956-1960 Cohorts



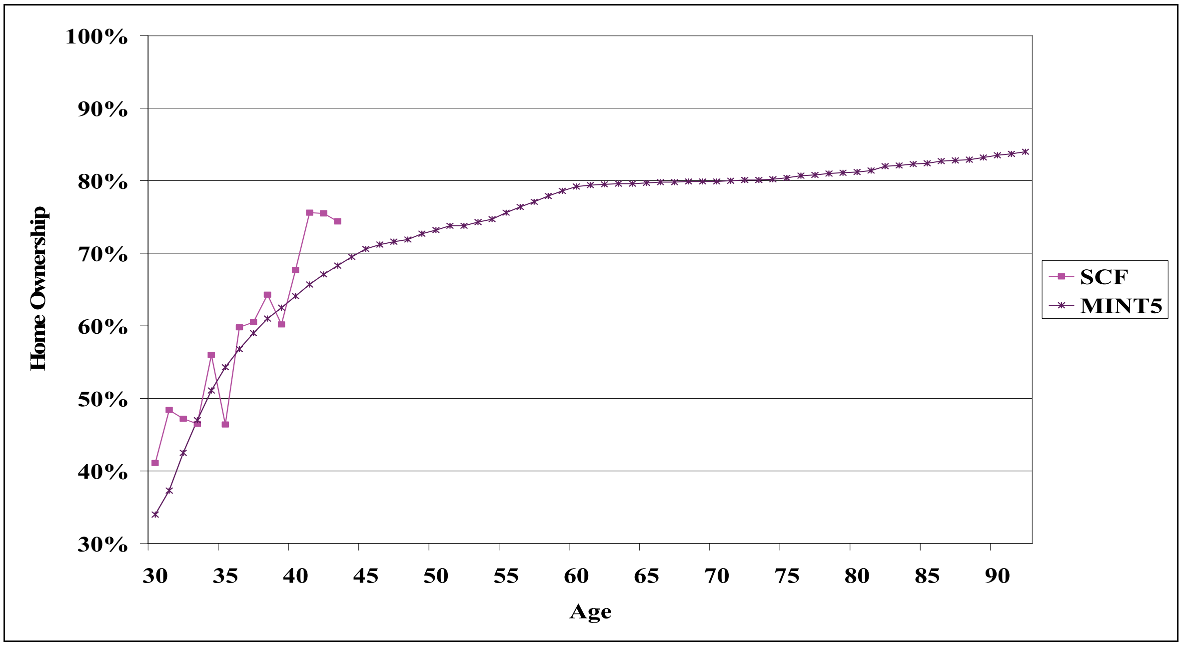
Source: Urban Institute tabulations of MINT5 and 1992–2004 SCF.

Figure 3–10. Family Home Ownership by Age and Data Source: 1961-1965 Cohorts



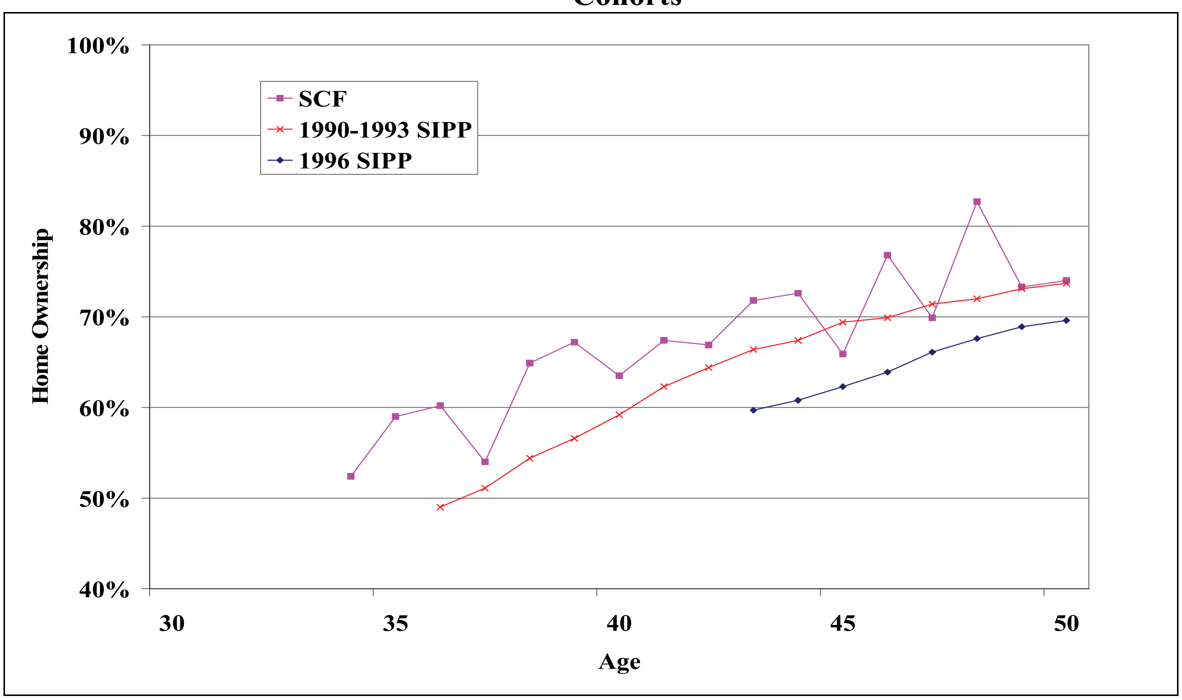
Source: Urban Institute tabulations of MINT5 and 1992–2004 SCF.

Figure 3–11. Family Home Ownership by Age and Data Source: 1966-1970 Cohorts



Source: Urban Institute tabulations of MINT5 and 1992–2004 SCF.

Figure 3–12. Family Home Ownership by Age and Data Source 1951-1955 Cohorts



Source: Urban Institute tabulations of MINT5 separated by SIPP panel and 1992–2004 SCF.

2. Home Equity

Figures 3–13 to 3–21 show the 70th percentile value of family home equity divided by the average wage by age and cohort calculated from the SCF, HRS, and MINT5. MINT preserves the real value of home equity after retirement (generally age 62). Beginning around age 62, MINT no longer mirrors the age slope observed in the HRS. The assumption that real home equity remains constant after retirement causes MINT to under predict home equity at older ages.

For family heads born between 1951 and 1955, initial 70th percentile home equity on the SIPP is about 40 percent lower than on the SCF. We have done no home equity alignment to the starting SIPP home values. The projected age slope of home equity in MINT closely matches the age slope in the SCF, but the MINT starting value is too low (see Figure 3–22).

For family heads born between 1956 and 1960, initial 70th percentile home equity on the SIPP is about 60 percent too low compared to the SCF. The projected age slope of home equity in MINT closely matches the age slope of the SCF through age 41 (see Figure 3–23). The age slope after age 41, however, steeply rises on the SCF, reflecting the rapid growth in home values that occurred between 1998 and 2004 (see Figure 3–24). Home equity between ages 30 and 50 was estimated on the PSID from 1972 to 1994. The age slopes were estimated over a period with lower growth rates by age compared to historic values that occurred between 1998 and 2004. The updated HRS home equity equations have no effect on the projections before age 50.

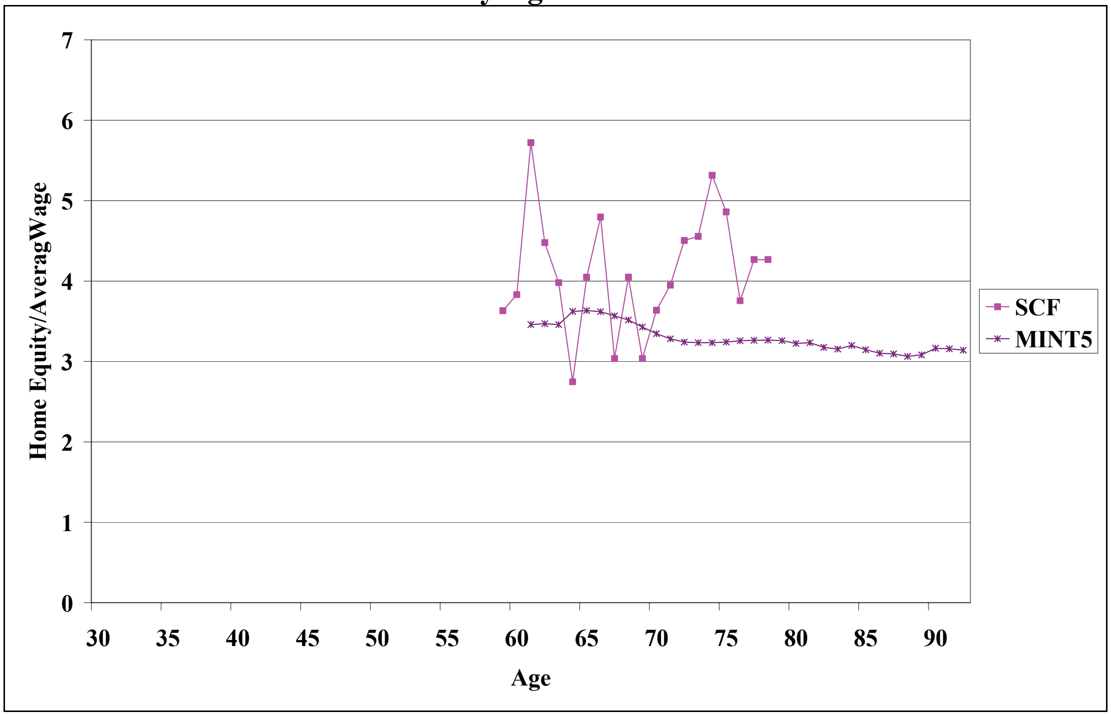
Home equity for family heads born after 1960 in MINT have the same problems as family heads born between 1956 and 1960: initial home equity from the SIPP is too low compared to the SCF, and the projected age slope does not capture the rapid rise in home equity between 1998 and 2004. This report shows only the 70th percentile home equity, we see very similar patterns at other levels of the home equity distribution.

The home equity projections in MINT could be improved by the following adjustments:

- Aligning the starting SIPP values. The alignment issue is larger for the 1996 SIPP panel than for the 1990-1993 SIPP panels, but all panels have lower home equity compared to the SCF.
- Re-estimating the PSID home equity equation for ages 30 to 50 including more recent data;
- Modeling home equity after retirement.

These recommendations, however, raise a more theoretical question. If the rapid rise in home equity between 1998 and 2004 represents a blip in ultimate home equity accumulation, then we may not want to re-estimate the age slope. Doing so would perpetuate the rapid rise in home equity for future cohorts. If we believe that the rapid rise reflects a period effect, rather than a permanent change, it may be better to hit historic home equity by adding period effects in the model or through alignment.

Figure 3–13. 70th Percentile Home Equity/Average Wage 1926-1930 Cohorts by Age and Data Source

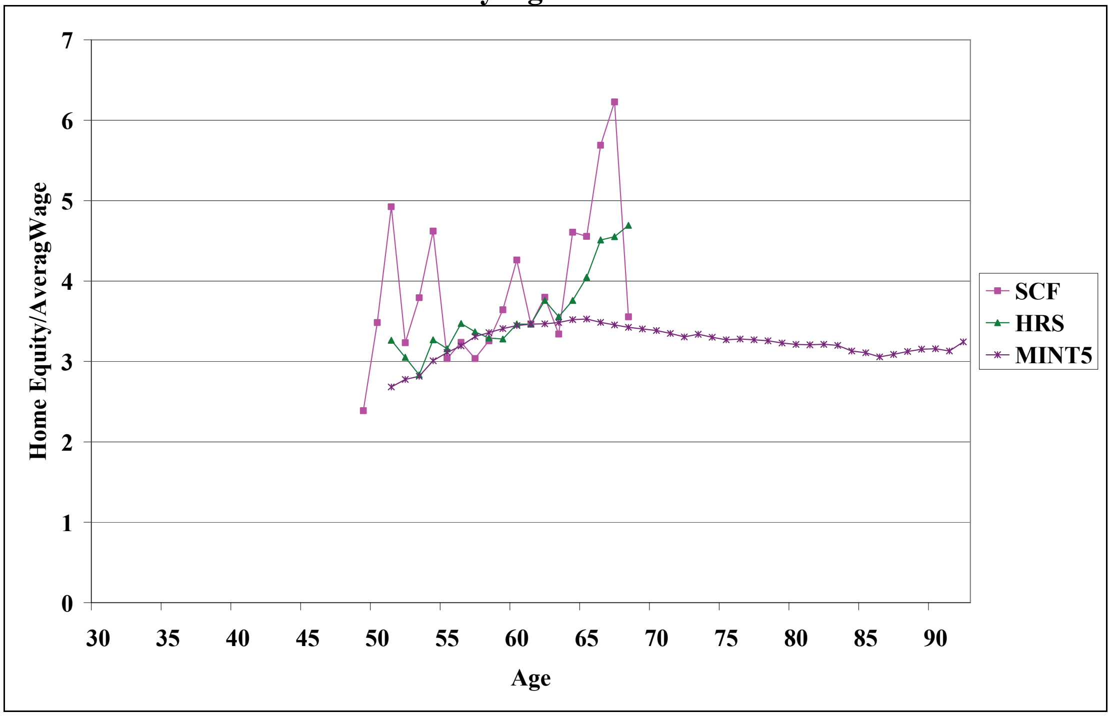


Source: Urban Institute tabulations of MINT5 separated by SIPP panel and 1992-2004 SCF.

Figure 3–14. 70th Percentile Home Equity/Average Wage 1931-1935 Cohorts by Age and Data Source

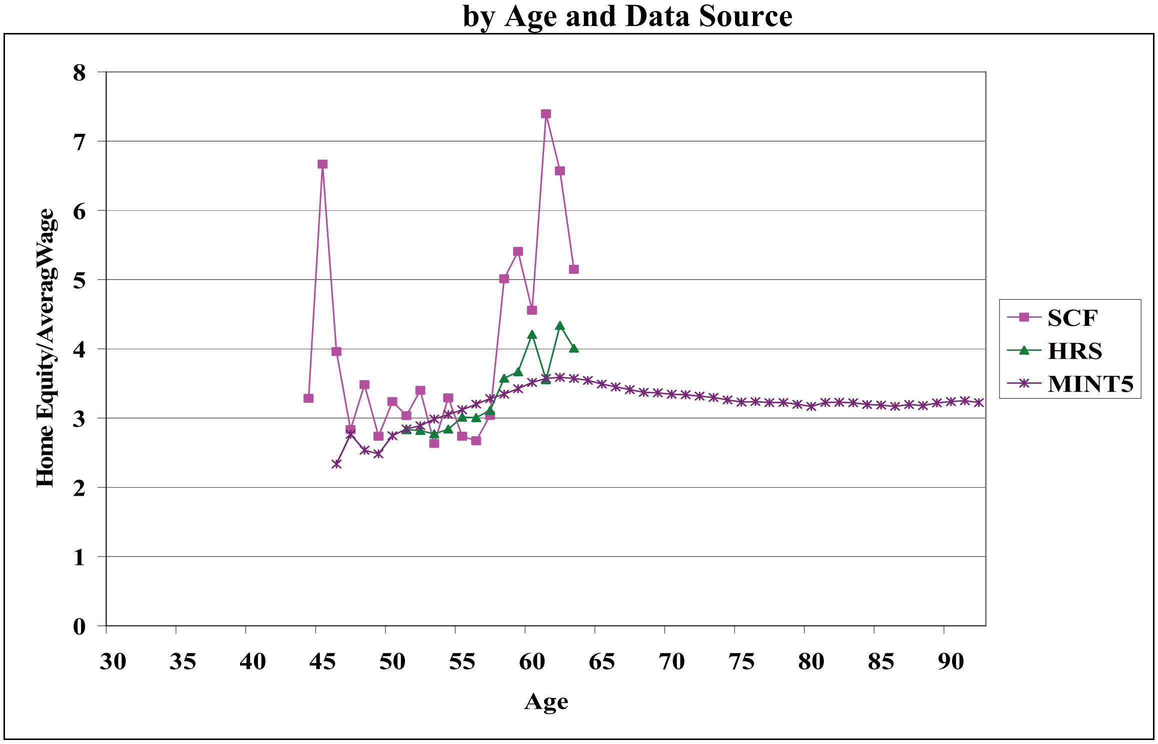
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–15. 70th Percentile Home Equity/Average Wage 1936-1940 Cohorts by Age and Data Source



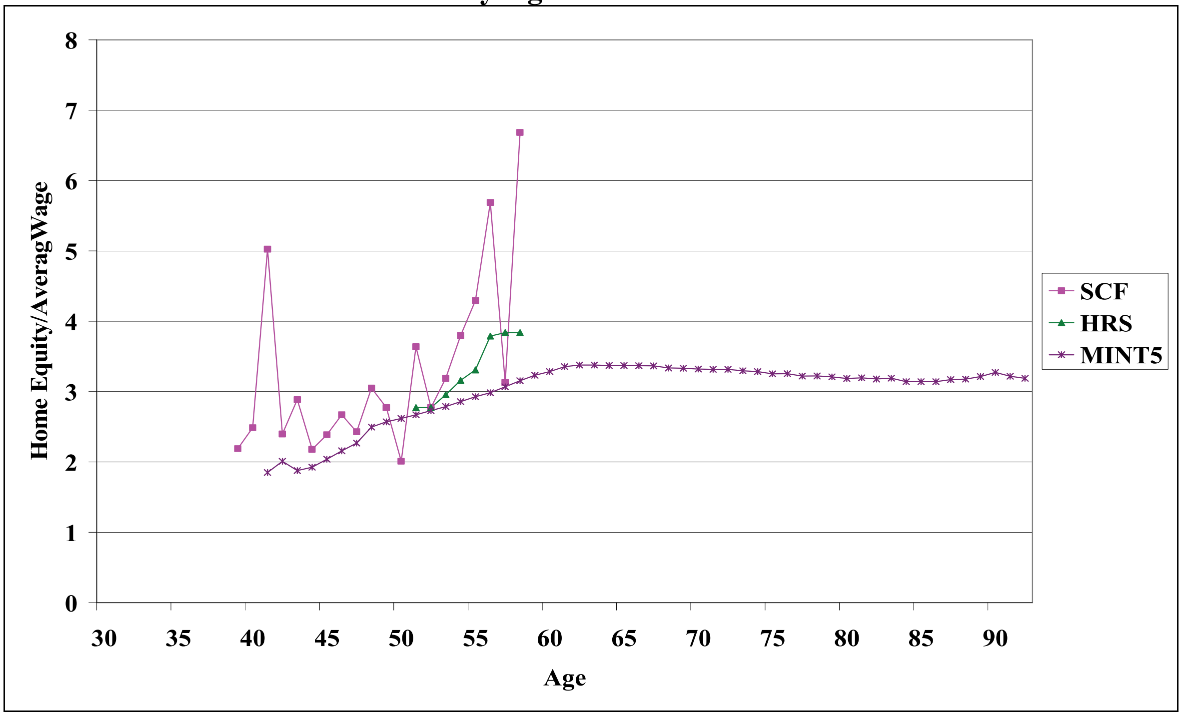
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–16. 70th Percentile Home Equity/Average Wage 1941-1945 Cohorts by Age and Data Source



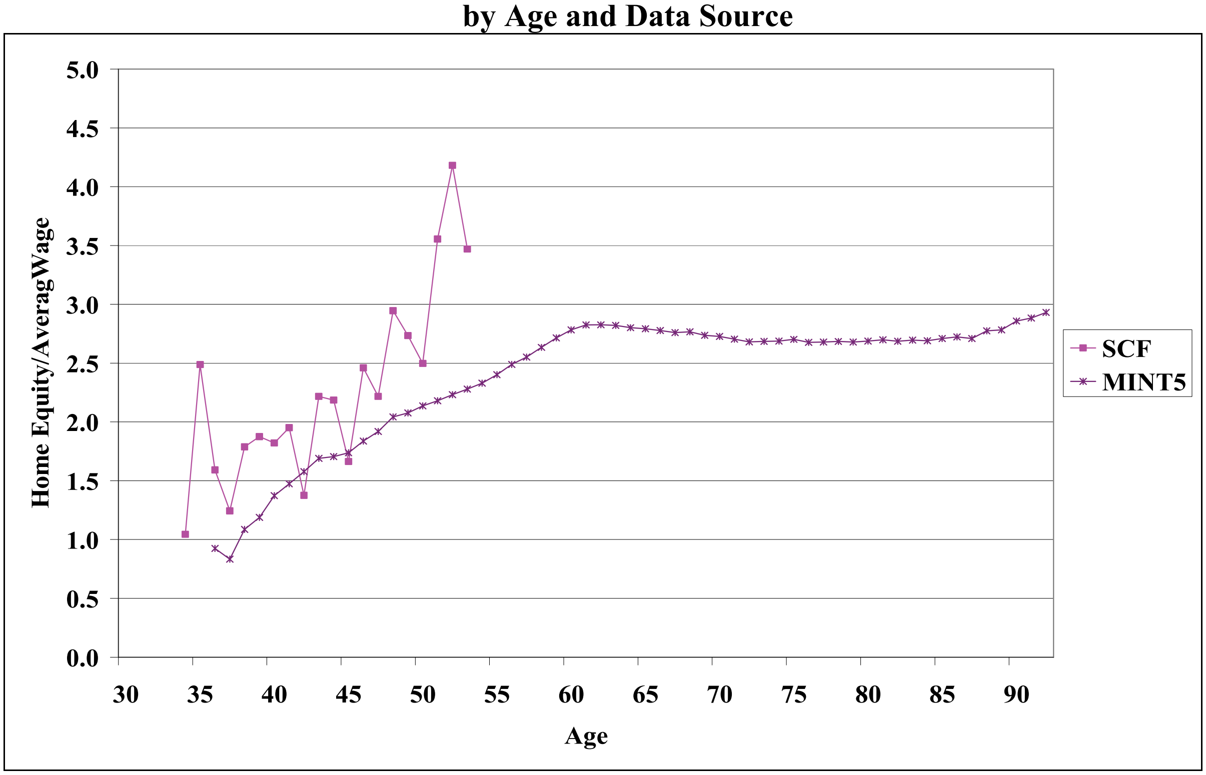
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–17. 70th Percentile Home Equity/Average Wage 1946-1950 Cohorts by Age and Data Source



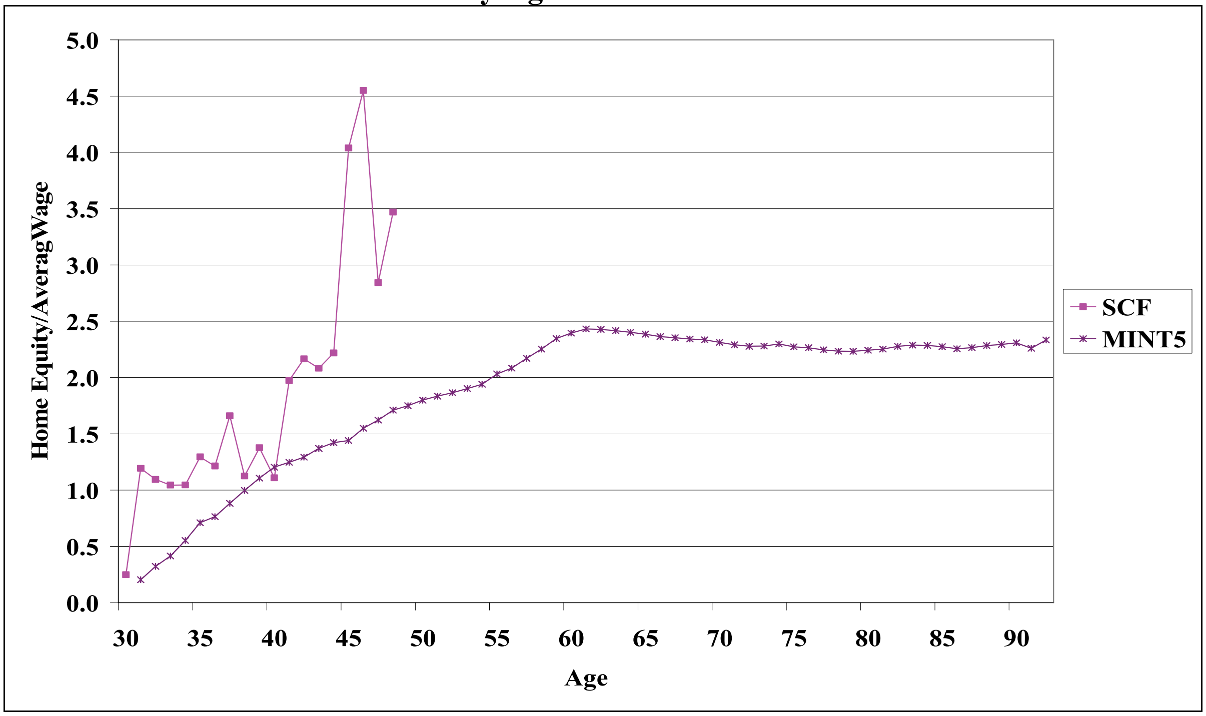
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–18. 70th Percentile Home Equity/Average Wage 1951-1955 Cohorts by Age and Data Source



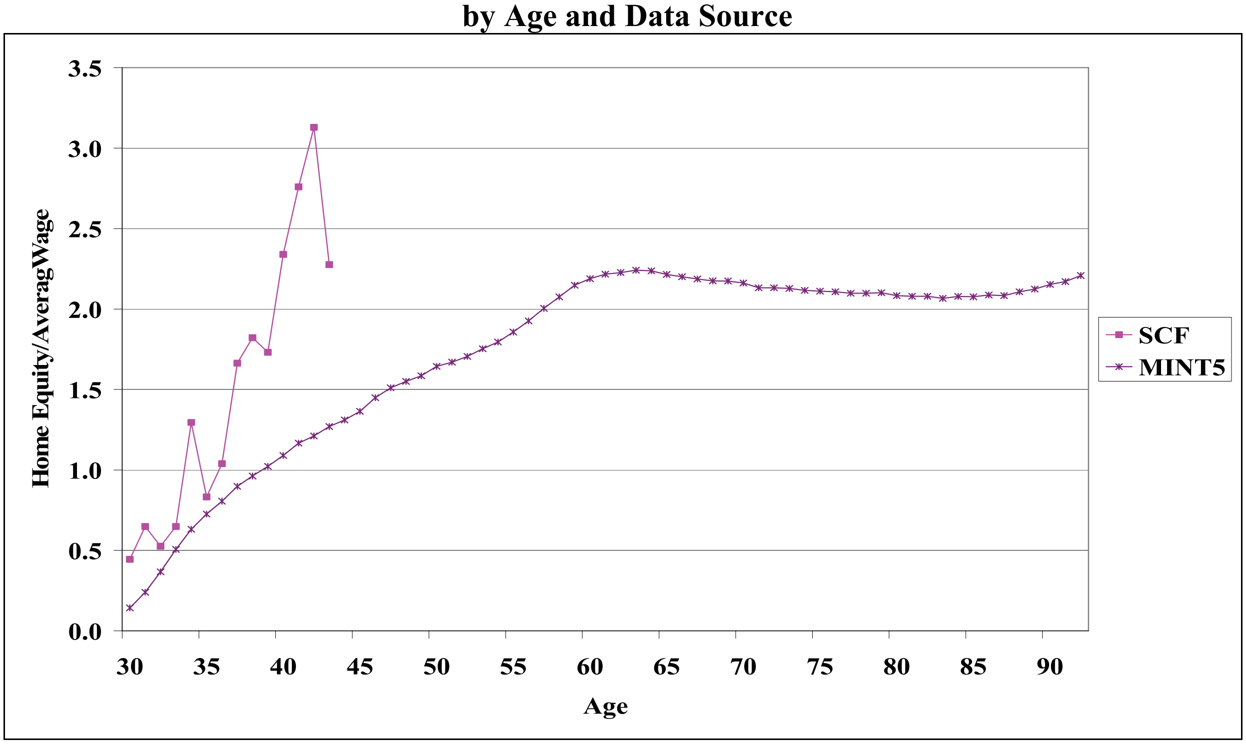
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–19. 70th Percentile Home Equity/Average Wage 1956-1960 Cohorts by Age and Data Source



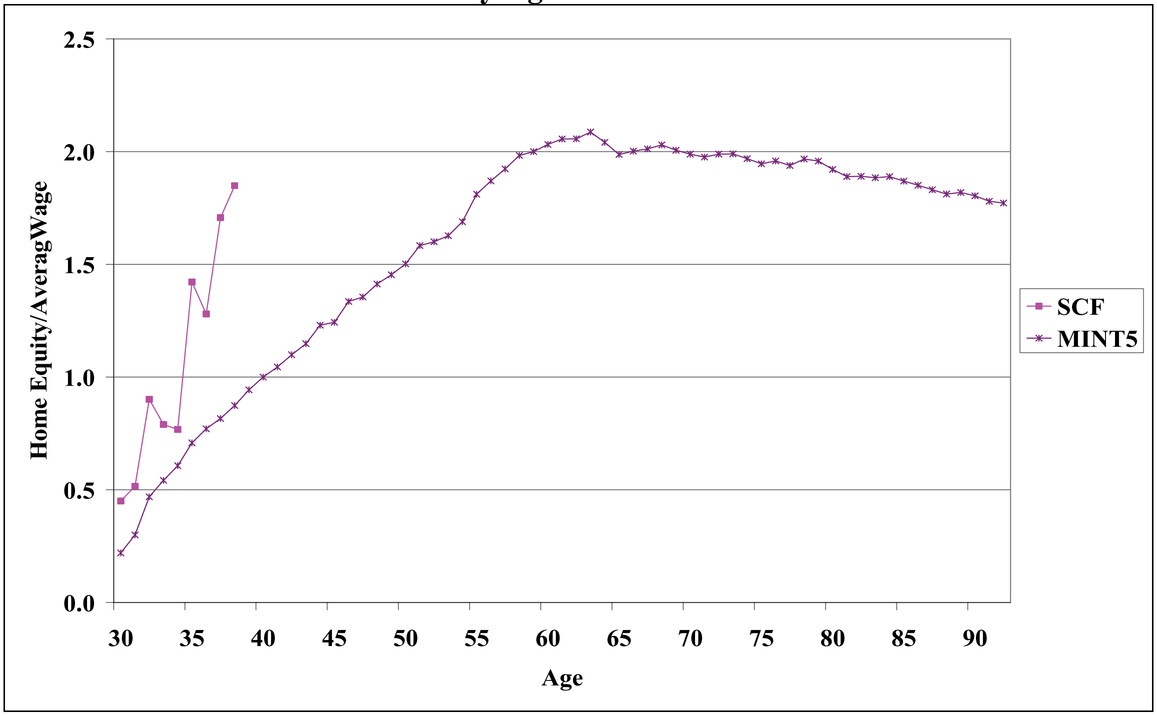
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–20. 70th Percentile Home Equity/Average Wage 1961-1965 Cohorts by Age and Data Source



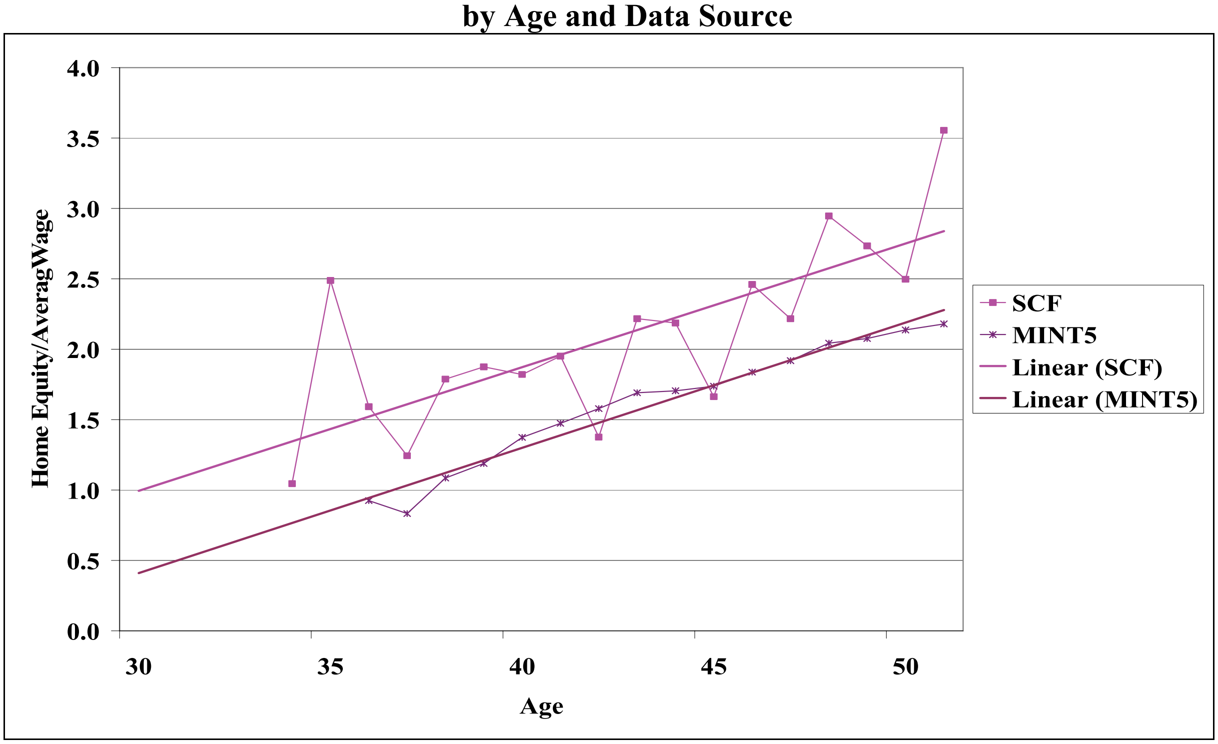
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–21. 70th Percentile Home Equity/Average Wage 1966-1970 Cohorts by Age and Data Source



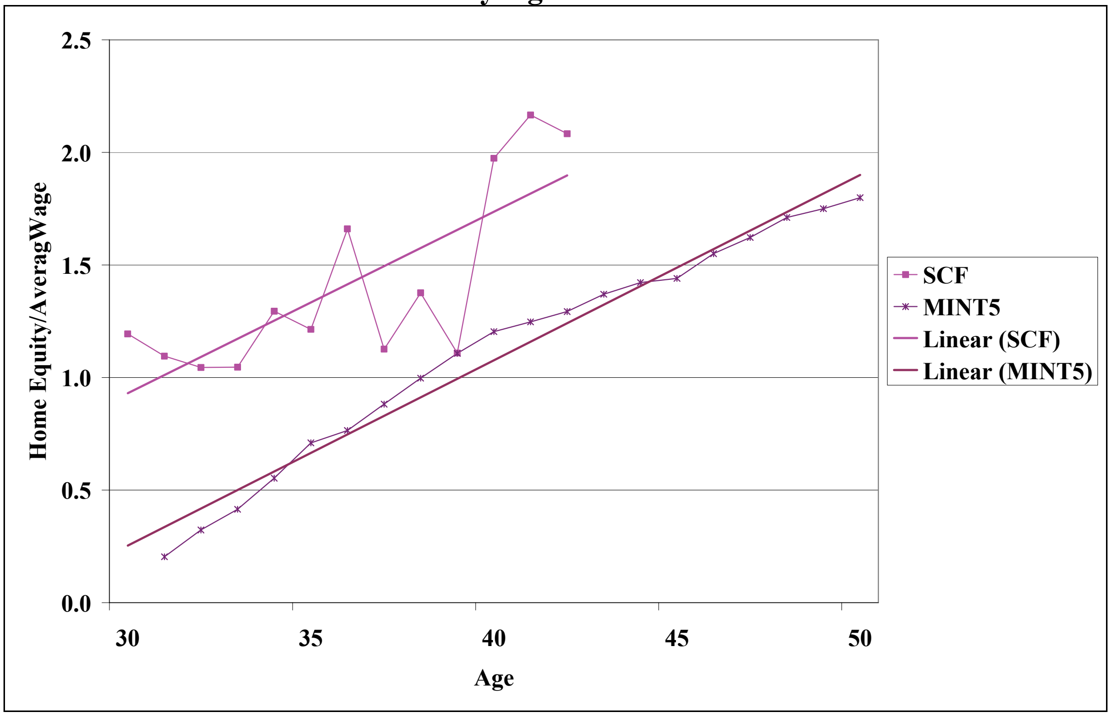
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–22. 70th Percentile Home Equity/Average Wage 1951-1955 Cohorts by Age and Data Source



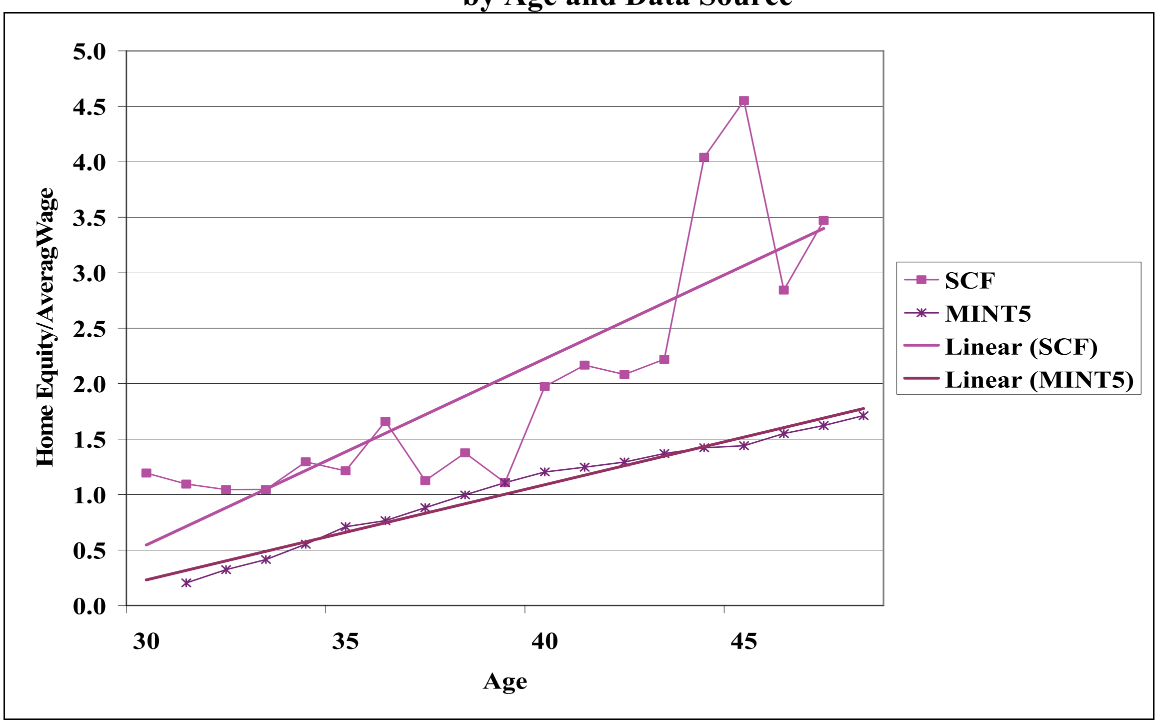
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–23. 70th Percentile Home Equity/Average Wage 1956-1960 Cohorts by Age and Data Source



Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–24. 70th Percentile Home Equity/Average Wage 1956-1960 Cohorts by Age and Data Source



Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

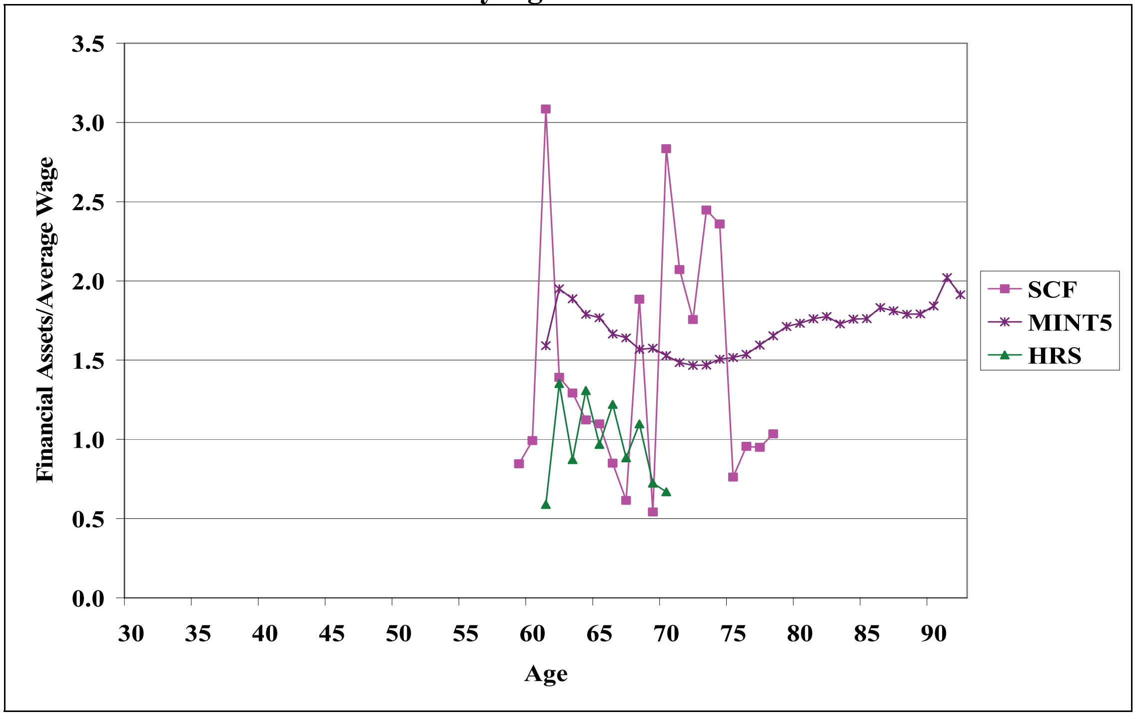
3. Non-Pension Financial Assets

Figures 3–25 to 3–32 compare the MINT5 projected median family nonpension asset relative to the average wage by age and cohort with the SCF and HRS data. Generally, the MINT5 projected median assets align closely with the SCF median assets by age for all of the cohort groups. MINT5 does align the starting SIPP assets nonpension assets to the SCF by age and year (see Smith *et. al.* 2005). Nonpension assets are much more variable compared to housing assets and the medians are quite noisy on the SCF due to small sample sizes, but the MINT projections remain within the bounds of the measured assets on the SCF. Interestingly, median nonpension assets on the HRS are notably lower than the SCF. The SCF and MINT both show rising relative median nonpension assets from age 50 to age 60, but the HRS finds that it falls. These figures also show the shifting cohort pattern of the post-retirement spend-down due to the differential spending of taxable and tax deferred assets. The dip is much more pronounced for families in later cohorts as they have more retirement account assets compared to earlier cohorts.

Figures 3–33 to 3–40 compare the MINT5 projected 80th percentile family nonpension asset relative to the average wage by age and cohort with the SCF and HRS data. Generally, the MINT5 projected 80th percentile assets align closely with the SCF median assets by age for all of the cohort groups. As with median assets, 80th percentile non-pension assets on the HRS are lower than the SCF. The MINT projections rise from age 50 to 65 and then fall though about age 75. The data are noisy enough on the SCF, that it is difficult to see any pronounced trend between ages 50 and 75. The MINT projections remain similar to the SCF values. The HRS data does increase slightly between ages 50 and 60 for family heads born between 1941 and 1945. The slope is not quite as steep as the MINT5 slope, but the trends generally agree. MINT5 projected relative non-pension assets closely align to the general trends and levels tabulated from the SCF.

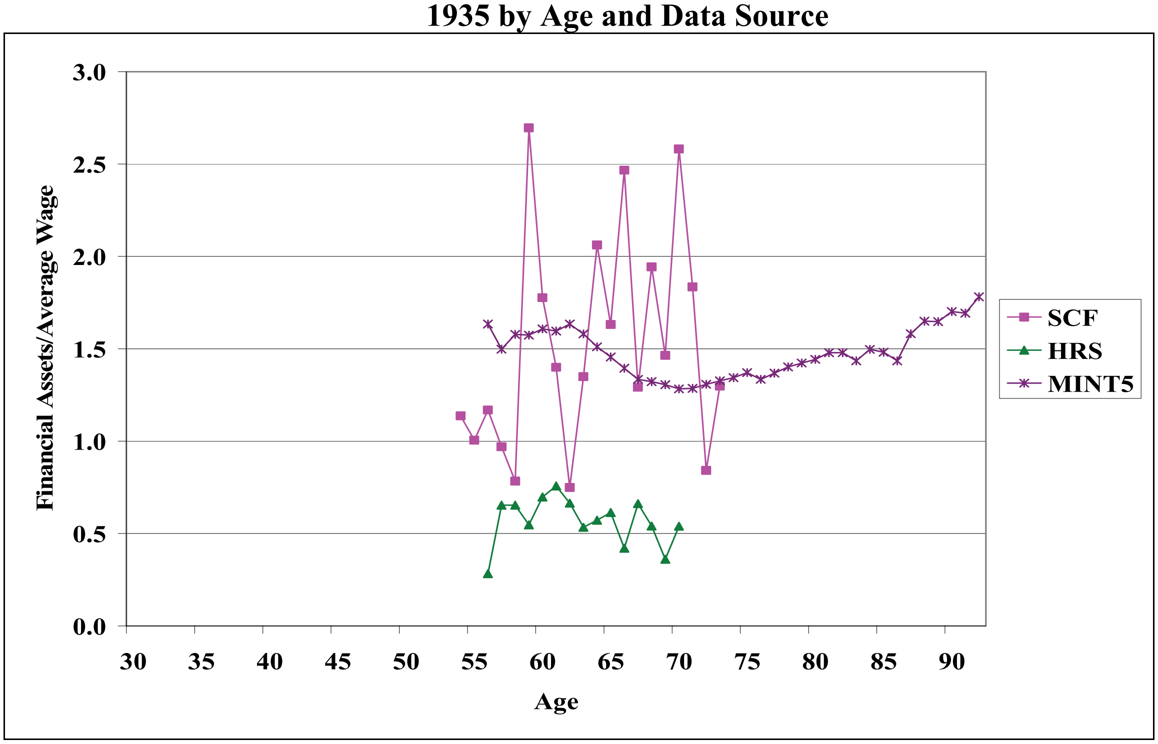
Figure 3–41 compares the MINT5 projected 90th percentile family non-pension assets relative to the average wage by age and cohort with the SCF and HRS data for the family heads born between 1936 and 1940. As with other segments of the asset distribution, MINT5 aligns with the SCF and the HRS data is lower than the SCF. It is reassuring that the MINT projections fall between the SCF and HRS values at all ages. Figure 3–42 compares the MINT5 projected 90th percentile family non-pension assets for the family heads born between 1956 and 1960. Again, MINT5 closely aligns to the SFC values. Comparisons at other segments of the asset distribution confirm that MINT5 matches the SCF distribution by age and cohort.

Figure 3–25. 50th Percentile Family Nonpension Assets/Average Wage 1926-1930 Cohorts by Age and Data Source



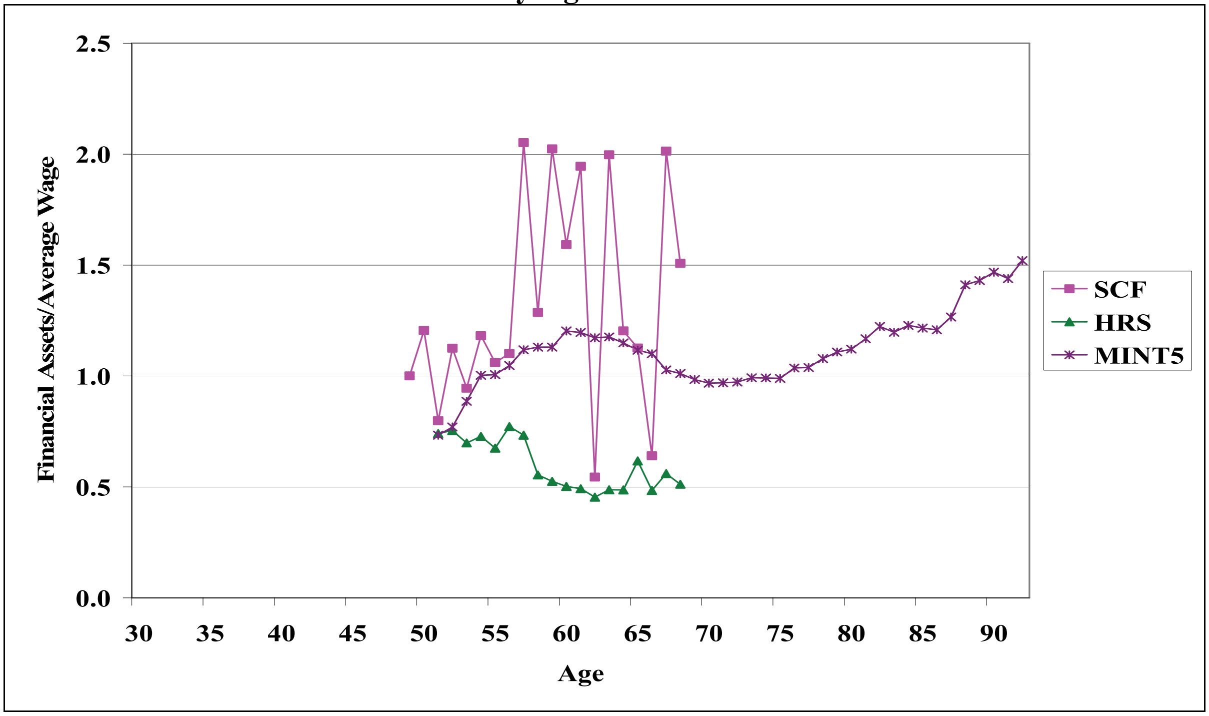
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–26. 50th Percentile Family Nonpension Assets/Average Wage 1931-1935 by Age and Data Source



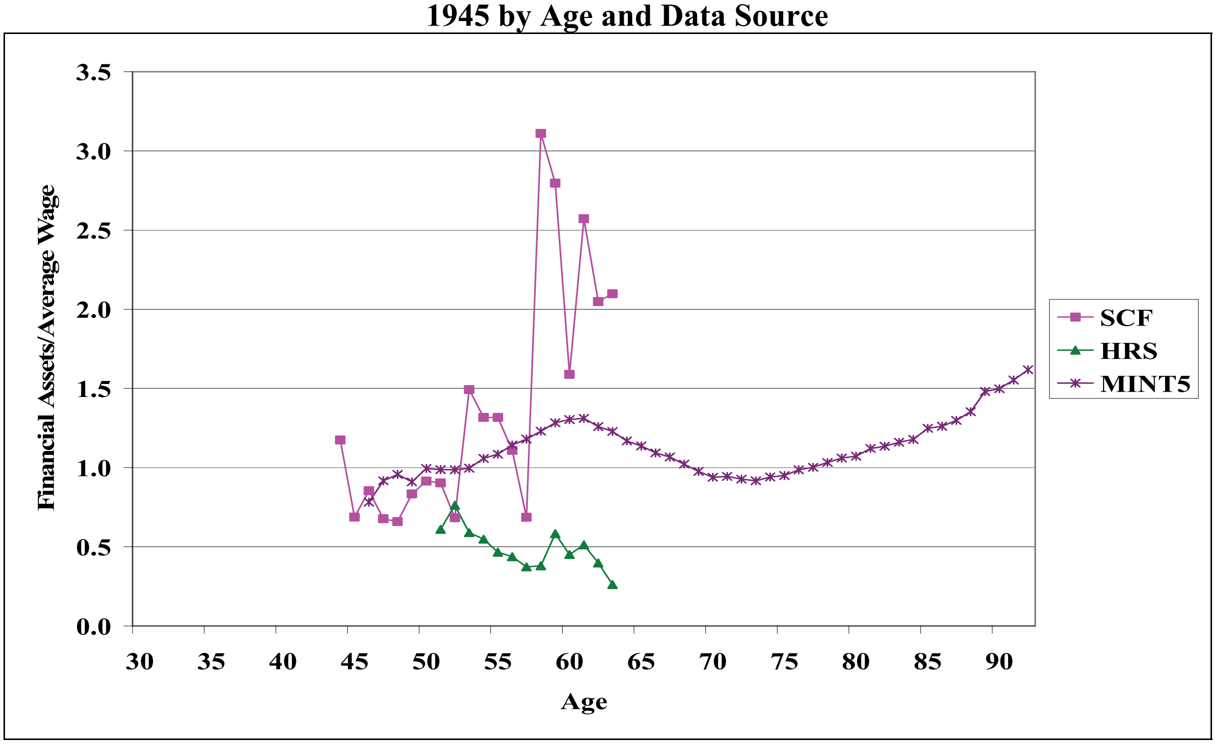
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–27. 50th Percentile Family Nonpension Assets/Average Wage 1936-1940 by Age and Data Source



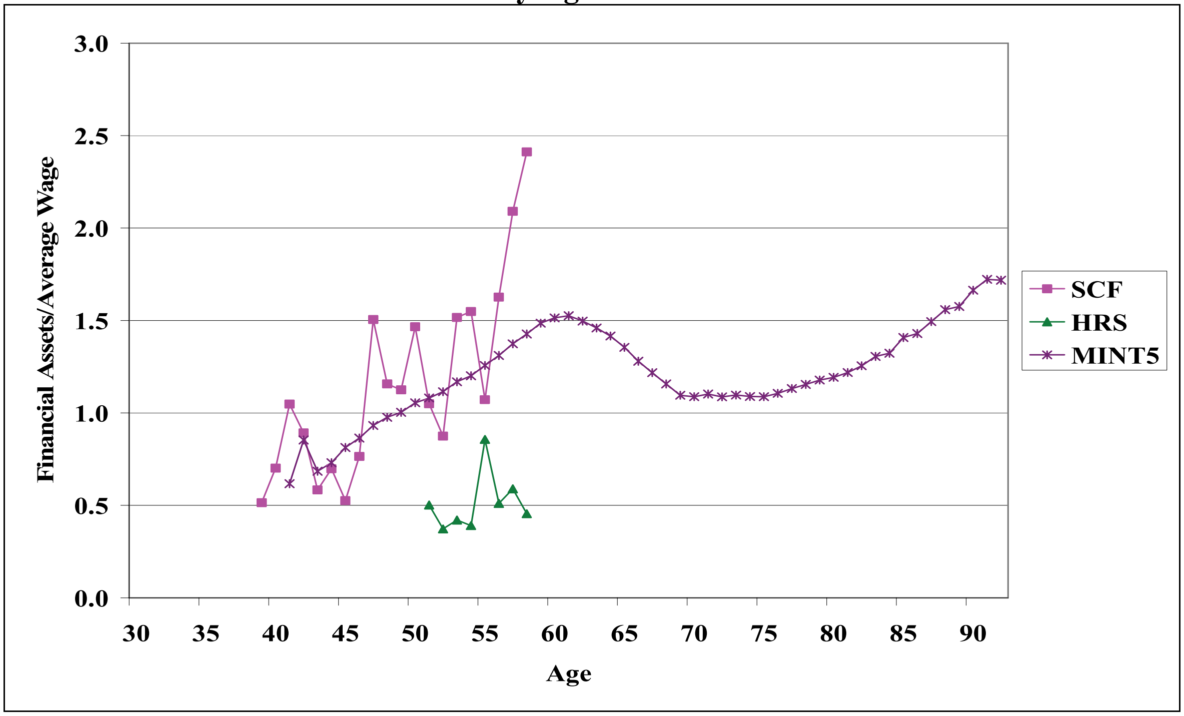
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–28. 50th Percentile Family Nonpension Assets/Average Wage 1941-1945 by Age and Data Source



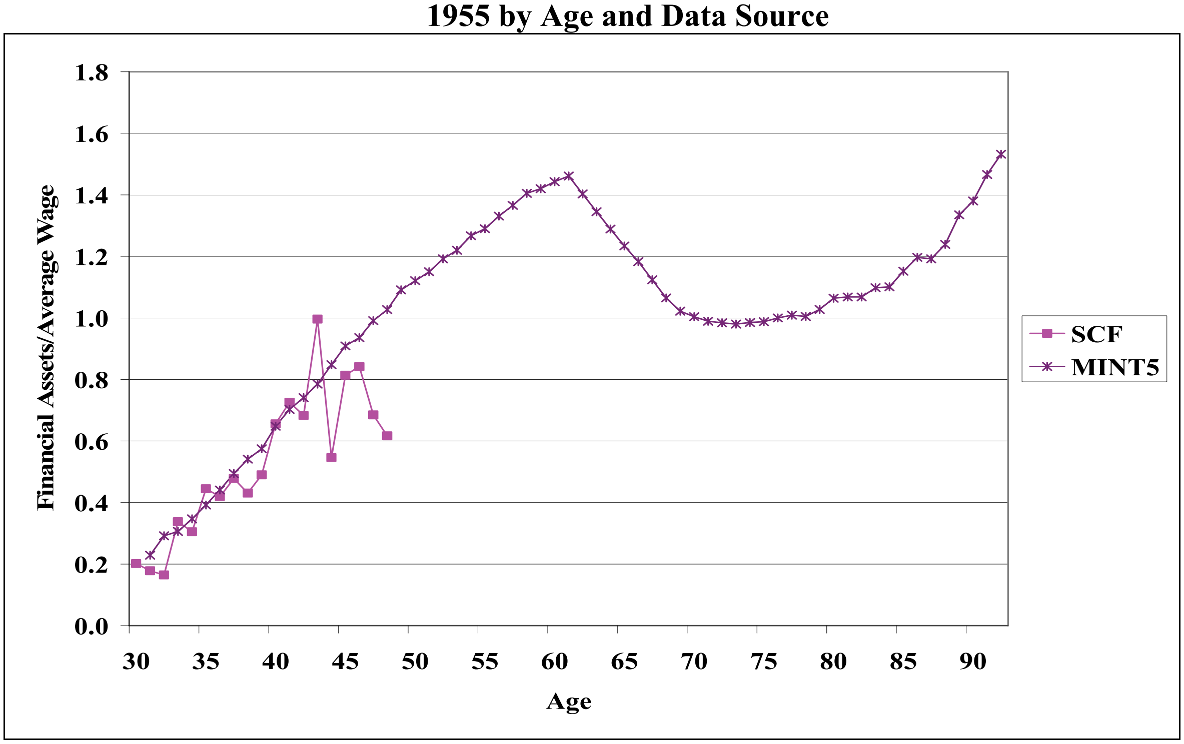
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–29. 50th Percentile Family Nonpension Assets/Average Wage 1946-1950 by Age and Data Source



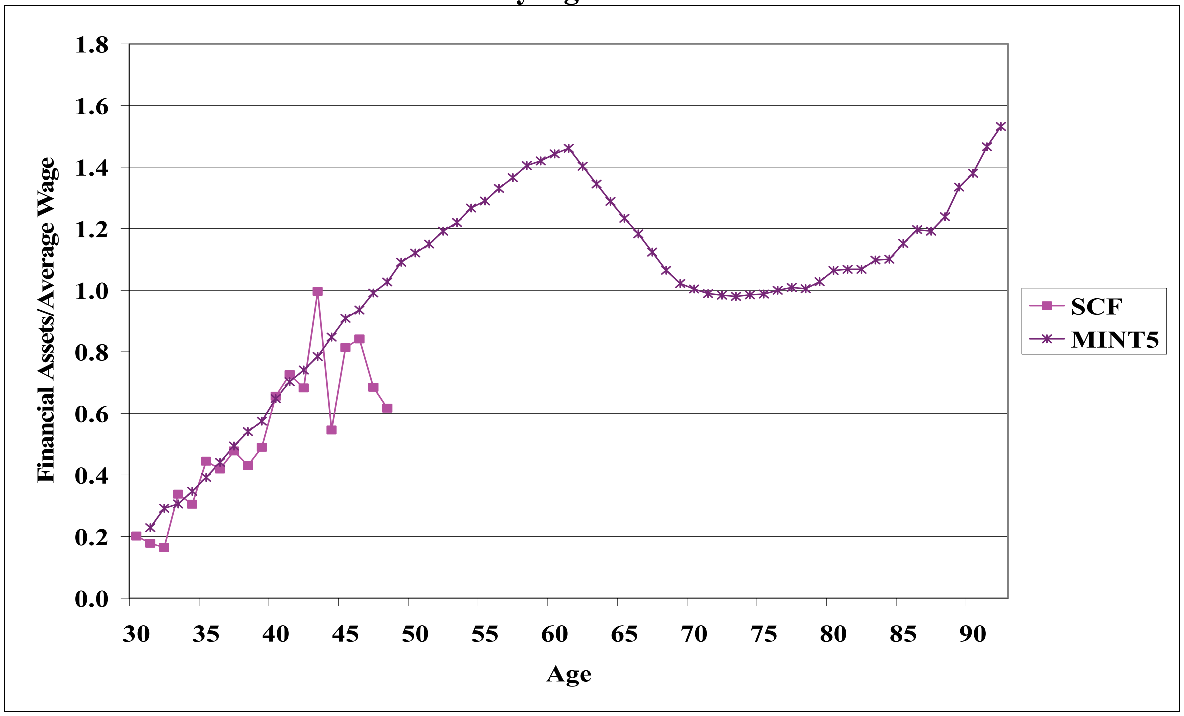
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–30. 50th Percentile Family Nonpension Assets/Average Wage 1951-1955 by Age and Data Source



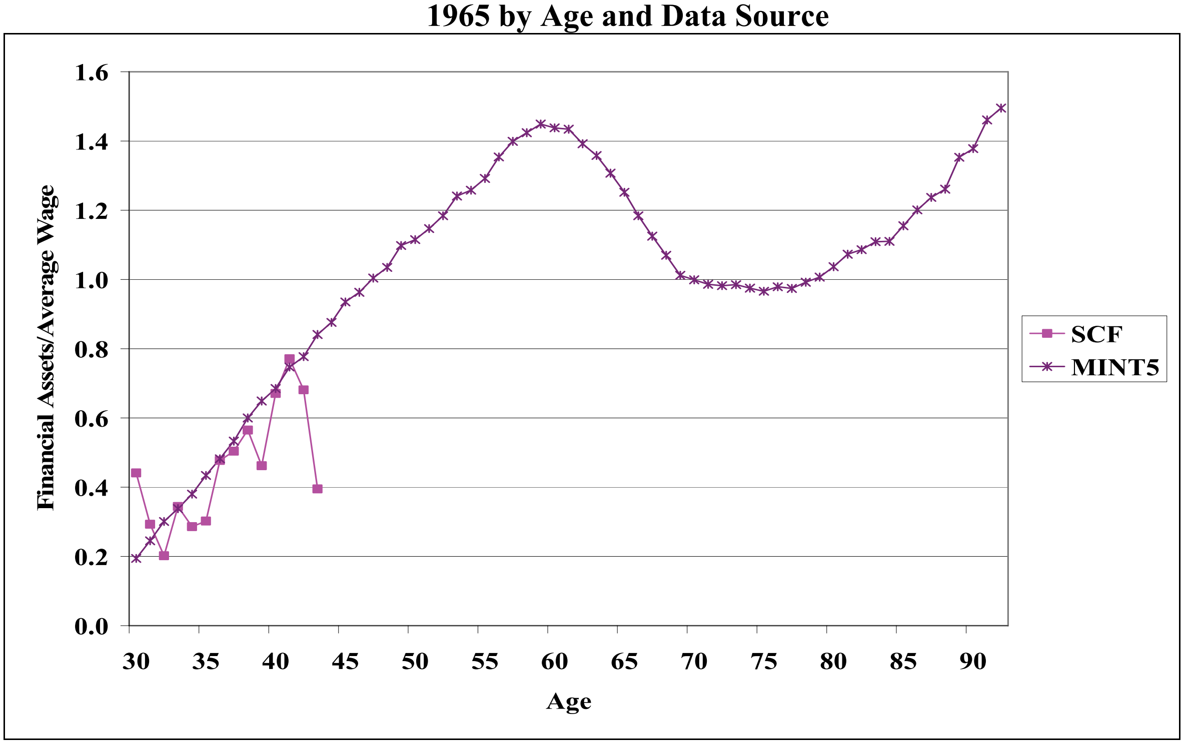
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–31. 50th Percentile Family Nonpension Assets/Average Wage 1956-1960 by Age and Data Source



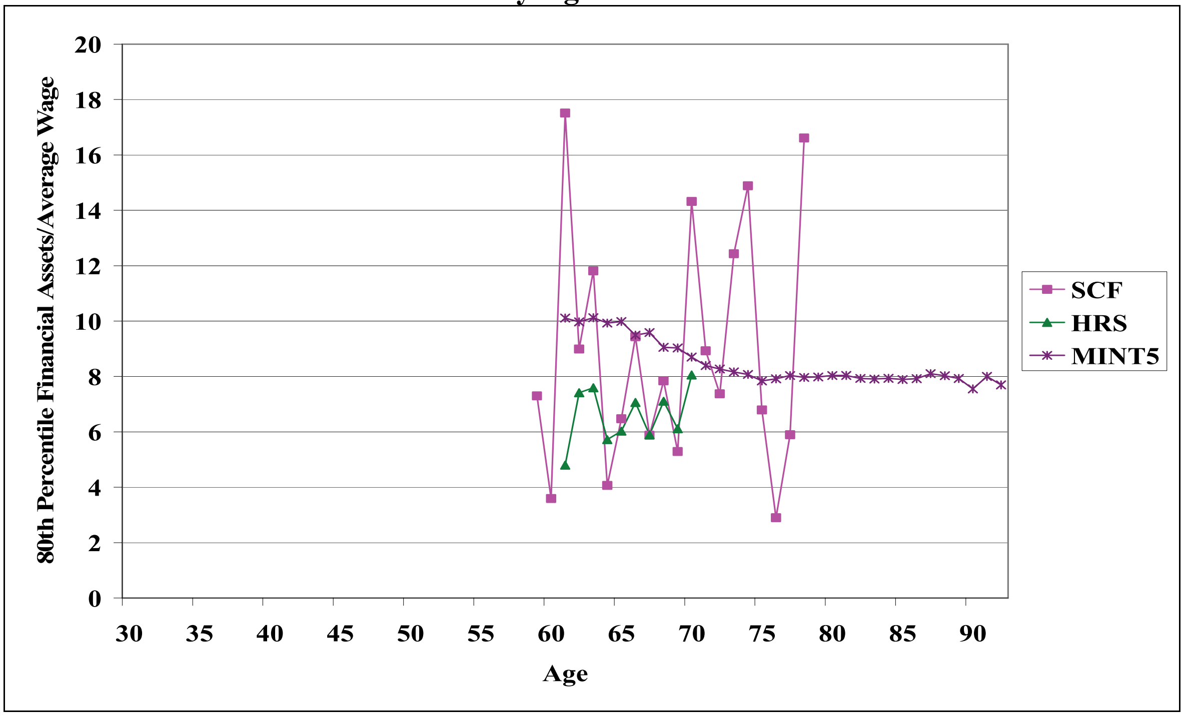
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–32. 50th Percentile Family Nonpension Assets/Average Wage 1961-1965 by Age and Data Source



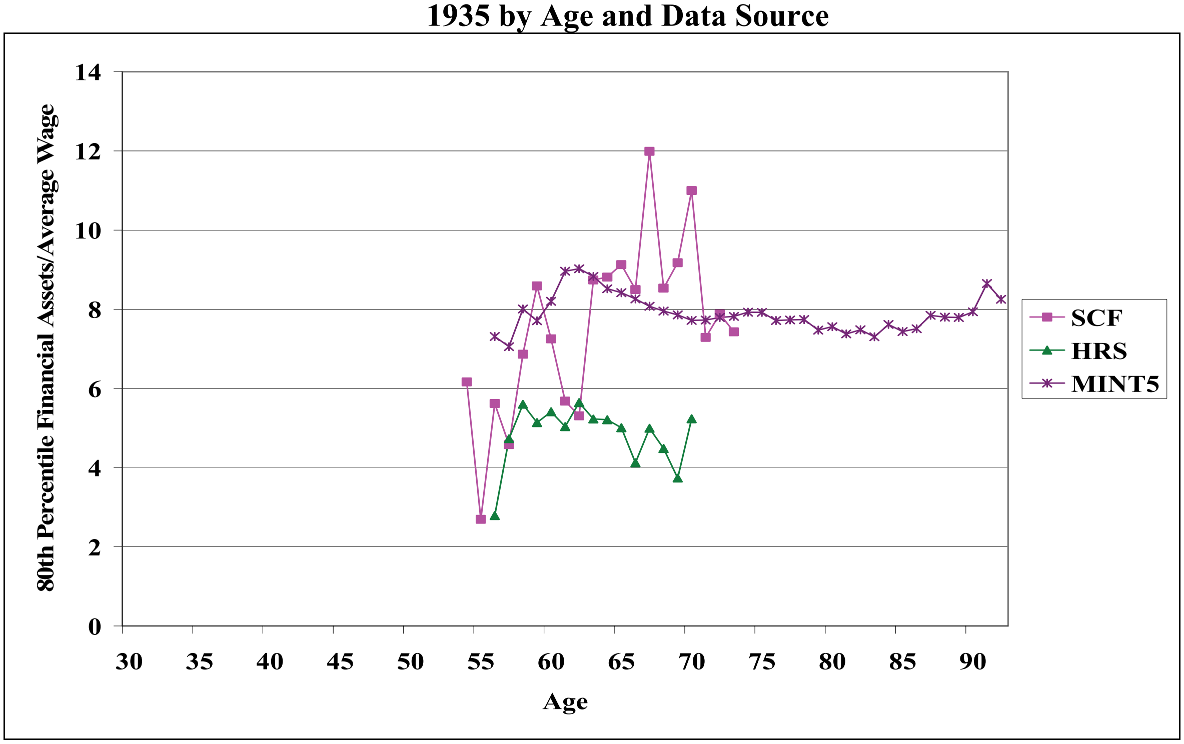
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–33. 80th Percentile Family Nonpension Assets/Average Wage 1926-1930 by Age and Data Source



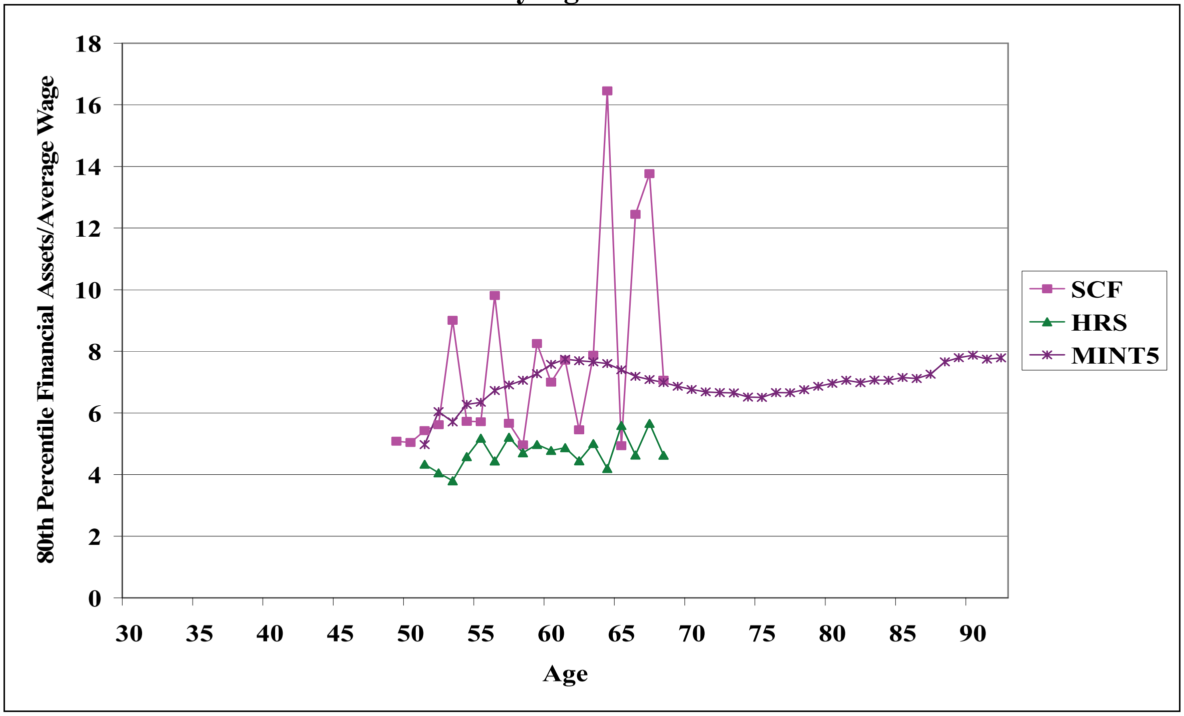
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–34. 80th Percentile Family Nonpension Assets/Average Wage 1931-1935 by Age and Data Source



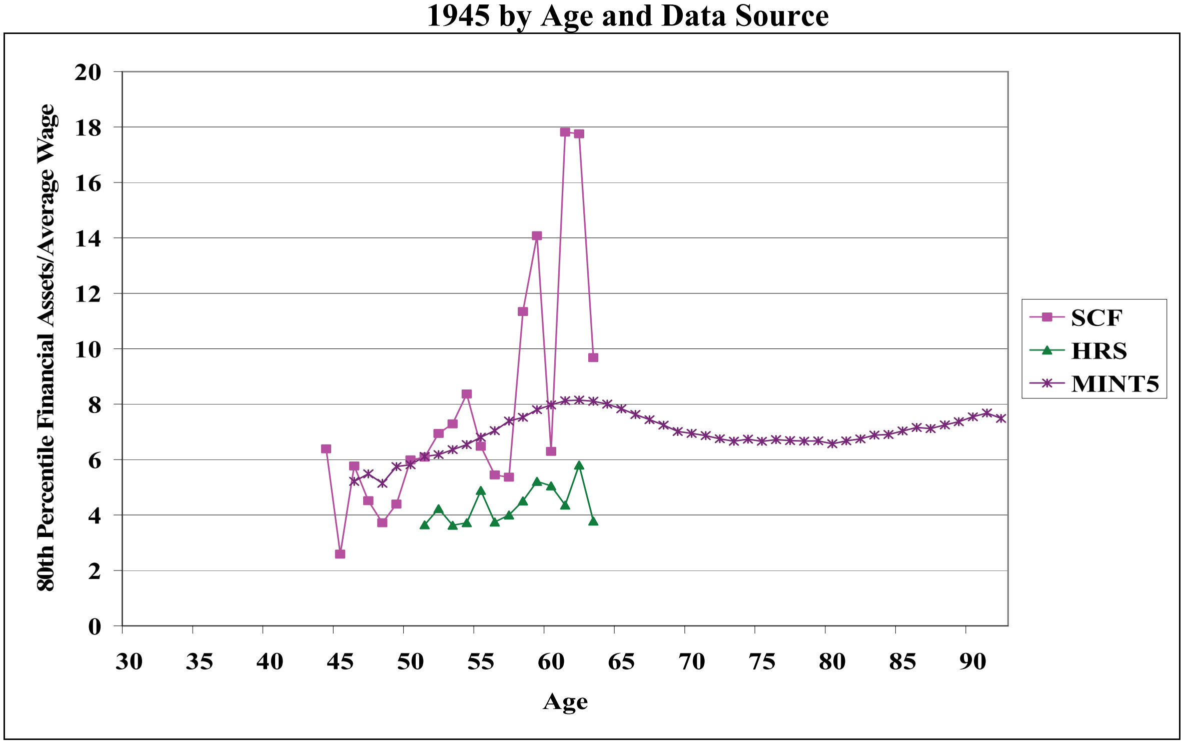
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 3–35. 80th Percentile Family Nonpension Assets/Average Wage 1936-1940 by Age and Data Source



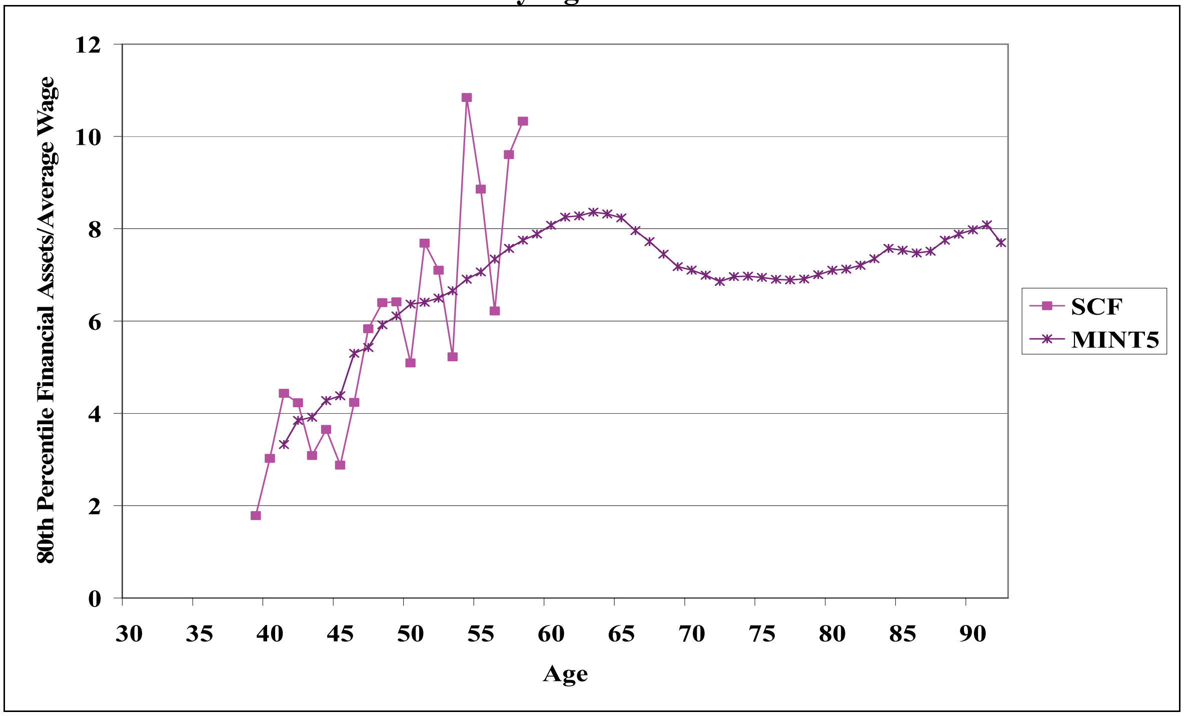
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS

Figure 3–36. 80th Percentile Family Nonpension Assets/Average Wage 1941-1945 by Age and Data Source



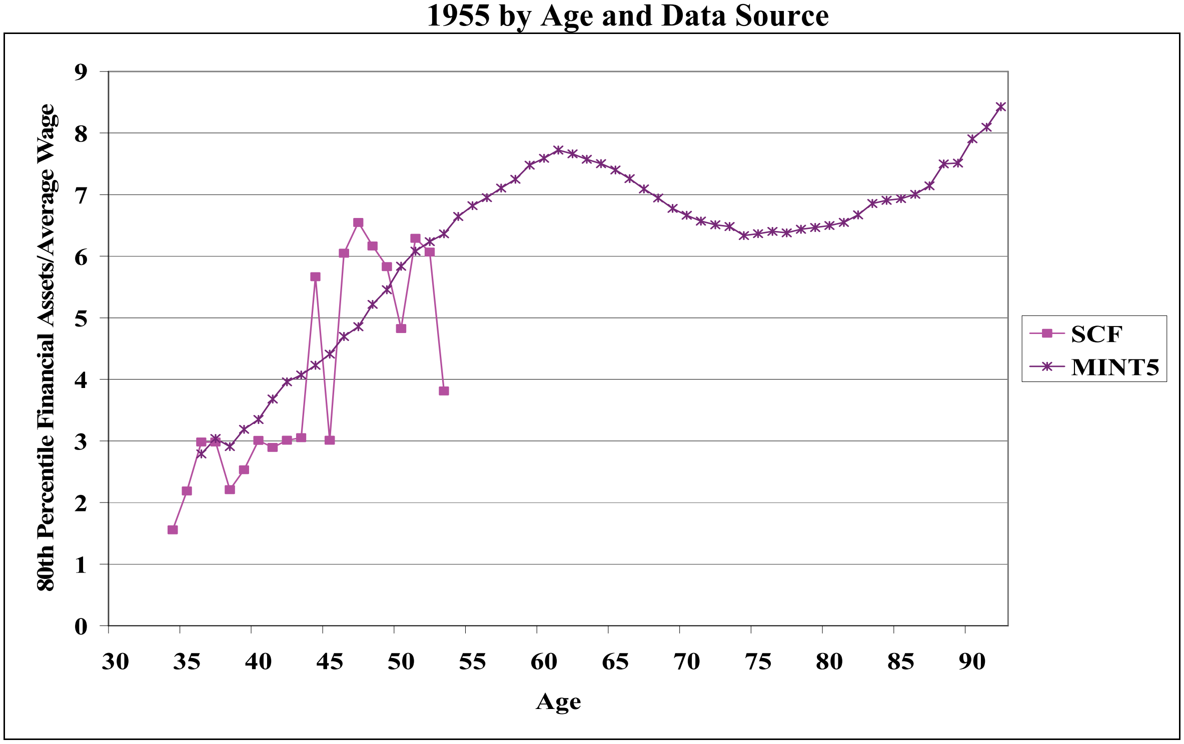
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS

Figure 3–37. 80th Percentile Family Nonpension Assets/Average Wage 1946-1950 by Age and Data Source



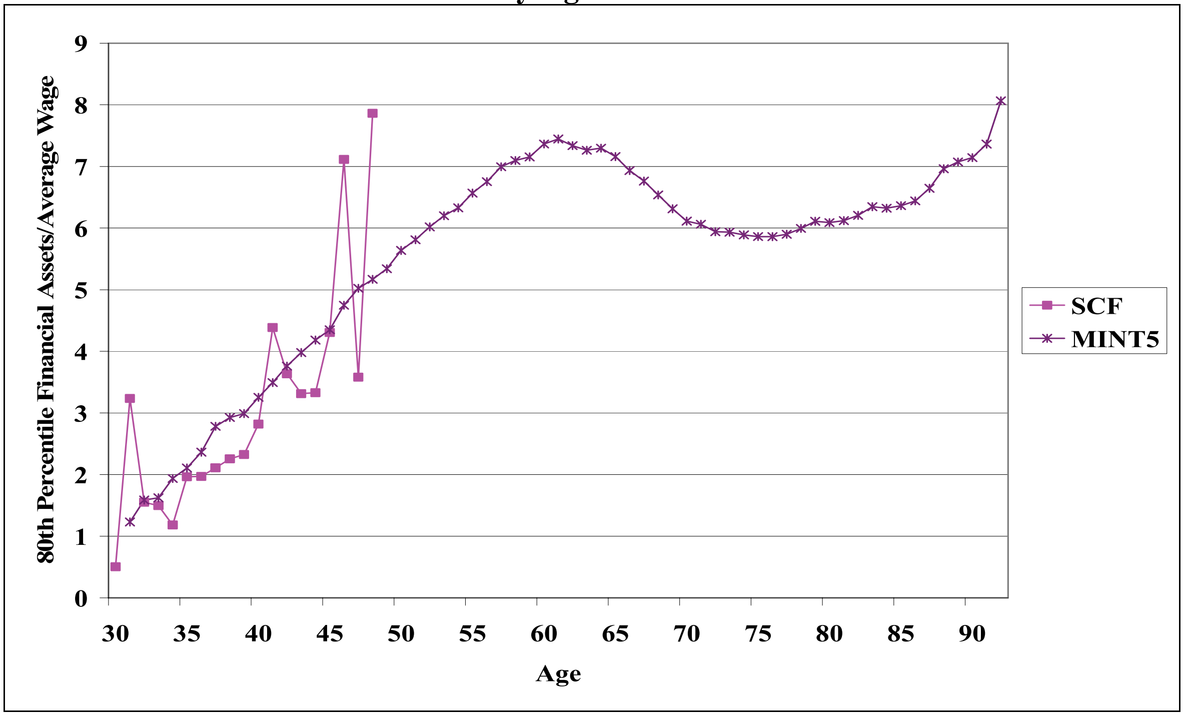
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–38. 80th Percentile Family Nonpension Assets/Average Wage 1951-1955 by Age and Data Source



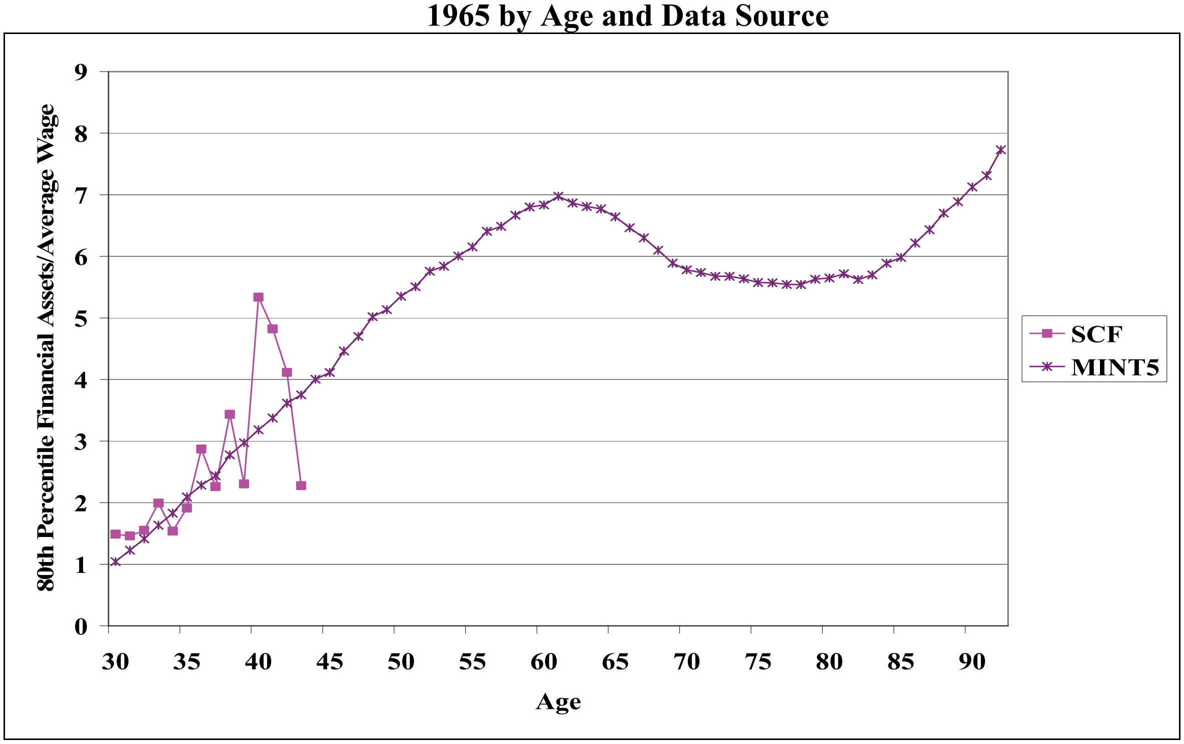
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–39. 80th Percentile Family Nonpension Assets/Average Wage 1956-1960 by Age and Data Source



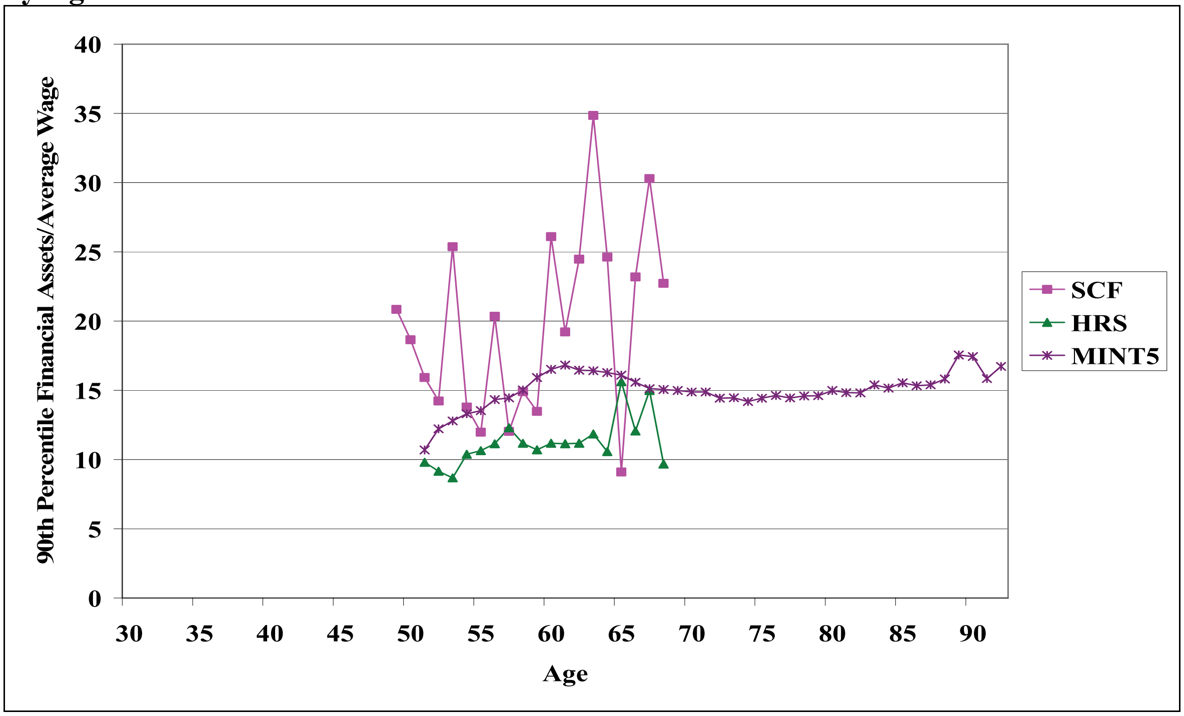
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–40. 80th Percentile Family Nonpension Assets/Average Wage 1961-1965 by Age and Data Source



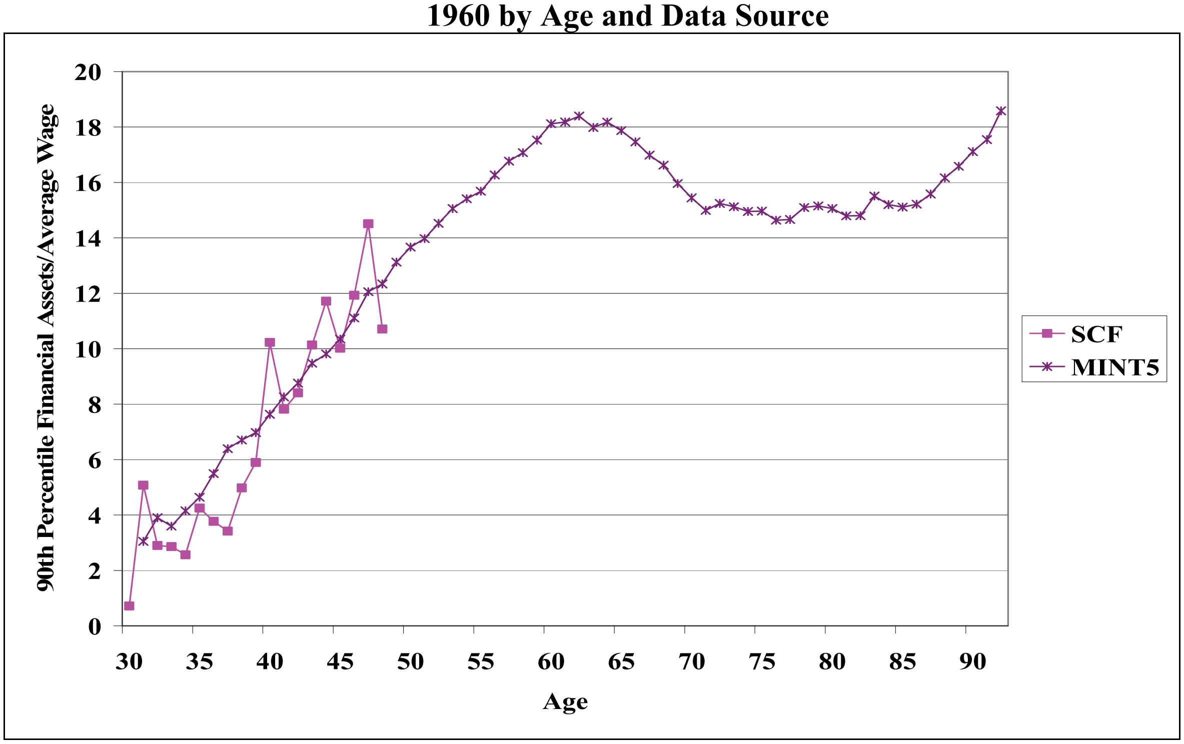
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 3–41. 90th Percentile Family Nonpension Assets/Average Wage 1936-1940 by Age and Data Source



Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS

Figure 3–42. 90th Percentile Family Nonpension Assets/Average Wage 1956-1960 by Age and Data Source



Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

V. CONCLUSIONS

MINT5 projects that both housing and non-housing assets rise with age until retirement. Housing assets relative to wages fall slightly as MINT holds real housing equity constant after retirement.

Non-pension assets in MINT5 rise with age through about age 65 and then fall through about age 75 before increasing again. The dip in non-pension assets between ages 65 and 75 results from the assumption that individuals first spend from taxable accounts and then from tax deferred accounts. Tax deferred accounts are new enough that we don't have any historic data on the spend-down of these accounts. As more waves of HRS data become available, this assumption can be revisited.

MINT5 predicts that both home equity and non-pension assets will become more unevenly distributed over time. MINT predicts bigger increases in inequality in housing equity than in non-pension assets, but non-pension assets remain considerably more unequally distributed than housing assets.

HRS data indicate that relative housing equity continues to rise even after retirement as older individuals continue to pay off mortgages. (Some of the increase measured in HRS at older ages may also reflect the general rise in home values that occurred after 1998.) MINT5 under-predicts home equity relative to the SCF for younger cohorts. This is largely due to the low starting housing equity on the SIPP for younger cohorts. MINT currently aligns starting non-pension assets to the SCF, but does no adjustments for starting housing assets. SSA may want to align starting housing wealth to the SCF in the future.

The distribution of non-pension assets in MINT5 closely matches the SCF by age and cohort. The alignment of the starting SIPP values to the SCF distribution contribute to the close match at earlier ages, but MINT projections of wealth accruals as people age also closely track SCF data.

References

Smith, Karen, David Cashin, and Melissa Favreault. 2005. “Modeling Income in the Near Term 4.” Final Report to the Social Security Administration. Contract No.: 0600-01-60123. The Urban Institute. Washington DC.

Toder, Eric, Cori Uccello, John O’Hare, Melissa Favreault, Caroline Ratcliffe, Karen Smith, Gary Burtless, and Barry Bosworth. 1999. “Modeling Income in the Near Term-Projections of Retirement Income Through 2020 for the 1931–1960 Birth Cohorts.” Final Report, SSA Contract No. 600-96-27332. The Urban Institute. Washington, DC:

CHAPTER 4

CALCULATING TAXES IN MINT

I. INTRODUCTION

MINT projects the major sources of retirement income – Social Security benefits, pension income, income from assets, earnings, Supplemental Security Income (SSI), imputed rental income, and income from non-spouse co-resident family members. MINT1 also simulated the federal and state/local income taxes on this income. However, SSA raised a number of concerns about the MINT1 tax calculator. First, the calculator was overly simplified. Second, it was based on outdated (1998) tax law. Finally, the calculator applied a constant fraction of federal tax liability to determine state and local taxes, with the fraction based on information from only California.

MINT5 includes an improved capability of projecting income taxes for future retirees. The new tax calculator has more details and fewer oversimplifying assumptions, accounts for the alternative minimum tax (AMT), includes improved estimates of state and local income taxes, and is based on a more recent version of tax law that includes changes enacted in recent years, among them the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA).

This chapter describes the updated MINT5 tax calculator. We begin with a description of the new MINT tax calculator in section II. In section III, we discuss how we define dependents, tax units, and filing status. In section IV, we describe how we imputed missing tax-related variables in MINT. Section V provides some validation results.

II. NEW MINT TAX CALCULATOR

SSA agreed to use the federal and state income tax calculator developed by Jon Bakija for this task. The Bakija tax calculator addresses many of the concerns that SSA has with the original MINT1 tax calculator. The Bakija calculator accurately models current law taxes including EGTRRA, JGTRRA, the AMT, and the taxation of Social Security benefits and pension income.

Using the demographic and economic information in MINT, we create inputs for the Bakija tax calculator, such as filing status, itemizer status, and taxable income. Given the projected characteristics and income for each MINT observation, the tax calculator then computes federal income and state income tax liability for each observation.

To use the Bakija tax calculator, MINT must divide households into tax units and then determine each tax unit's tax filing status and number of dependents. MINT must also impute missing income variables that are included in income for tax purposes and missing expenditure items that are tax-deductible. We discuss each of these issues in remainder of this section.

1. Dependents, Tax Units, and Filing Status (Step 1)

Calculating tax liability requires knowing the income and composition of the tax filing unit, including marital status and number and age of dependents (see Figure 4–1). First we determine dependency, which is important for calculating the number of dependent tax exemptions per tax unit, child credits, and the Earned Income Credit (EIC). Once dependency is established, we identify tax units and then assign tax filing status.

MINT5 determines the number of dependents in a household each year based on the fertility history of the family. MINT demographics include only husbands and wives. Children appear only as an attribute of the parent. Consequently, we do not need to be concerned about the detailed rules in the tax law that determine who can claim a dependent child for tax purposes. We assume that all kids under age 19, who MINT projects are living with a parent, are dependents of that parent (or parents, if a married couple) and exclude all older children.[1]

We define all married couples and nondependent individuals as separate tax units. We then assign each tax unit one of three possible tax filing statuses. All married couples are assumed to file taxes jointly, and their tax filing status is defined as "married." Together they file one joint tax return that captures the joint income of the married couple. We assume non-married individuals (i.e. never married, divorced/separated, or widowed) with dependents filed taxes as single persons and their tax filing status is defined as "head of household." Finally, we assume non-married individuals without dependents file taxes as single persons and their tax filing status is defined as "single." Single and head of household tax filing units have only one income earner.

2. Imputations of Income, Adjustment to Income, and Deductions

The federal tax code requires taxpayers to report an extensive list of income sources, adjustments to income, and deductions to compute tax liabilities (see Table 4–1). None of the adjustments or deductions listed are available in MINT – nor are most of the income variables. The main income sources projected in MINT are earnings, DB pension income, income from retirement accounts (DC pensions, IRAs, Keogh plans, and Cash Balance plans), and Social Security benefits. As it turns out, the variables projected in MINT account for the bulk of taxable income (see Table 4–2). For example, wages and salary alone account for over three-quarters of total income. The next largest source of total income is pension benefits, which represent 5 percent of total income. Social Security benefits represent another 2 percent of total income. These three sources of income combined account for approximately 84 percent of total taxable income. The remaining income sources in this list, many which are not in MINT, represent relatively small shares of total income for most of the population, although they account for a significant share (about 43 percent) of income of taxpayers ages 65 and over. Therefore, for the vast majority of taxpayers MINT is expected to project the bulk of their taxable income

[1] The MINT fertility module determines the number and ages of children in the household as of the SIPP interview. Children of the parent that are not observed in the household at the SIPP interview are assumed to have left the parental home and are not treated as a dependent. MINT assumes children stop being dependents at age 19. MINT assumes that children remain with the mother at divorce.

Figure 4–1. Flowchart of Procedure for Estimating Tax Burdens in MINT

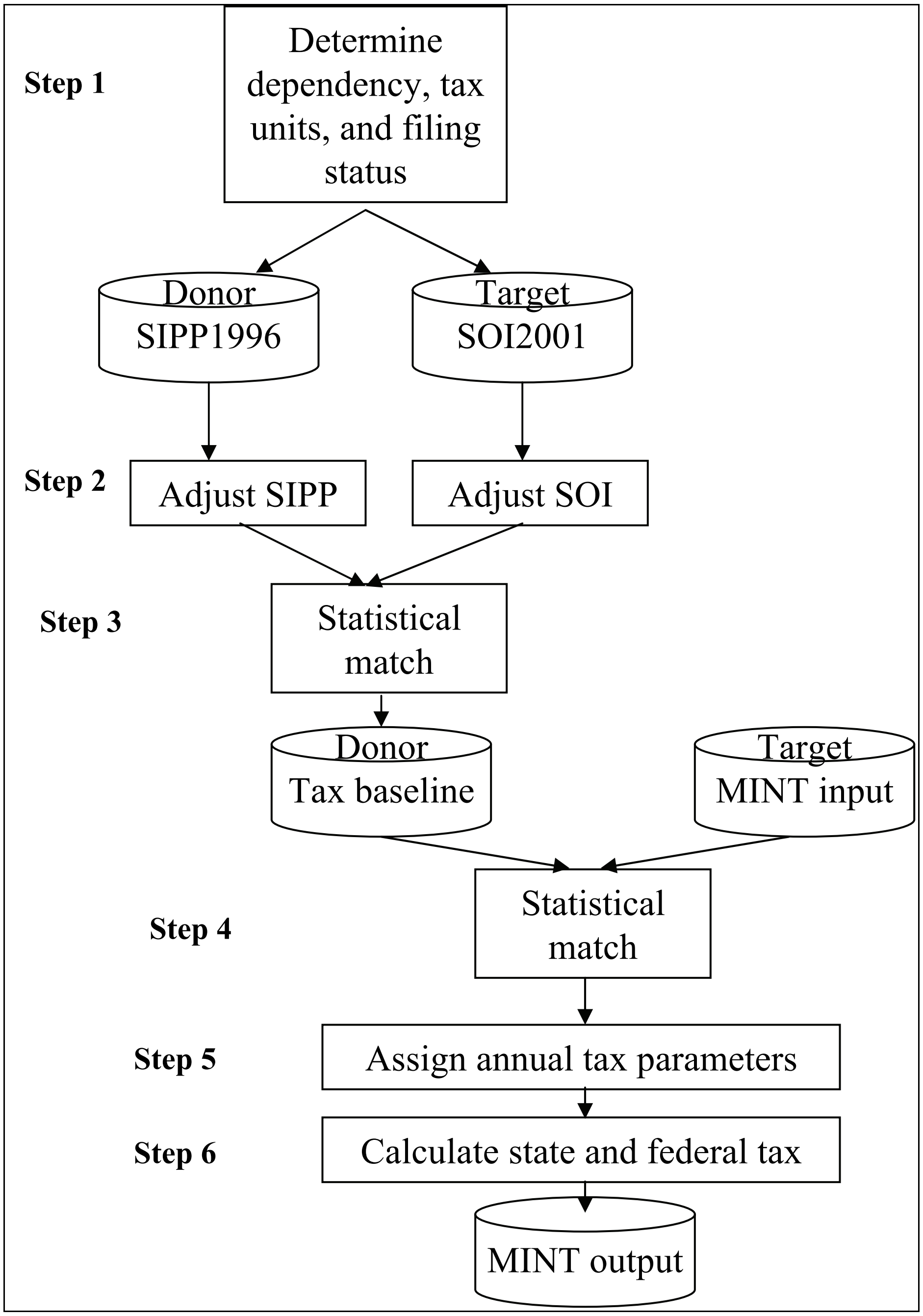


Table 4–1. List of Tax-Related Variables by Data Source

	Projected in MINT	Imputed
Income		
Wages/Salary	x	
Taxable Interest		x
Tax-Exempt Interest		x
Dividends		x
State Income Tax Refund		x
Alimony Received		x
Business Net Income		x
Business Net Loss		x
Capital Gains		x
IRAs		x
Pension/Annuities Total	x	
Pension/Annuities Taxable	x	
Total Rent and Royalty Income		x
Total Rent and Royalty Loss		x
Partnership Net Income		x
Partnership Net Loss		x
Estate and Trust Income		x
Farm Income		x
Farm Loss		x
Unemployment Comp		x
Social Security Total	x	
Social Security Taxable	x	
Adjustments		
Education Expenses		x
IRA Payments		x
Student Loan Interest		x
Tuition and Fees		x
Moving Expenses		x
Self-Employment Tax		x
Self-Employment HI		x
Keogh Plan Payments		x
Alimony Paid		x
Medical Savings Account		x
Deductions		
Total Itemized Deductions		x
Total Taxes Paid		
State and Local Income Taxes		x
Real Estate Taxes		x
Personal Property Taxes		x
Other Taxes Paid		x
Total Interest Paid		
Home Mortgage Interest		x
Deductible Points		x
Investment Interest		x
Charitable Contributions		x
Casualty or Theft		x

Source: Urban Institute tabulations from IRS form 1040.

Table 4–2. Relative Importance of Income Sources to Gross Income in SOI, 2001

	Share of Gross Income		
	Age< 65	**Age 65+**	**All**
Earnings (Wages/Salary + Self-Employment)	85.5%	22.3%	76.7%
Taxable Interest	1.7%	11.6%	3.1%
Dividends	1.1%	6.8%	1.9%
Capital Gains	4.2%	10.9%	5.1%
Taxable Pensions/Annuities	2.4%	24.1%	5.5%
Total Rent and Royalty	0.3%	3.1%	0.7%
Partnership and S-Corp	3.6%	3.3%	3.6%
Unemployment Compensation	0.5%	0.1%	0.4%
Taxable Social Security	0.1%	10.2%	1.5%
Other Sources of Income	0.5%	7.5%	1.5%
Total Gross Income (unadjusted)	100.0%	100.0%	100.0%

Source: Urban Institute tabulations of the 2001 Statistics of Income Data.

A number of taxable income sources, such as interest, dividends, and capital gains, are generated from assets. Although MINT projects total wealth and the annuitized income from that wealth, we cannot distinguish between non-taxable and taxable income sources, nor does MINT project explicitly the various types of taxable and tax-exempt income sources from assets (for example, the relative shares of investment income from taxable interest, federally tax-exempt interest, dividends, capital gains, and other sources).[2] Because these different forms of income are subject to different tax provisions, we need to impute separately the different forms of income from assets in a way that matches the total assets projected in MINT. Again, these income sources account for a minor share of taxable income.

We impute 1996 SIPP data to the 2001 IRS Statistics of Income (SOI) public-use data file. The SIPP is representative of the non-institutionalized U.S. population and has detailed demographic and asset information that are not available on the SOI. Unlike the SIPP, the SOI has very detailed tax-related information.[3] The purpose of using the SOI for this task is to adjust data on the SIPP, such as interest and dividend income, that may be under-reported and to supplement the SIPP with missing data needed to compute tax liability, such as capital gains realizations and itemized deductions. We statistically matched the detailed demographic and asset information from the SIPP data file with detailed tax-related information from the SOI data file. The resulting enhanced SIPP file provides fairly complete information describing

[2] MINT projects retirement account balances (i.e. DC pensions, IRAs, and Keoghs) and non-pension assets (i.e., vehicle, other real estate, farm and business equity, stock, mutual fund, and bond values and checking, savings, money market, and certificate of deposit account balances, less unsecured debt). This combined stock of wealth is converted into income by calculating the annuity a couple or individual could buy if they annuitized 80 percent of their total wealth.

[3] Actually, the SIPP administers a tax topical module every year to collect information on exemptions, filing status, income, itemized deductions, and tax liability. However, Sisson and Short (2001) note that the response rates are fairly low for a number of qualitative and quantitative questions and that there is some inconsistency between responses in the reported tax variables and those in the core questionnaire.

individuals' characteristics and taxable income sources, which we used to estimate their tax burdens.

3. Adjusting the SIPP and SOI Data Files (Step 2)

Before linking the SIPP and the SOI, we made a number of adjustments to data on each of these files (see Figure 4–1). Financial assets, IRA/Keogh and 401(k) balances on the SIPP are substantially lower than those in the Survey of Consumer Finances (SCF). Because of the documented differences between the SIPP and SCF asset distributions, we adjusted the 1996 SIPP values so that they aligned to the 1998 SCF.

We also discovered that the SOI had a number of tax units with extremely high or low adjusted gross incomes (AGIs), but who represented a minority of the overall population (i.e. they had very small weights). To avoid giving too much weight to these tax units when we matched the SIPP or MINT with the SOI, we blended tax records of tax units whose AGI was at the 80th percentile or higher for their state and filing status by averaging records ranked by AGI so that the sum of the weights of the pooled records was comparable to the SIPP weights. We also averaged the SOI values of all tax units with zero AGI.

The SOI public-use file does not report state of residence for filers with AGIs below zero or above $200,000. Therefore, we also imputed a state for those without a state on the SOI (about half of SOI records). To do this, we used the ratio of state tax paid and AGI to select the "best" state based on SOI-reported state average tax rates by AGI. We selected the best state as long as the state needed additional tax filers and AGI. Once a state was fully populated, we selected the next best state. This method places high (low) state tax records into states with high (low) state taxes, and preserves the number of tax filers, itemizers, state income tax deductions, and AGI within each state. We use state of residence to estimate state income tax refunds.

4. Creating the Tax Baseline File Donor File (Step 3)

Using a minimum distance function, we statistically matched the 1996 SIPP (adjusted) data file and the 2001 (adjusted) SOI data file (see Figure 4–1). The donor file was the SIPP and the target file was the SOI. Except for variables already on the SOI, each SIPP donor record provided the SOI target record with age, home equity, stocks, bonds, vehicles, cash, property, 401(k) balances, IRA balances, other assets, and unsecured debt. This approach preserved the correlation across different variables for a given record. We also believe that this approach yielded a more representative distribution of those with taxable income, those without taxable income, those who itemized their expenses, and those who took the standard deduction.

The statistical match selected the donor individual with the minimum distance based on the following form:

$$D_d = \sum_{j=1}^{n} w_j * \left[\left(X_{dj} - X_{rj}\right) / \sigma_j\right]^2$$

where D is the distance, j is the number of measured attributes in the distance function, w is a weight factor, X is a characteristic (e.g. wage and salary income), σ is the standard deviation of the j^{th} X variable in the dataset, d denotes the characteristic of the donor (from SIPP), and r denotes the characteristic of the target (from the SOI).

We obtained weights in the distance function by estimating stepwise OLS regressions of taxable income on wage and salary income, self employment and farm income, Social Security benefits, pensions and annuities, taxable IRA distributions, interest income received, taxable dividends, rent and loyalty income less loss[4], alimony received, unemployment compensation, and number of exemptions (0, 1, 2, 3-5, 6+).[5] The regression was run on the SOI for each filing status and age (less than 65 or 65 and older) group. The weight for each factor is equal to the proportion of the variance in taxable income that it explains (partial R-squared). The specific values used in the distance function are shown in Table 4–3.

We tailored the distance function to use as much information as the target group can support. In all cases, we restricted the match to individuals of the same filing status (head of household, married, single), age (less than 65 or 65 and older), and state. If no one was in the donor pool then we expanded the pool by not restricting the match to any particular state. Additionally, individuals who paid mortgage interest or property taxes in the SOI were matched only to individuals with housing equity in the SIPP. We randomly entered the donor pool to allow for random selection among ties in the distance function. Once the donor with the minimum distance was selected, we assigned the donor's SIPP data to the target SOI individual.

The matched data file includes both filers and nonfilers.[6] It has key demographic characteristics including continuous age, marital status and number of dependents, as well as all SIPP-based asset information including housing value and debt, retirement account balances, and financial assets. It also has taxable income sources by type and itemized deductions. The matched data file serves as our "tax baseline" for imputing missing tax-related variables in

[4] The SIPP's IRA, pension, interest, and dividend measures are too low relative to the SOI, especially at the higher percentiles. In order to replicate the taxable income distribution of the SOI, we first partitioned both the SIPP and SOI files by filing status and age (less than 65 or 65 and older) and ranked individuals by each specific income type (e.g. IRA, pension, etc.) Then we transferred the asset income of a tax unit on the SOI to a tax unit on the SIPP of corresponding rank. Thus, the asset income of a jointly filing couple under the age of 65 in the 75th percentile on the SOI, for example, is passed onto a jointly filing couple under the age of 65 in the 75th percentile on the SIPP. Doing this preserves the distribution of income from assets on the SIPP, but adjusts it upward to be more comparable to the SOI.

[5] For the matching algorithm, the choice of variables was limited to those that were common to the two data files. Therefore, we could not use business income, partnership income, S corporation income, and capital gains as match variables even though they are important sources of taxable income, because these variables are not reported on the SIPP. Capital gains and income from unincorporated or flow-through businesses (business income, partnership income, farm income, and S corporation income) was imputed to the SIPP file from the SOI, based on the match. Additionally, it would be ideal to match more precisely on age; however, we were limited to using the two age categories available on the SOI, less than 65 and 65 and older. By including variables that are highly correlated with age in the matching algorithm, such as wages, Social Security benefits, pension income, and number of exemptions, we believe that we are able to capture the age distributions of the taxable income sources.

[6] Before performing the statistical match, we create tax units on the SIPP based on family characteristics. We assign filing status to each unit based on reported income and filing requirements. We then add the nonfilers on this file to the tax baseline file.

MINT for all projection years. The tax baseline file is not limited to the MINT cohorts. It includes a representation of families at all ages.

Table 4–3. Weights and Standard Deviations Used in the Distance Function to Statistically Match the SIPP and SOI

	Single < 65		**Single 65+**	
Variable	**Weight**	**Std. Dev.**	**Weight**	**Std. Dev.**
Wage	0.2837	63409.96	0.0755	24742.61
Self-employment	0.0035	11108.60	0.0304	19750.16
Social Security Benefits	0.0000	906.01	0.0004	6116.02
Pension Benefits	0.0002	11807.87	0.0034	27721.69
IRA	0.0003	2518.12	0.0056	9406.49
Interest	0.1428	17740.71	0.0411	25913.45
Dividends	0.0124	10881.53	0.2401	35101.40
Rent	0.0084	11534.67	0.0906	32341.88
Alimony	0.0001	1344.36	0.0001	2025.37
Unemployment Compensation	0.0000	847.92	0.0000	394.86
Total Exemption Group	0.0002	0.5178	0.0000	0.1383
	Joint < 65	**Joint 65+**		
Variable	**Weight**	**Std. Dev.**	**Weight**	**Std. Dev.**
Wage	0.3105	173114.49	0.0844	143677.77
Self-employment	0.0048	31527.05	0.0078	25887.74
Social Security Benefits	0.0000	1623.59	0.0002	8727.14
Pension Benefits	0.0001	32042.49	0.0014	57216.86
IRA	0.0001	5616.02	0.0018	15795.96
Interest	0.0824	45511.97	0.2332	45303.83
Dividends	0.0147	26264.45	0.0509	54203.58
Rent	0.0120	26531.46	0.0048	33706.32
Alimony	0.0000	490.90	0.0000	129.93
Unemployment Compensation	0.0000	1172.24	0.0000	710.36
Total Exemption Group	0.0002	0.6228	0.0000	0.3076
	Head < 65	**Head 65+**		
Variable	**Weight**	**Std. Dev.**	**Weight**	**Std. Dev.**
Wage	0.2080	39635.96	0.0854	16010.98
Self-employment	0.0078	9045.65	0.0029	2797.58
Social Security Benefits	0.0000	588.49	0.0076	5973.07
Pension Benefits	0.0001	7896.22	0.0329	26080.77
IRA	0.0004	1820.08	0.0308	9287.41
Interest	0.1166	10488.84	0.2356	9599.46
Dividends	0.0278	7851.12	0.0137	7148.22
Rent	0.0084	9109.23	0.0623	15885.02
Alimony	0.0002	1937.05	0.0016	2105.35
Unemployment Compensation	0.0001	987.17	0.0000	694.80
Total Exemption Group	0.0004	0.6001	0.0017	0.6589

Source: Urban Institute tabulations of the 2001 Statistics of Income Data.

To validate the tax calculator, we compared the tax generated from the tax calculator with the tax reported on the SOI. We let the tax calculator calculate AGI, total deductions, federal taxable income, and federal income tax. We then compare the calculated values with the SOI values on the target file. In Tables 4–4 and 4–5, we compare AGI, total deductions (itemized or standard), federal taxable income, and federal tax burdens produced by the tax baseline data file with those reported in the 2001 SOI. As the tables show, the estimates produced by the tax calculator are typically within 1 percent of those reported in the 2001 SOI. The exceptions include tax units without high school degrees, taxpayers who file head of household tax returns, and taxpayers who are in the lowest or highest AGI groups. However, even for these subgroups, the differences are relatively small.

5. Using the Tax Baseline Donor File in MINT (Step 4)

The tax baseline, described above, serves as a database of tax-related variables that are missing in MINT, but required for estimating future tax burdens. After creating the tax baseline, the next step was to link it with MINT projections. To do this, we statistically matched MINT with the tax baseline using a second minimum distance function (see Figure 4–1). In this case, the donor file is the tax baseline and the target file is MINT. In order to match MINT with the tax baseline without having to estimate the growth in various income sources over time, we divide all income variables on the tax baseline by the national average wage projected by the Social Security Administration. Thus, rather than matching on income levels, we match on relative incomes – defined as the ratio of income in a given year to the national average wage.

The statistical match selects the donor individual with the minimum distance based on the same equation described above. We obtained weights in the distance function by estimating stepwise OLS regressions of taxable income on wage and salary income, the log of wealth[7], pension benefits, Social Security benefits, housing equity, age of head (continuous variable), Hispanicity of head, number of dependents, and propensity for risk.[8] The regression was run on the tax baseline for each filing status and age group. Again, the weight for each factor is equal to the partial R-squared. The specific values used in the distance function are shown in Table 4–6.

We also added an additional factor to the distance function, which captures the number of times a donor record is used. Although a donor record can still be used more than once, the minimum distance function will select a less used donor record among a number of equally good choices. This approach allows for more variance in the outcomes and ensures a better fit at the tails of the income distribution.

[7] We transform wealth by adding 2 times the average wage before taking the log. This preserves the distribution of low and negative wealth holders and reduces the impact of extreme values.
[8] Risk aversion is calculated using a probit model estimated on the SCF data (Favreault *et. al.* 2004).

Table 4–4. Mean Outcomes Generated by the Tax Calculator Compared with Linked 2001 SOI Values on the Tax Baseline

	AGI		Total Deductions		Federal Taxable Income		Federal Taxes	
	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI
All	$52,388	$52,315	$12,146	$12,323	$37,945	$37,944	$7,431	$7,747
Age of Head								
Under 18	9,987	9,980	5,158	5,154	4,937	4,978	556	499
18 to 24	16,506	16,502	5,469	5,454	8,168	8,092	698	713
25 to 34	39,468	39,434	8,850	9,000	25,660	25,529	3,797	3,989
35 to 44	57,980	57,885	12,897	13,018	40,822	41,132	7,449	7,983
45 to 54	72,381	72,244	15,201	15,473	54,266	54,074	11,508	11,870
55 to 64	61,916	61,798	14,575	15,174	52,372	51,844	11,896	12,027
65 and over	54,322	54,301	14,725	14,717	39,987	40,375	8,701	9,142
Education								
Missing	21,834	21,817	4,554	4,548	14,511	14,822	1,962	1,987
Less Than HS	24,507	24,484	8,149	8,228	12,676	12,670	1,249	1,435
High School	39,796	39,756	10,062	10,220	26,140	26,101	4,090	4,284
College Degree	104,385	104,186	20,364	20,653	86,113	86,216	20,437	21,165
Filing Status								
Head	28,716	28,706	8,351	8,518	15,829	15,701	976	1,368
Joint	81,083	80,933	17,380	17,786	59,140	59,090	12,233	12,717
Single	30,783	30,767	8,000	7,933	23,808	23,909	4,796	4,900
Sex								
Male	62,913	62,818	13,709	13,856	46,560	46,617	9,691	10,089
Female	40,381	40,332	10,364	10,573	28,117	28,049	4,852	5,075
AGI Breakdown								
$0 or less			0	0	0	0	1,864	617
$1 under $10,000			5,941	5,939	208	205	-647	-611
$10,000 under $20,000			6,560	6,577	4,230	4,224	-587	-352
$20,000 under $30,000			7,108	7,163	12,282	12,185	950	1,113
$30,000 under $50,000			8,721	8,815	24,413	24,271	3,281	3,367
$50,000 under $75,000			12,209	12,422	41,598	41,488	6,308	6,400
$75,000 under $100,000			18,013	18,474	59,820	59,797	10,372	10,595
$100,000 under $150,000			24,783	25,976	87,219	86,842	17,821	17,930

(continued)

	AGI		Total Deductions		Federal Taxable Income		Federal Taxes	
	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI
$150,000 under $200,000			32,682	33,768	130,977	130,084	29,786	30,157
$200,000 under $500,000			59,152	62,740	225,797	226,568	58,368	60,833
$500,000 under $1,000,000			99,615	102,758	581,939	582,452	172,571	181,633
Over $1,000,000			145,662	143,429	1,254,139	1,258,791	377,576	395,281
Over $2,000,000			385,143	340,014	2,710,277	2,759,770	802,174	852,936
Over $5,000,000			765,056	692,147	6,019,382	6,098,966	1,799,951	1,912,179
Over $10,000,000			2,216,934	2,336,897	17,999,868	17,890,614	5,093,359	5,368,315

Source: Urban Institute tabulations of the Tax Baseline data.

Table 4–5. Median Outcomes Generated by the Tax Calculator Compared with Linked 2001 SOI Values on the Tax Baseline

	AGI		Total Deductions		Federal Taxable Income		Federal Taxes	
	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI
All	$31,710	$31,710	$7,600	$7,600	$18,280	$18,230	$2,256	$2,306
Age of Head								
Under 18	6,922	6,922	4,550	4,550	0	0	0	0
18 to 24	13,796	13,820	4,550	4,550	4,815	4,723	361	342
25 to 34	29,650	29,640	6,650	6,650	17,150	17,020	2,033	2,059
35 to 44	39,020	39,040	7,600	7,600	23,070	23,230	2,724	2,899
45 to 54	46,230	46,220	7,600	7,600	29,687	29,490	3,995	4,061
55 to 64	36,010	36,010	7,600	7,600	22,631	22,510	3,086	3,094
65 and over	28,220	28,220	9,400	9,400	13,640	13,750	1,919	1,909
Education								
Missing	21,890	21,890	4,550	4,550	14,030	14,440	1,910	1,909
Less Than HS	17,340	17,340	6,650	6,650	4,610	4,612	207	269
High School	29,160	29,160	7,600	7,495	16,073	15,940	1,899	1,961
College Degree	59,630	59,630	9,975	10,050	41,310	41,250	6,264	6,374
Filing Status								
Head	20,580	20,580	6,650	6,650	5,810	6,038	-1,218	-880
Joint	56,509	56,500	9,865	9,970	35,052	35,130	4,417	4,564
Single	21,540	21,540	4,550	4,550	12,890	12,810	1,829	1,792
Sex								
Male	38,590	38,580	7,600	7,600	23,660	23,550	3,035	3,094
Female	25,670	25,670	6,650	6,650	13,123	12,920	1,431	1,481
AGI Breakdown								
$0 or less			0	0	0	0	0	0
$1 under $10,000			4,550	4,550	0	0	-108	0
$10,000 under $20,000			6,650	6,650	3,780	3,786	222	279
$20,000 under $30,000			6,650	6,650	13,000	12,890	1,586	1,594
$30,000 under $50,000			7,600	7,600	24,800	24,750	3,405	3,446
$50,000 under $75,000			10,181	10,300	42,045	42,080	5,965	6,131
$75,000 under $100,000			16,136	16,220	60,471	60,400	10,199	10,415
$100,000 under $150,000			22,957	22,780	87,426	86,920	17,782	17,876

(Continued)

	AGI		Total Deductions		Federal Taxable Income		Federal Taxes	
	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI	Tax Calculator	2001 SOI
$150,000 under $200,000			31,267	31,156	130,436	129,840	29,441	29,913
$200,000 under $500,000			51,127	50,971	209,228	209,288	53,430	54,560
$500,000 under $1,000,000			92,095	87,311	561,700	560,545	165,095	176,589
Over $1,000,000			137,013	128,454	1,209,527	1,231,042	366,019	386,053
Over $2,000,000			350,976	320,778	2,545,550	2,566,214	759,317	803,618
Over $5,000,000			705,354	602,551	5,710,883	5,715,500	1,781,602	1,896,676
Over $10,000,000			2,662,029	3,331,483	20,181,035	19,727,582	5,859,687	6,155,110

Source: Urban Institute tabulations of the Tax Baseline data.

Table 4–6. Weights and Standard Deviations Used in the Distance Function to Statistically Match the Tax Baseline and MINT by Filing Status and Age

	Single < 65		Single 65+	
Variable	**Weight**	**Std. Dev.**	**Weight**	**Std. Dev.**
Wage and Salary Earnings	0.7618	1.3232	0.3882	0.4636
Self-Employment Earnings	0.0100	0.3209	0.0250	0.3298
Log of Wealth	0.0001	0.5429	0.0369	0.7319
Housing Wealth	0.0003	1.7519	0.0008	2.5028
Pensions	0.0032	0.1235	0.0147	0.3237
Social Security	0.0014	0.0486	0.0007	0.1642
Age of Head	0.0003	13.8310	0.0001	6.6758
Hispanic	0.0010	0.2899	0.0000	0.2014
Risk	0.0108	0.1805	0.0036	0.1717
Number of Dependents	0.0001	0.2441	0.0001	0.2129
Number of Times Donor Used	0.0100	1.0000	0.0100	1.0000

	Joint < 65		Joint 65+	
Variable	**Weight**	**Std. Dev.**	**Weight**	**Std. Dev.**
Wage and Salary Earnings	0.8082	3.3336	0.6926	1.5187
Self-Employment Earnings	0.0033	0.5775	0.0056	0.4485
Log of Wealth	0.0001	0.9767	0.0034	1.0187
Housing Wealth	0.0009	2.9005	0.0001	3.3737
Pensions	0.0014	0.1959	0.0132	0.4535
Social Security	0.0004	0.0758	0.0005	0.2640
Age of Head	0.0001	10.4160	0.0056	6.7366
Hispanic	0.0003	0.2968	0.0000	0.2376
Risk	0.0078	0.1823	0.0013	0.2092
Number of Dependents	0.0005	1.1673	0.0001	0.5282
Number of Times Donor Used	0.0100	1.0000	0.0100	1.0000

	Head < 65		Head 65+	
Variable	**Weight**	**Std. Dev.**	**Weight**	**Std. Dev.**
Wage and Salary Earnings	0.5701	1.2562	0.1461	0.3326
Self-Employment Earnings	0.0198	0.2531	0.0043	0.0571
Log of Wealth	0.0025	0.4167	0.0028	0.4842
Housing Wealth	0.0007	1.7148	0.0304	2.9976
Pensions	0.0019	0.0943	0.0001	0.3779
Social Security	0.0009	0.0491	0.0001	0.1534
Age of Head	0.0001	10.4470	0.0080	6.5466
Hispanic	0.0010	0.3418	0.0000	0.2929
Risk	0.0058	0.1794	0.0001	0.1563
Number of Dependents	0.0001	0.9276	0.0036	0.8452
Number of Times Donor Used	0.0100	1.0000	0.0100	1.0000

Source: Urban Institute tabulations of the Tax Baseline Data.

We tailored the distance function to use as much information as the target group can support. In all cases, we restricted the match to individuals of the same filing status (head of household, married, single), age (less than 65 or 65 and older), and state. If no one was in the donor pool, then we expanded the pool by not restricting the match to any particular state. We randomly entered the donor pool to allow for random selection among ties in the distance function. Once the donor with the minimum distance was selected, we assigned the donor's tax baseline data to the target individual.

We perform the statistical match between the tax baseline and MINT for each projection year. This means that each year we selected another donor to supplement the missing tax-related information for the MINT target. For example, in order to get 2010 tax-related information for a 40-year-old in MINT, we look for a 40-year-old in the tax baseline with similar demographic and economic characteristics. Then we simply take the SOI information of the person in the tax baseline and assign it to the person in 2010. To get 2020 tax-related information for the same person, we go back to the tax baseline and look for a 50-year-old with similar characteristics and take his/her SOI information. Since MINT income projections take into account the impact of birth, marriage, health, death, and other life events, year-by-year matching preserves the relationship between the matching and target variables.

Because the taxable income sources in MINT that are imputed are assigned using a statistical matching algorithm that controls for demographic and detailed income information, we do not expect the statistical match to create unreasonable year-to-year variation in the sources or amounts of income, adjustments, and deductions for a given individual. However, to ensure a consistent and reasonable asset mix over time for a given individual, we did two things. First, we statistically matched the tax baseline and MINT using age and MINT projected assets (among other key matching variables). This approach implicitly rebalances portfolios at different ages. For example, at younger ages all individuals will hold a higher share of their assets in stocks than in bonds. At older ages, they will hold a higher share of their assets in bonds than in stocks. Second, we computed an individual-specific error term representing the individual's propensity for risk. This risk aversion measure captures the asset mix that is consistent with the individual's taste for risk. Persons who are risk averse will systematically have safer types of investments than those who are less risk averse. We selected donors with similar ages and individual-specific error terms as the target individual.

6. Estimating Tax Burdens

The statistical match between the tax baseline and MINT produced a data file with all of the projected demographic characteristics and taxable income sources required for estimating future tax burdens. As Figure 4–1 depicts, the final step is to estimate future tax burdens. To do this, however, we need to account for the possibility that the current tax law will change in the future.

7. Assigning Annual Tax Law Parameters (Step 5)

Tax parameters are specified in an Excel spreadsheet. The parameter file includes historic tax parameters from 1988 to 2006 federal and state income tax laws, and prospective changes in tax law to be effective 2007 through 2015. We model future tax law differently for the short-term and long-term projections. For the short-term projections (through 2015), we hold current law tax rates constant and adjust the brackets for projected changes in the consumer price index (CPI). This means that we allow the 2001 tax cuts to expire as scheduled under current law. We hold the Social Security taxation thresholds at their current law values, since these were intentionally not indexed for inflation when enacted in 1983 and 1993 in order to increase over time the share of Social Security benefits subject to tax. We did, however, index parameters of the AMT to price changes beyond the current period, even though these provisions are not currently indexed. Without this indexing, many middle-class taxpayers would end up paying the AMT (Burman, Gale, and Rohaly 2003) and up until now, Congress has temporarily enacted short-term patches that raise AMT exemption levels to prevent this for happening.

For the long-term projections, we indexed exemptions and bracket widths of both the regular income tax and the AMT to wages instead of prices. Since wages are expected to increase faster than prices, indexing to prices would eventually result in a large increase in average federal income tax rates. Indexing to wages avoids real-bracket creep and prevents the ratio of taxes to GDP from rising steadily over time. Maintaining something close to historical average tax burdens in the long run arguably represents a better representation of policymakers' intent than allowing tax burdens to rise substantially. We do, however, continue to hold the Social Security taxation thresholds at their current law values in the long run.

Users can easily simulate alternative assumptions about future tax laws by changing parameters of the model. The calculator includes switches to allow the user to specify alternate treatment of specific elements of the current tax law, including changing the indexing rules for Social Security tax thresholds, indexing the AMT thresholds, indexing tax rates and brackets in the regular income tax, and retaining or allowing to expire provisions enacted in EGTRRA and JGTRRA.

8. Calculate Federal Income Tax (Step 6)

Once we have accounted for changes in future tax law, we calculate state and federal income taxes in MINT annually based on projected annual incomes and demographic characteristics.

III. VALIDATION

We compared MINT income tax projections with both the Urban Institute's Tax Policy Center (TPC) model and DYNASIM model projections by filing type, AGI group, and age. The TPC model is based on the 2001 SOI data, which is matched to the Current Population Survey to generate non-filers and impute detailed demographic characteristics to SOI tax units. DYNASIM uses the same method as MINT for projecting taxes.

The cohort structure of MINT presents a challenge for validating taxes. MINT does not include the full set of tax filers; it is missing individuals born before 1926 and after 2018. The SOI does not include age (other than the age 65 plus or disabled indicator). This makes direct comparisons of MINT with historic SOI statistics difficult.

MINT uses the same tax calculator as is used in the Urban Institute's DYNASIM model. Butrica, Resseger, and Smith (2006) extensively evaluated the DYNASIM tax projections with the historic SOI and Tax Policy Center tax model. This evaluation showed that the tax model produced accurate projections of filing status, adjusted gross income, taxable income, and federal income tax over the historic period 2000 to 2006. Using the same data, we restricted the TPC and DYNASIM data to include only the MINT cohorts (born 1926 to 1972). We then used the cohort restricted data to evaluate the MINT tax projections.

These comparisons show that the MINT tax model and the method of projecting taxable income and income tax units are doing a reasonably good job of capturing both total tax liability and income tax rates for the MINT population. We closely match the number of joint tax filers by AGI group and slightly understate the number of single and head of household tax filers with AGI below $50,000 (see Table 4–7). Within each AGI group, MINT matches the average federal tax liability closely (see Table 4–8). The majority of the tax filers that MINT is missing have lower income, so MINT misses relatively little taxable income.

Table 4–7. Number of Tax Filers in 2006 by Filing Type, Adjusted Gross Income, and Data Source for Tax Unit Heads Born between 1926 and 1972.

		Adjusted Gross Income											
	Total Returns	Breakeven and Loss	0.01 Under 10000	10000 Under 20000	20000 Under 30000	30000 Under 50000	50000 Under 75000	75000 Under 100000	100000 Under 150000	150000 Under 200000	200000 Under 500000	500000 Under 1000000	1000000 and Over
Married Filers													
TPC	45,536,062	457,697	1,390,048	3,187,258	3,966,425	7,464,875	9,646,227	7,462,860	6,727,715	2,311,077	2,304,223	396,150	221,507
DYNASIM	46,188,908	304,603	1,404,699	3,222,248	3,823,902	7,970,029	10,512,583	7,184,606	6,414,287	2,635,698	2,585,350	115,800	15,104
MINT	47,911,207	246,405	1,356,366	2,727,012	3,876,124	7,912,668	11,433,025	8,826,471	6,810,008	2,382,837	1,959,737	243,500	137,054
Single Filers													
TPC	29,254,864	351,335	4,032,336	5,964,622	4,815,524	6,991,902	4,056,976	1,462,686	923,073	304,799	274,172	48,170	29,268
DYNASIM	30,908,405	367,538	3,738,311	5,351,952	4,712,537	7,134,258	5,389,713	2,265,643	1,105,130	460,681	322,225	30,209	30,209
MINT	25,182,255	304,076	2,453,323	3,815,673	3,799,161	6,458,784	5,064,208	1,768,909	791,109	311,498	262,880	45,882	106,753
Head of Household Filers													
TPC	13,015,998	75,990	1,389,429	3,095,251	2,718,322	3,221,380	1,640,944	494,176	254,939	51,351	60,389	9,561	4,265
DYNASIM	9,477,940	80,556	1,090,026	1,762,167	1,709,302	2,288,299	1,543,155	584,032	289,499	67,969	42,795	15,104	5,035
MINT	7,882,395	117,815	886,312	1,380,655	1,427,110	2,203,746	1,274,724	253,360	209,313	22,411	66,170	22,406	18,374

Source: Urban Institute tabulations of Tax Policy Center tax model, DYNASIM model, and MINT5 (Rohaly *et al* 2005).

Table 4–8. Average and Total Federal Tax Liability in 2006 Adjusted Gross Income and Data Source for Tax Unit Heads Born between 1926 and 1972.

	Adjusted Gross Income												
	All Returns	Breakeven and Loss	0.01 Under 10000	10000 Under 20000	20000 Under 30000	30000 Under 50000	50000 Under 75000	75000 Under 100000	100000 Under 150000	150000 Under 200000	200000 Under 500000	500000 Under 1000000	1000000 and Over
Average Tax Liability													
TPC	9,421	-261	-557	-790	152	2,343	5,350	8,951	16,267	28,647	61,483	167,665	737,139
DYNASIM	6,880	-248	-525	-645	131	2,092	5,067	8,667	15,352	27,359	51,384	128,348	276,858
MINT	9,444	-185	-559	-693	208	2,186	5,292	8,549	15,130	26,648	54,280	145,285	716,972
Total Tax Liability (millions)													
TPC	827.2	-0.2	-3.8	-9.7	1.7	41.4	82.1	84.3	128.6	76.4	162.2	76.1	188.0
DYNASIM	595.6	-0.2	-3.3	-6.7	1.3	36.4	88.4	87.0	119.9	86.6	151.6	20.7	13.9
MINT	764.8	-0.1	-2.6	-5.5	1.9	36.2	94.0	92.7	118.2	72.4	124.2	45.3	188.0

Source: Urban Institute tabulations of Tax Policy Center tax model, DYNASIM model, and MINT5.

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CHAPTER 5

PROJECTIONS OF EARNINGS

I. INTRODUCTION

This chapter describes the revised methodology used in MINT5 to predict total and Social Security covered earnings. It also describes the projection results.

MINT5 uses the same earnings splicing method used in MINT3 and MINT4 to project earnings (Toder *et. al*. 2002 and Smith *et. al*. 2005), but with a few minor modifications. These modifications include the following:

1. Improve the imputation for individuals with no match on the Administrative data.
2. Change year-specific donor targets to age-specific donor targets used for alignment in the splicing algorithm.
3. Increase the age at which the regression-based earnings projection takes over from the splicing-based earnings projection from age 50 to age 55.
4. Update the target file used to project the population born between 1973 and 2018.
5. Update the OASI take-up model.
6. Update the beneficiary earnings model.
7. Update the retirement hazard model.

This chapter describes the first four above items. Chapter 6 describes items five and six. Chapter 7 describes item 7. The results presented in this chapter combine all seven elements.

1. Improve the imputation for observations with no match on the Administrative data

MINT uses data from the Survey on Income and Program Participation (SIPP) matched to the Social Security Administration's earnings and benefit data for records with the same Social Security number (SSN). Not all SIPP respondents, however, report a valid SSN. MINT imputes earnings and benefit data for these non-matched respondents. This imputation is done using a hotdeck procedure that selects a donor record that had a valid match with similar characteristics (see Toder *et. al.* 1999).

Many immigrants do not report a valid SSN at the SIPP interview (see Table 5–1). Furthermore, immigrants arriving at older ages have lower match rates than immigrants arriving at younger ages. Match rates are lower in the 1996 panel than the 1990 panel, falling from about 88 percent in 1990 to 80 percent in 1996. Match rates between 1990 and 1996 fall even more for immigrants.

Table 5–1. Administrative Data Match Rate by Demographic Characteristic and SIPP Panel

	SIPP Panel				
	1990	**1991**	**1992**	**1993**	**1996**
All	0.877	0.857	0.848	0.842	0.801
Birth Year					
1926-1930	0.891	0.860	0.861	0.860	0.838
1931-1935	0.883	0.860	0.854	0.843	0.813
1936-1940	0.879	0.860	0.855	0.846	0.812
1941-1945	0.882	0.858	0.847	0.844	0.817
1946-1950	0.891	0.866	0.865	0.858	0.801
1951-1955	0.886	0.864	0.859	0.847	0.823
1956-1960	0.860	0.855	0.839	0.833	0.808
1961-1965	0.860	0.839	0.824	0.823	0.802
1966-1970	.	.	.	.	0.763
1971-1975	.	.	.	.	0.730
Immigration Age					
Native Born	0.884	0.865	0.856	0.850	0.817
0 – 20	0.885	0.870	0.887	0.880	0.803
21 – 30	0.805	0.743	0.802	0.758	0.669
31 – 40	0.706	0.728	0.717	0.677	0.584
41 – 50	0.697	0.699	0.517	0.612	0.505
51 +	0.662	0.439	0.271	0.400	0.361
Race Ethnicity					
Hispanic	0.842	0.802	0.807	0.816	0.703
Asian	0.796	0.781	0.780	0.786	0.712
Education					
Less than High School	0.874	0.854	0.854	0.850	0.799
High School Graduate	0.870	0.850	0.835	0.832	0.792
College Graduate	0.896	0.875	0.878	0.863	0.828

Notes: . indicates birth years not included in the 1990-1993 SIPP panels in MINT.
Match rates are base on unweighted shares of respondents born between 1926 and 1972 matched to the Summary Earnings Record (SER).
Source: Urban Institute tabulations of MINT5.

Nativity and immigration age were not included in the characteristics used for this imputation. Duleep and Dowhan (2002) find that immigrants have steeper earnings profiles than the native born. Failure to control for nativity in this imputation causes immigrants to receive the earnings records of native-born donors, which makes the earnings profiles on average for immigrants too flat. Furthermore, the use of earnings on the SER to assist with the assignment of immigration year (immigrants must have arrived by the time they had SER earnings), combined with the use of native-born donors to impute immigrants' earnings led MINT to overstate the number of early arriving immigrants and to understate the likelihood of emigrating.[1] To correct for these problems, we add immigration age and source region to the list of matching characteristics used in the hotdeck imputation of Administrative earnings and benefit records to SIPP observations with invalid or missing SSNs.

The Detailed Earnings Record (DER) includes a vector of employee contributions to defined contribution pension plans. The original hotdeck algorithm did not include respondent pension type. This caused workers with DC pensions to be matched to donors with deferred contributions and vise versa. We added pension type to the earnings record hotdeck imputation.

The MINT5 Administrative earnings record hotdeck imputation uses the following characteristics to select a donor record:

1. Age
2. Gender
3. Earnings status (0=no earnings during the SIPP panel, 1=earnings in all months of the SIPP Panel, 2=earnings in half of the months of the SIPP panel, 3=earnings in less than half of the months of the SIPP panel)
4. Immigration age (1=native born, 2=immigrate before age 21, 3 =immigrate between ages 21 and 25, 4 =immigrate between ages 26 and 30, 5=immigrate between ages 31 and 35, 6=immigrate between ages 36 and 40, 6 = immigrate between ages 41 and 45, 7=immigrate between ages 46 and 50, 7 = immigrate between ages 51 and 55, 8=immigrate after age 55)
5. Immigrant source region (0=native born, 1=undeveloped, 2=developed[2])
6. Report making a DC contribution on the SIPP
7. Race (1=White, non-Hispanic, 2=White, Hispanic, 3=African American, 4=Other)
8. Education (1=high school dropout, 2=high school graduate, 3=some college, 4=college graduate)
9. Class of worker (1=private or non-profit, 2=government, 3=other employed, 4=nonworker)
10. Mean monthly earnings group (7 categories).

The hotdeck routine randomly selects a donor record with the same attributes. If the donor pool is empty, the elements in the selection criteria are removed in sequence from the last (tenth) value until the first value until a populated donor pool exists. The Administrative earnings and benefits data of the donor record are then assigned to the target record. Adding immigration and nativity as matching criteria improved the imputations of immigration-related variables and deferred pension contributions.

2. Change year-specific donor targets to age-specific donor targets in the splicing algorithm.

The earnings splicing method projects earnings in 5-year segments. In addition to imputing earnings, the splicing imputation also imputes DI beneficiary status and death. The splicing function selects two potential donors that are used to align the projection to 2006

[1] Immigration year reported on the SIPP is a categorical variable that is more aggregated for earlier arriving immigrants than for recently arriving immigrants. MINT uses the first year the respondent has earnings from Administrative earnings record as an indicator of the immigrant's year of arrival.

[2] Regions defined as developed source for the imputation of immigration include Western Europe, Japan, Canada, New Zealand, and Australia.

OCACT disability and mortality prevalence rates. Because both DI and death are low probability events in any year prior to age 55, the splicing algorithm pooled data in five year and five cohort groups to determine prevalence of death and disability. If the first donor group failed to meet the prevalence target, MINT would select enough alternate donors to meet the target. This alignment method is not optimal for hitting age-specific targets. Table 5–2 shows the age for individuals born between 1940 and 1944 for calendar years 2000 to 2004. The age base on this pooling scheme ranges from 56 (1944 cohort in 2000) to 64 (1940 cohort in 2004).

Table 5–2. Age by Birth Year and Calendar Year

			Year		
2	**2000**	**2001**	**2002**	**2003**	**2004**
Birth Year			Age		
1940	60	61	62	63	64
1941	59	60	61	62	63
1942	58	59	60	61	62
1943	57	58	59	60	61
1944	56	57	58	59	60

We modified the pooling scheme to be age-specific instead of year-specific (see Table 5–3). MINT now pools five birth years and five ages for comparing the projections against the target. This change significantly smoothed out the projected disability and mortality hazard rates by age.

Table 5–3. Year by Birth Year and Age

			Age		
	60	**61**	**62**	**63**	**64**
Birth Year			Year		
1940	2000	2001	2002	2003	2004
1941	2001	2002	2003	2004	2005
1942	2002	2003	2004	2005	2006
1943	2003	2004	2005	2006	2007
1944	2004	2005	2006	2007	2008

3. Increase the age at which the regression-based earnings projection takes over from the splicing-based earnings projection from age 50 to age 55.

MINT3 and MINT4 use the splicing method to project earnings through age 49. MINT3 and MINT4 use a fixed-effects regression by gender and education level to project earnings from age 50 until retirement. At SSA's request, MINT5 now uses the splicing method through age 54 and the regression method from age 55 until retirement.

4. Update the target file used to project the population born between 1973 and 2018.

In December 2001, the President's Commission to Strengthen Social Security released its report outlining three alternative models for Social Security reform. Each of the models included voluntary personal accounts as a central feature. In order to analyze the distributional impact of these types of reform, both in the transition years and when fully implemented, it is necessary to have retirement income projections that extend out beyond the base MINT projection period and that include additional birth cohorts.

If personal accounts were applied to earnings beginning in 2007, it would not affect potential benefits at the early entitlement age for the entire population until the 1986 cohort (assuming earnings begin at age 21) reaches age 62 in 2048. Furthermore, it will take a number of years beyond 2048 for the majority of retirees to have been in a personal account for all of their working lives. MINT5 adds cohorts born between 1973 and 2018 and projects retirement income out to 2099 (the year the 2018 cohort turns age 81). By 2099, cohorts born between 1986 and 2018 will have been in the personal retirement account system for their entire working lives – thereby reflecting the reform's full implementation.

MINT4 generated the full set of projections (demographic and income) for individuals born between 1973 and 2017 by statistically matching a synthetic population of those individuals to the 1960 to 1964 MINT cohorts (see Smith *et. al.* 2005). MINT5 continues to use the MINT4 method to generate the income and demographic projections for cohorts born after 1972, but we have made two small changes to the method implemented in MINT4. First, we added one additional cohort. The extended population now includes cohorts born through 2018. Second, we changed the source population target file. MINT4 used March 2003 Current Population Survey (CPS) for individuals born between 1973 and 1983 and Bureau of the Census long-term population projections for individuals born between 1984 and 2017. MINT5 uses a target population generated by the Social Security Administration's Polisim model.

There are two significant advantages to using the Polisim-based targets versus the Census-based targets. First, the Polisim-based targets are consistent with the Social Security Administration's long term population projections. Census and SSA have different long-term population projections, although the differences at the matching age of 38 are small. Second, the Polisim-based targets allow for the inclusion of important demographic characteristics including education and marital status in the statistical match. Census projections include only age, race, and sex.[3] Polisim's projections include age, race, sex, education, marital status, nativity, immigrant age, immigrant source region. The richer set of demographic characteristics allows MINT5 to generate better predictions of earnings and assets for future cohorts along these important dimensions.

Using the Polisim projected population at age 38 of individuals born between 1973 and 2018, we statistically match these target records to MINT donor records born between 1960 and 1964. The statistical match selects the donor individual with the minimum distance from the recipient based on the following form:

$$D_d = \sum_{j=1}^{n} w_j * [(X_{dj} - X_{rj}) / \sigma_j]^2$$

[3] MINT4 used the 1998 Census population projections. These projections included disaggregated numbers by age, sex, race, and nativity. Census updated its population projections in 2005. The 2005 Census projections more closely match the Office of the Actuary 2005 population projections, but the updated Census projections were done in a way that is not consistent with MINT. Specifically, the race categories are not comparable, and they did not include separate targets for immigrants.

where D is the distance, j is the number of measured attributes in the distance function, w is a weight factor, X is a vector of characteristics (e.g., age, sex, race and ethnicity, and foreign born status), σ is the standard deviation of the j^{th} X variable in the dataset, d denotes the characteristics of the donor (from MINT), and r denotes the characteristics of the recipient (from Polisim). We obtained weights in the distance function by estimating a stepwise OLS regression of average early earnings between ages 20 and 38 on the set of available characteristics. The regressions were done separately for men and women. The distance function weight for each factor is equal to the proportion of the variance in average earnings that it explains (the partial R-squared).[4] Table 5–4 shows the parameter estimates, partial R-square, and summary statistics for the 1960-1964 male and female MINT donors that are used to impute the characteristics of the 1973-2018 Polisim target observations.

Table 5–4. OLS Parameter Estimates, Partial R-Square, and Summary Statistics for 1960-1964 Donors

	Parameter Estimate	Standard Error	Partial R-Square	Mean	Standard Deviation
			Males		
Intercept	0.04535	0.08273	N/A	N/A	N/A
Foreign Born	0.16145	0.08180	0.0007	0.14022	0.34726
Developed Source Region	0.15024	0.07506	0.0002	0.88163	0.32308
Immigrant Age	-0.01159	0.00295	0.0237	2.99363	8.09931
Hispanic	-0.04429	0.03469	0.0006	0.13066	0.33707
High School Graduate	0.26051	0.03161	0.0143	0.65445	0.47560
College Graduate	0.76478	0.03590	0.1269	0.23037	0.42112
Married Indicator	0.22767	0.02020	0.0255	0.67084	0.46996
White	0.23700	0.02838	0.0116	0.83588	0.37043
Asian	0.15800	0.06353	0.0012	0.03323	0.17927
Observations	4,393				
Model R-Square	0.2048				

(Continued)

[4] This weighting method uses all matching variables to determine a donor record. In cases where there is not a perfect match, it is much more likely to match along characteristics that are most important in predicting the characteristic of interest.

Table 5–4. (Continued) OLS Parameter Estimates, Partial R-Square, and Summary Statistics for 1960-1964 Donors

	Parameter Estimate	Standard Error	Partial R-Square	Mean	Standard Deviation
			Females		
Intercept	0.11909	0.04475	N/A	N/A	N/A
Foreign Born	0.09846	0.04305	0.0007	0.13256	0.33914
Developed Source Region	0.02988	0.04191	0.0001	0.89255	0.30971
Immigrant Age	-0.00881	0.00167	0.0175	2.83162	8.01450
Hispanic	-0.02495	0.01989	0.0004	0.12099	0.32615
High School Graduate	0.24242	0.01845	0.0442	0.65779	0.47450
College Graduate	0.56312	0.02076	0.1376	0.23302	0.42280
White	0.08811	0.01406	0.0066	0.79974	0.40024
Observations	4,579				
Model R-Square	0.2071				

Source: Urban Institute estimates from 1960-1964 cohorts of MINT5.

Notes: Dependent variable is the average wage-indexed earnings from age 20 to 38. Mean of the dependent variable is 0.86 for males and 0.49 for females.

Earnings are expressed as a percent of the average wage.

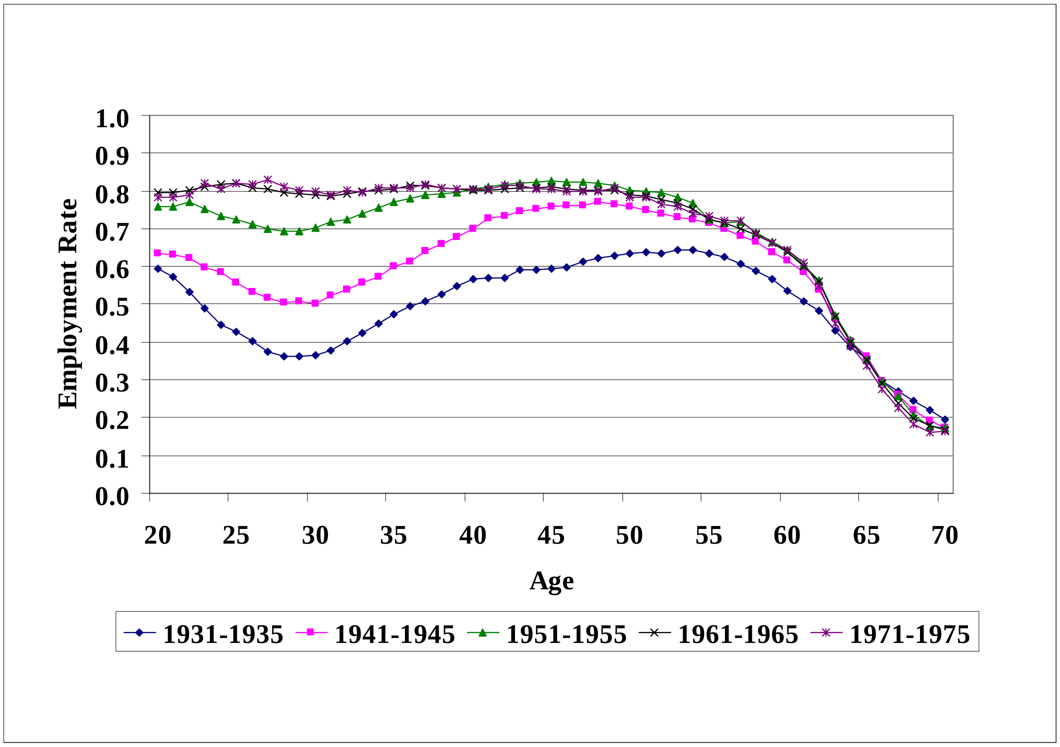
II. RESULTS

1. Employment

Figure 5–1 shows female employment rates by age and birth year for selected birth years from 1931 to 1975. These employment rates are the share of US resident surviving female population with positive earnings.[5] The pattern of female employment has changed markedly over time. Women born in the early 1930s worked at much lower rates than women born in the 1970s and the dip in employment rates during their child-bearing years has all but disappeared. But MINT5 projects a decline in employment rates at older ages for women born in the 1970s compared with women born in the 1930s. This decline occurs despite the scheduled increase in Social Security normal retirement age.

[5] This is different from a standard measure of employment rates that include individuals actively looking for work. MINT includes only surviving, non-institutionalized, US residents. Table A5-1 compares the MINT population by age and year with OCACT 2007 projections. MINT is within about one percent of the projected OCACT population in each age and year, though the MINT share falls relative to OCACT at older ages as the institutionalized and emigrant population become a larger share of the Social Security Area population.

Figure 5–1. Female Employment Rates by Age and Birth Year



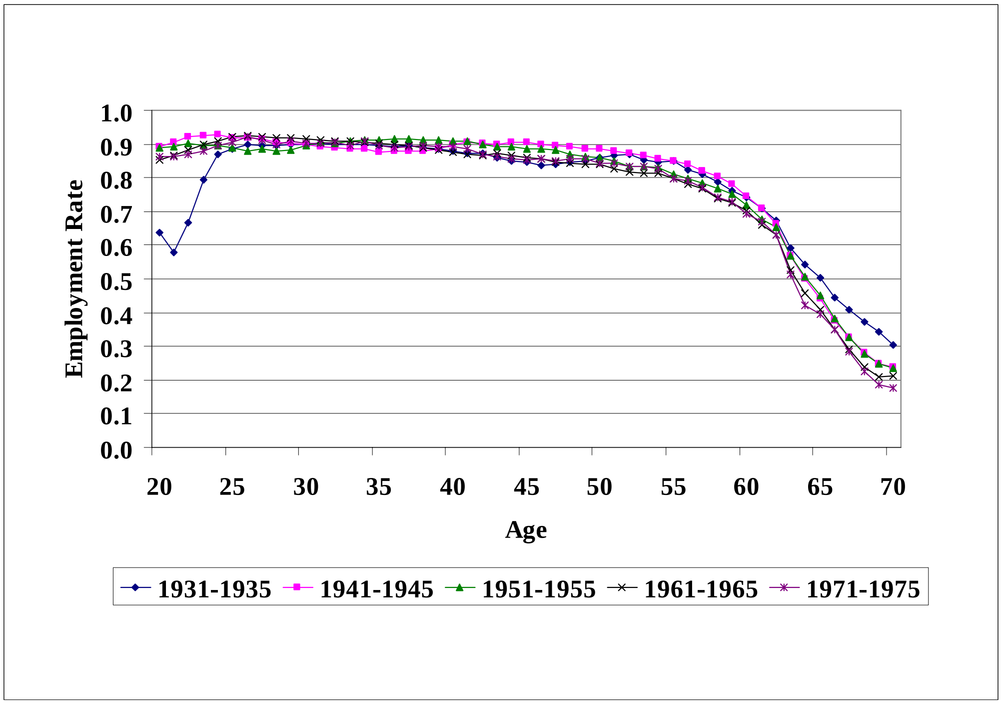
Source: Urban Institute tabulations of MINT5. Values for Figure 5–1 are shown in appendix Table A5–2.

Male employment rates (Figure 5–2) have not changed as much as female employment rates over time, but male employment rates have a few notable changes. First, historic Social Security coverage rates increased dramatically between 1949 and 1950. Coverage rates among civilian workers increased from 60.2 percent in 1949 to 82.5 percent in 1950 (U.S. House of Representatives 1994). The low employment rates before age 25 for men born between 1931 and 1935 reflect low coverage rates rather than low employment rates. Second, employment rates at older ages have fallen over time. For example, employment rates at age 55 are projected to fall from 85 percent to 76 percent from men born between 1931 and 1935 to men born between 1966 and 1970. The differences are even greater at older ages. There are a number of factors that influence these trends, including changes in pension coverage and wealth, changes in Social Security coverage, and changes in Social Security disability eligibility.

2. Earnings

The earnings in MINT before 1982 come from the Summary Earnings Record (SER). These earnings include only Social Security covered earnings up to the Social Security taxable maximum. The taxable maximum increased relative to the average wage from about one times the average wage in 1965 to 2.55 times the average wage in 1994. The taxable maximum is now indexed to wage growth, but men in earlier cohorts were more likely than men in later cohorts to have capped earnings. To facilitate comparisons of earnings across cohorts, we adjusted capped earnings up to 2.46 times the average wage for workers with capped earnings. This adjustment

Figure 5–2. Male Employment Rates by Age and Birth Year



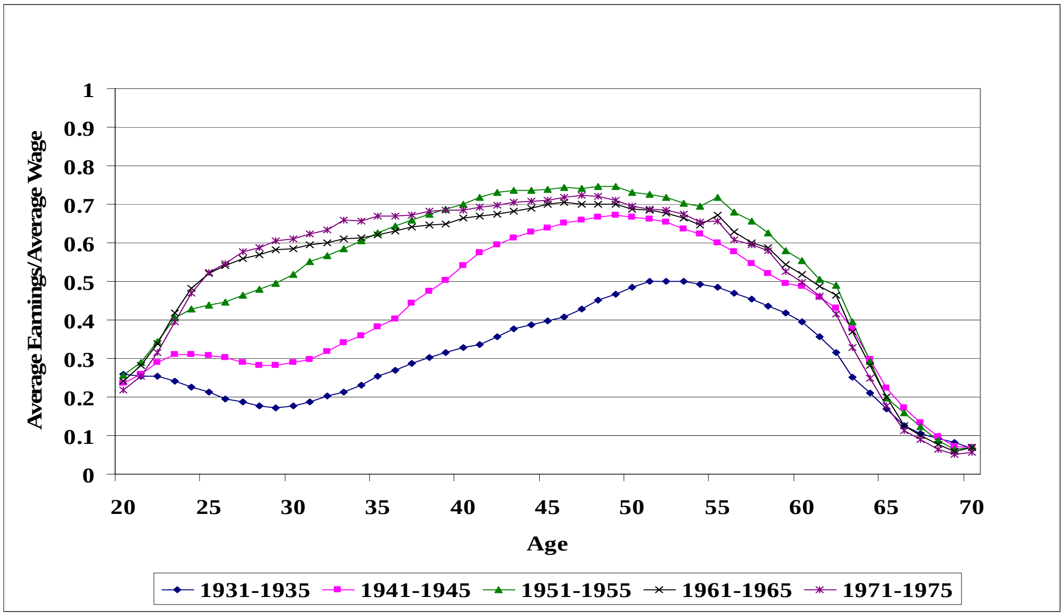
Source: Urban Institute tabulations of MINT5. Values for Figure 5–2 are shown in appendix Table A5–3.

uses information about the pattern of quarterly earnings to project earnings above the cap (see Toder et al. 2002). For example, we would project higher earnings for a worker exceeding the cap in the first quarter than for a worker exceeding the cap in the third quarter. In all cases, the adjusted earnings are capped at 2.46 times the average wage. We call these adjusted earnings "less censored."

Figures 5–3 and 5–4 show average "less censored" earnings relative to the average wage by age and cohort for men and women, respectively. The patterns for men and women are substantially different. Average relative female earnings (including zeros) rise with age through about age 50 and then fall. Women in later cohorts have substantially higher relative earnings than do women in earlier cohorts, and the dip in relative earnings during the child bearing years has all but disappeared. While women's earnings have been rising, men's earnings have fallen. Younger cohorts generally have lower relative earnings than older cohorts, in large measure because of the rapid progress of women in closing the earnings gap with men, a trend which in turn must depress the mean earnings of men relative to the economy-wide average wage.

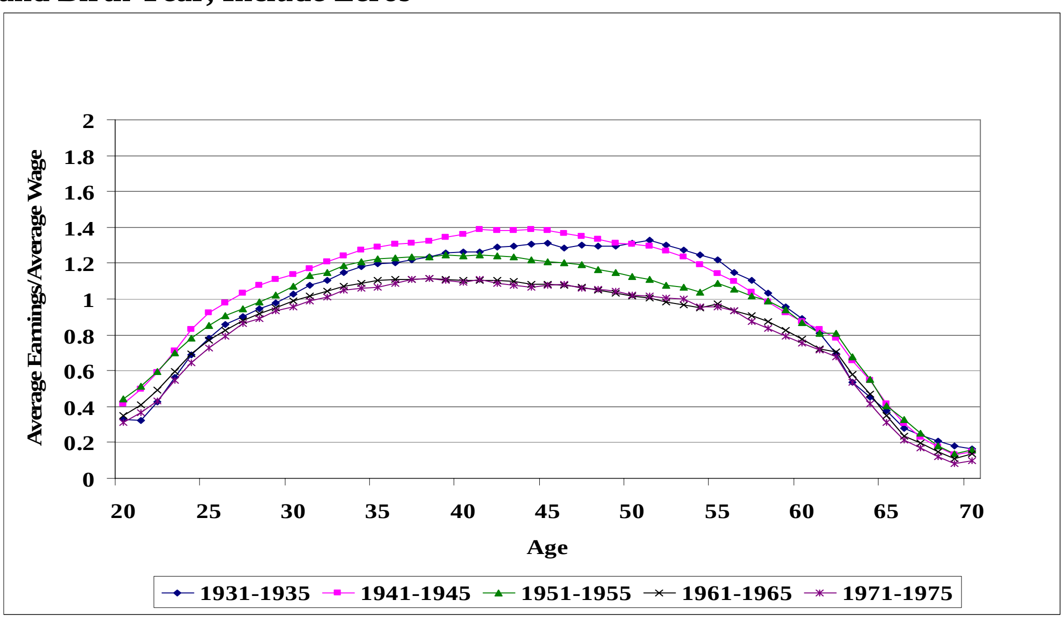
Figures 5–5 and 5–6 show average "less censored" earnings relative to the average wage of workers (exclude nonworkers) by age and cohort for men and women, respectively. The patterns are similar to those including non-workers shown in Figures 5–3 and 5–4. Excluding the non-workers increases average earnings. The increase is larger for women than for men due to women's lower employment rates. The decline in relative earnings at older ages is not just a function of lower employment rates at older ages. Older worker also have lower relative earnings than younger workers.

Figure 5–3. Female Average Less Censored Earnings/Average Wage by Age and Birth Year, Include Zeros



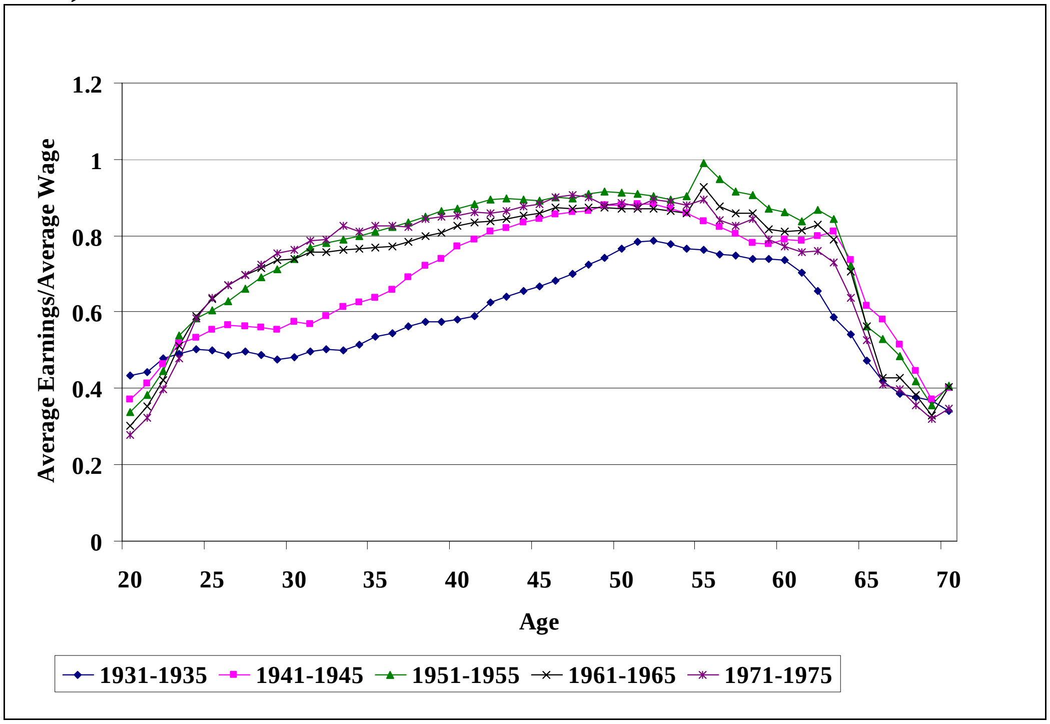
Source: Urban Institute tabulations of MINT5. Values for Figure 5–3 are shown in appendix Table A5–4.

Figure 5–4. Male Average Less Censored Earnings/Average Wage by Age and Birth Year, Include Zeros



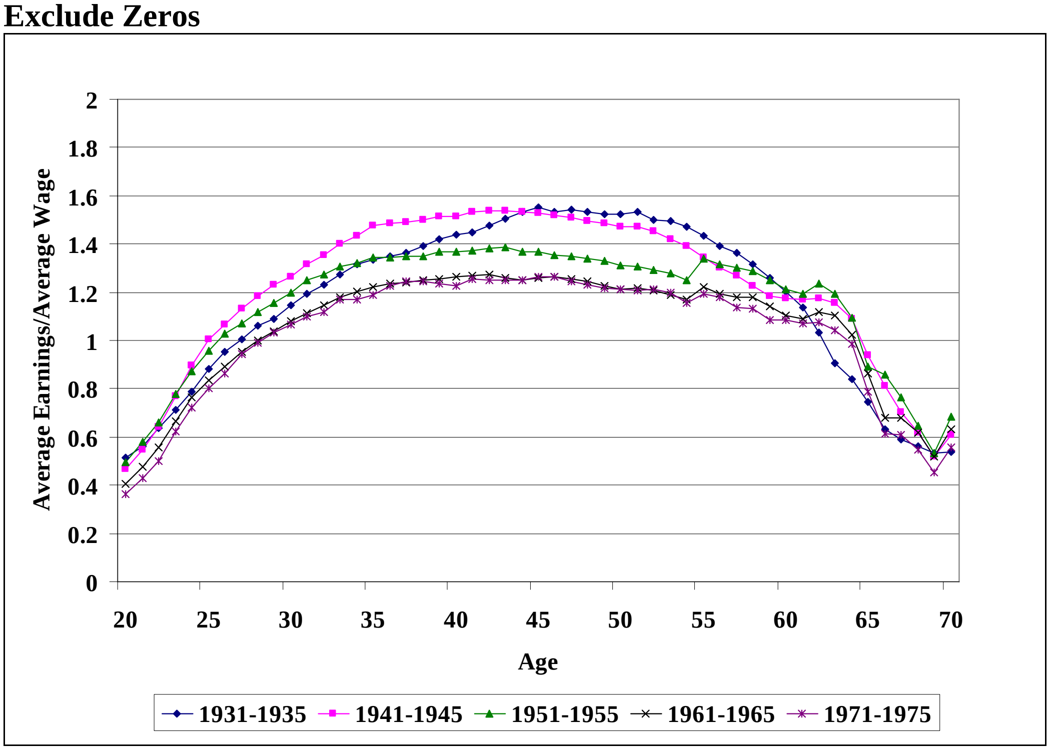
Source: Urban Institute tabulations of MINT5. Values for Figure 5–4 are shown in appendix Table A5–5.

Figure 5–5. Female Average Less Censored Earnings/Average Wage by Age and Birth Year, Exclude Zeros



Source: Urban Institute tabulations of MINT5. Values for Figure 5–5 are shown in appendix Table A5–6.

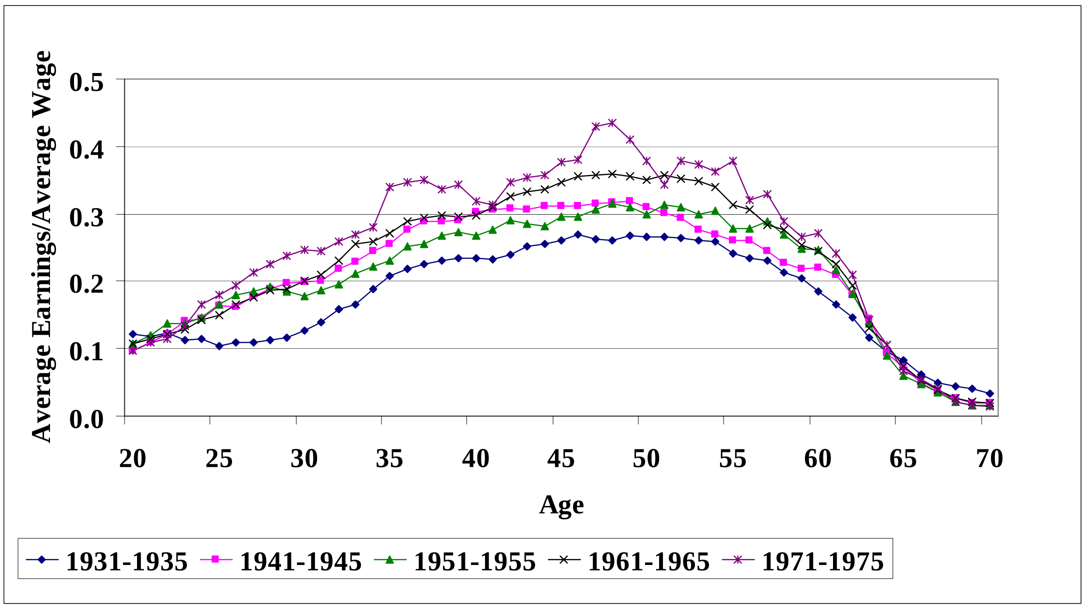
Figure 5–6. Male Average Less Censored Earnings/Average Wage by Age and Birth Year, Exclude Zeros



Source: Urban Institute tabulations of MINT5. Values for Figure 5–6 are shown in appendix Table A5–7.

Projected average less censored earnings for both men and women show a slight discontinuity between ages 54 and 55. This is the age in which the MINT switches from the splicing-based earnings projections to the regression-based earnings projections. The discontinuity is larger for college-educated workers than for lesser-educated workers (Figures 5–7 to 5–12).[6] For men and women born between 1951 and 1955, average earnings is about 9 percent higher at age 55 than at age 54. MINT3 included smoothing factors to adjust for the seam. These factors need to be updated as a result of the shift from age 50 to age 54 in the regression starting age. We recommend that SSA smooth the earnings between the splicing-based and regression-based earnings in future versions of MINT.

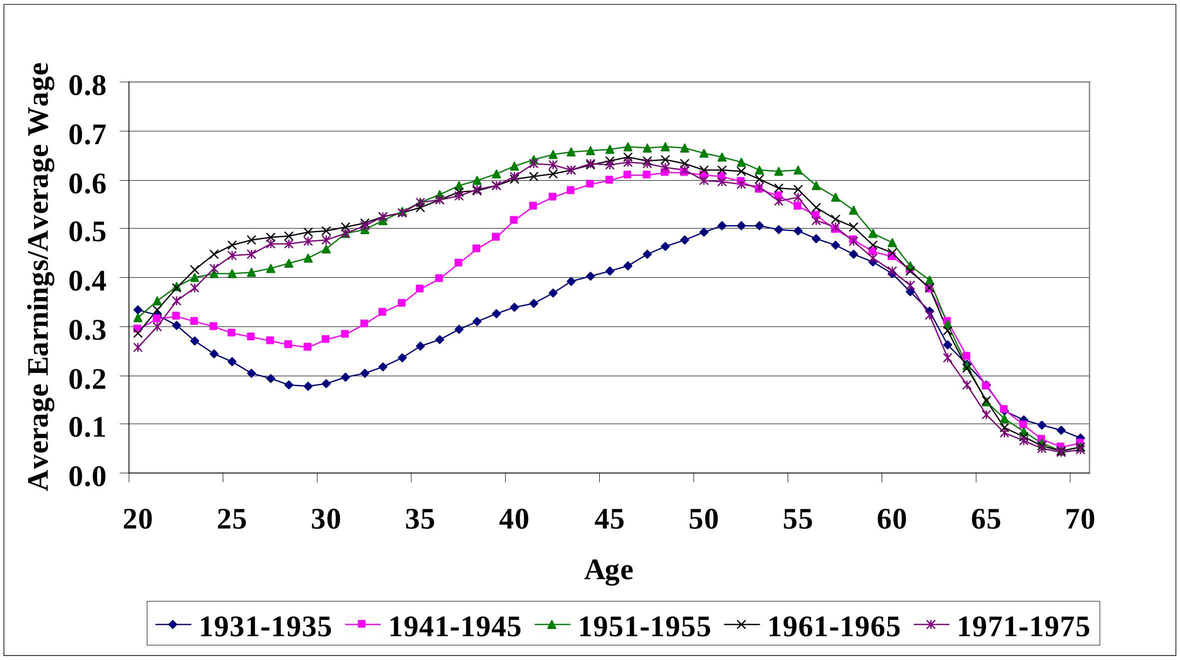
Figure 5–7. Average Less Censored Earnings/Average Wage by Age and Birth Year, Female High School Dropouts, Include Zeros



Source: Urban Institute tabulations of MINT5. Values for Figure 5–7 are shown in appendix Table A5–8.

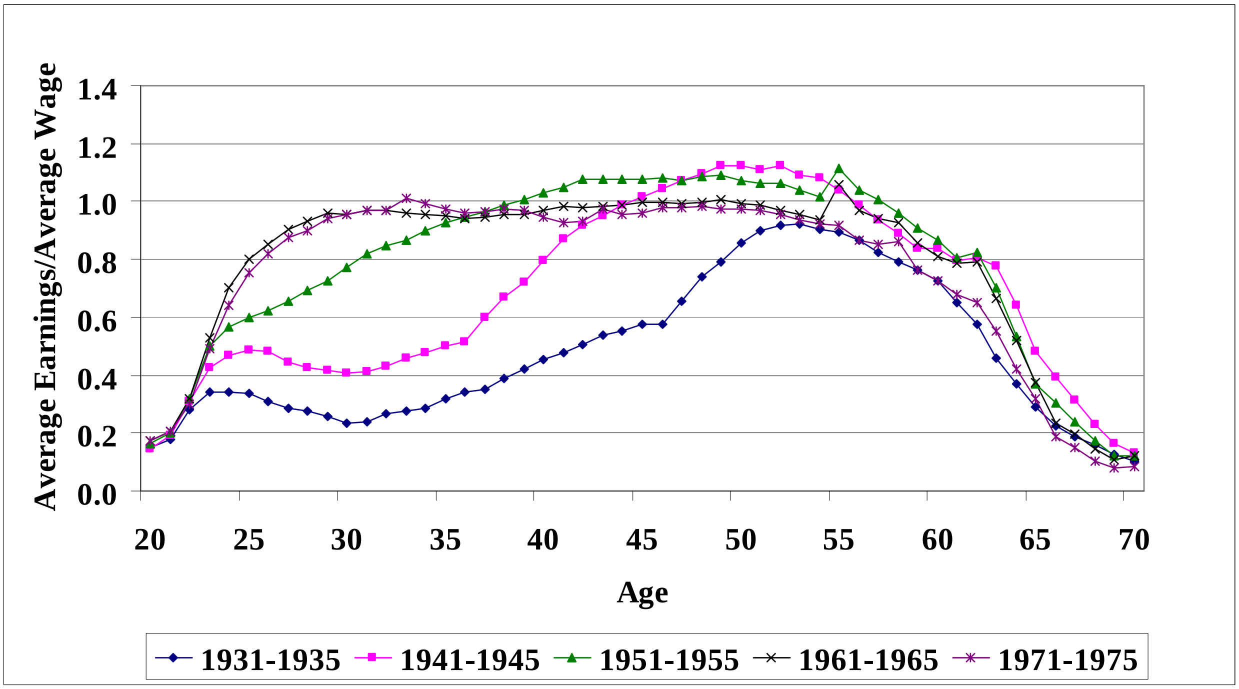
[6] Respondents for the 1966 to 1972 cohorts come solely from the 1996 SIPP panel. Earlier cohorts include pooled respondents from the 1990 to 1996 SIPP panels. Projections for the 1966 to 1972 cohorts are noisy in small subgroups reflecting the smaller sample size for these cohorts.

Figure 5–8. Average Less Censored Earnings/Average Wage by Age and Birth Year, Female High School Graduates, Include Zeros



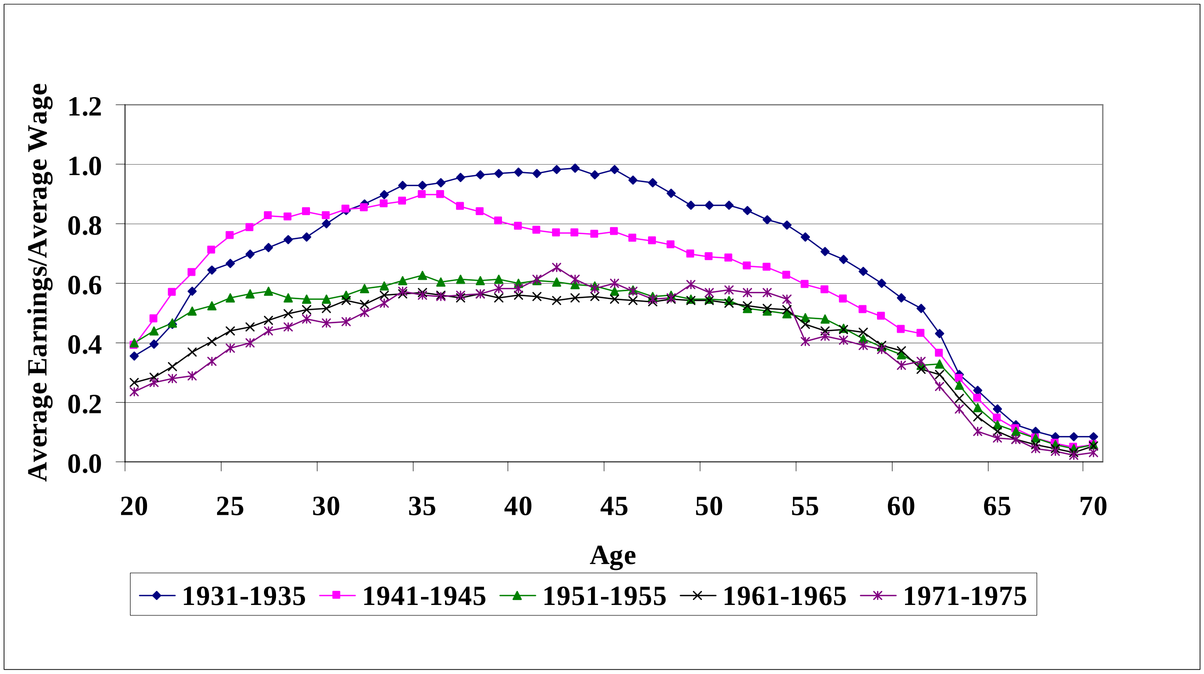
Source: Urban Institute tabulations of MINT5. Values for Figure 5–8 are shown in appendix Table A5–9.

Figure 5–9. Average Less Censored Earnings/Average Wage by Age and Birth Year, Female College Graduates, Include Zeros



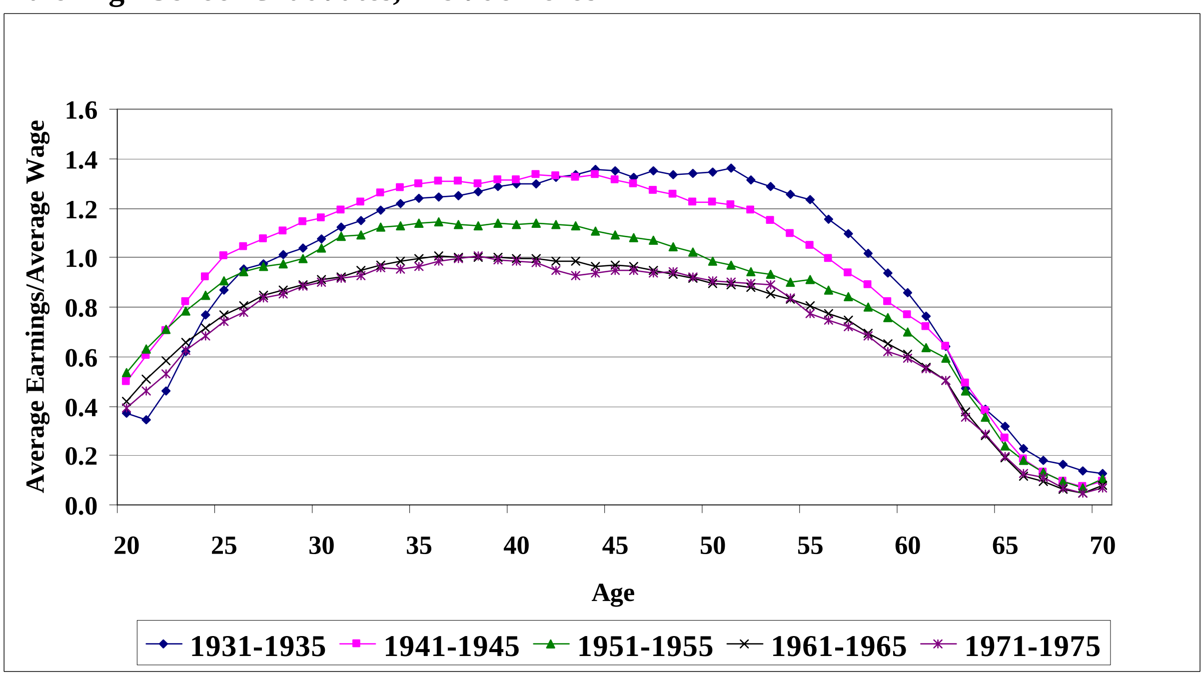
Source: Urban Institute tabulations of MINT5. Values for Figure 5–9 are shown in appendix Table A5–10.

Figure 5–10. Average Less Censored Earnings/Average Wage by Age and Birth Year, Male High School Dropouts, Include Zeros



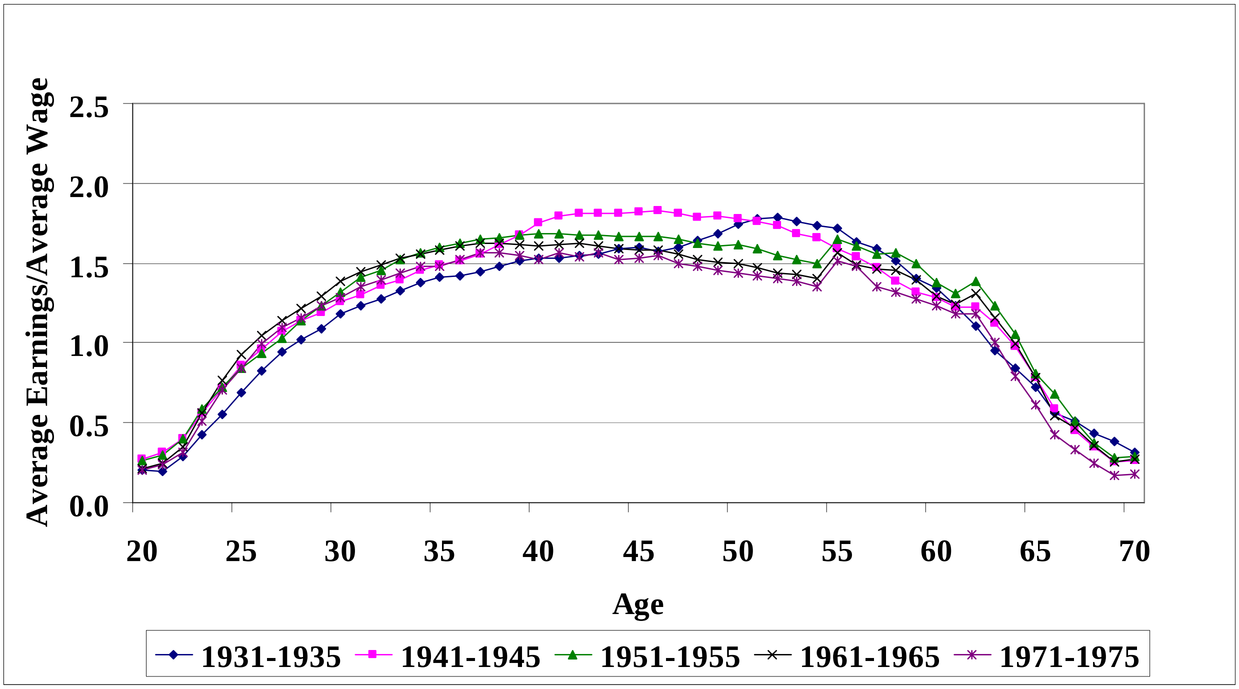
Source: Urban Institute tabulations of MINT5. Values for Figure 5–10 are shown in appendix Table A5–11.

Figure 5–11. Average Less Censored Earnings/Average Wage by Age and Birth Year, Male High School Graduates, Include Zeros



Source: Urban Institute tabulations of MINT5. Values for Figure 5–11 are shown in appendix Table A5–12.

Figure 5–12. Average Less Censored Earnings/Average Wage by Age and Birth Year, Male College Graduates, Include Zeros



Source: Urban Institute tabulations of MINT5. Values for Figure 5–12 are shown in appendix Table A5–13.

3. Average Indexed Earnings

Table 5–5 shows the trend in the distribution of Average Indexed Earnings (AIE) at age 62 across successive birth cohorts for women and men. AIE is the average of the top 35 years of wage-adjusted Social Security covered earnings up to the Social Security taxable maximum from age 16 to 62.[7] These results are based on surviving, non-institutionalized, US residents at age 62. The table also shows the ratio of the 90th percentile to the 20th percentile AIE and the ratio of the 90th percentile to the median AIE for both men and women

Female AIEs rise for women born between 1926 and 1960 all along the distribution. Median AIE rises from 0.2 times the average wage for 62-year-old women born between 1926 and 1930 to 0.56 times the average wage for women born between 1956 and 1960. Median AIEs dip to 0.52 times the average wage for women born between 1966 and 1970 and then rise again to 0.58 times the average wage for women born in the 1980s and 1990s.

[7] The reported AIE differs from the Social Security Average Indexed Monthly Earnings (AIME) in its treatment of disabled workers. The denominator in the AIME formula for disabled is based on the age of disability and is lower than the 35 years used for non-disabled workers. Social Security benefits are calculated using AIME. AIMEs are also updated for individuals who work past age 62. We use the AIE measure to facilitate comparisons between cohorts with different disability prevalence rates. The earnings data begin in 1951. Earnings records for cohorts born in 1926 begin at age 25.

Table 5–5. Percentile Distribution and Ratio of 90th Percentile to 20th Percentile and 90th Percentile to Median of Average Indexed Social Security Covered Earnings at Age 62 Among Surviving, US. Residents by Birth Year and Sex

Percentile/ Ratio	Birth Year 1926 1930	1931 1935	1936 1940	1941 1945	1946 1950	1951 1955	1956 1960	1961 1965	1966 1970	1971 1975	1976 1980	1981 1985	1986 1990	1991 1995	1996 2000	2001 2005	2006 2010	2011 2015	2016 2020
Female																			
10	0.000	0.020	0.030	0.040	0.060	0.090	0.090	0.100	0.100	0.090	0.090	0.100	0.100	0.100	0.090	0.090	0.100	0.090	0.090
20	0.030	0.060	0.090	0.110	0.160	0.180	0.200	0.200	0.220	0.200	0.190	0.210	0.220	0.210	0.210	0.210	0.210	0.210	0.210
30	0.070	0.120	0.160	0.190	0.260	0.290	0.310	0.320	0.310	0.320	0.310	0.330	0.330	0.320	0.320	0.310	0.320	0.310	0.320
40	0.130	0.190	0.240	0.290	0.380	0.410	0.430	0.420	0.420	0.440	0.420	0.450	0.450	0.450	0.450	0.430	0.450	0.440	0.440
50	0.200	0.270	0.340	0.400	0.510	0.530	0.560	0.540	0.520	0.570	0.570	0.580	0.580	0.580	0.580	0.570	0.570	0.570	0.570
60	0.300	0.380	0.460	0.520	0.660	0.670	0.700	0.680	0.650	0.690	0.690	0.700	0.710	0.700	0.700	0.700	0.690	0.690	0.690
70	0.430	0.490	0.610	0.680	0.840	0.850	0.860	0.830	0.800	0.830	0.870	0.880	0.880	0.870	0.870	0.870	0.860	0.860	0.870
80	0.570	0.650	0.790	0.870	1.050	1.070	1.060	1.030	1.000	1.050	1.090	1.120	1.110	1.090	1.100	1.080	1.080	1.070	1.080
90	0.790	0.920	1.050	1.170	1.380	1.410	1.400	1.370	1.360	1.380	1.420	1.430	1.430	1.430	1.430	1.420	1.400	1.410	1.390
100	1.720	1.900	2.050	2.250	2.370	2.430	2.440	2.450	2.430	2.390	2.390	2.390	2.390	2.390	2.390	2.390	2.390	2.390	2.390
90/20	26.33	15.33	11.67	10.64	8.625	7.833	7.000	6.850	6.182	6.900	7.474	6.810	6.500	6.810	6.810	6.762	6.667	6.714	6.619
90/50	3.950	3.407	3.088	2.925	2.706	2.660	2.500	2.537	2.615	2.421	2.491	2.466	2.466	2.466	2.466	2.491	2.456	2.474	2.439
Male																			
10	0.200	0.220	0.240	0.230	0.230	0.220	0.250	0.200	0.210	0.220	0.240	0.260	0.260	0.230	0.230	0.220	0.240	0.220	0.210
20	0.480	0.510	0.540	0.530	0.490	0.460	0.460	0.420	0.420	0.420	0.450	0.490	0.460	0.450	0.450	0.440	0.450	0.450	0.450
30	0.730	0.770	0.810	0.790	0.750	0.680	0.660	0.620	0.620	0.630	0.630	0.670	0.660	0.650	0.660	0.650	0.670	0.670	0.640
40	0.930	0.960	1.000	1.000	0.950	0.890	0.840	0.790	0.780	0.780	0.800	0.840	0.840	0.830	0.830	0.830	0.840	0.830	0.820
50	1.090	1.130	1.170	1.210	1.160	1.080	1.000	0.960	0.930	0.950	0.970	1.030	1.020	1.020	1.020	0.990	1.030	1.020	0.990
60	1.220	1.280	1.330	1.400	1.360	1.280	1.200	1.140	1.110	1.120	1.180	1.230	1.220	1.200	1.210	1.180	1.230	1.230	1.190
70	1.340	1.420	1.490	1.590	1.590	1.500	1.420	1.350	1.320	1.350	1.410	1.430	1.430	1.430	1.430	1.410	1.420	1.430	1.420
80	1.450	1.570	1.660	1.780	1.830	1.770	1.710	1.630	1.580	1.600	1.660	1.670	1.670	1.660	1.650	1.650	1.650	1.650	1.640
90	1.570	1.710	1.870	2.010	2.100	2.100	2.060	2.020	1.910	2.020	2.100	2.100	2.110	2.110	2.100	2.080	2.080	2.090	2.100
100	1.740	1.920	2.090	2.250	2.370	2.430	2.440	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450
90/20	3.271	3.353	3.463	3.792	4.286	4.565	4.478	4.810	4.548	4.810	4.667	4.286	4.587	4.689	4.667	4.727	4.622	4.644	4.667
90/50	1.440	1.513	1.598	1.661	1.810	1.944	2.060	2.104	2.054	2.126	2.165	2.039	2.069	2.069	2.059	2.101	2.019	2.049	2.121

Source: Urban Institute tabulations of MINT5.
Average indexed earnings is the average of the top 35-years of Social Security covered earnings from age 16 to 62 (limited to years after 1950). This measure differs from the Social Security AIME measure in that it uses the same number of years in the denominator for disabled as for non-disabled.

Female AIEs are projected to become much more evenly distributed between cohorts born between 1926 and 1930 and cohorts born between 1956 and 1960, as measured by the ratio of the 90th percentile to the 20th percentile and the 90th percentile to the median. The 90/20 ratio falls considerably more than the 90/50 ratio, largely because of increases in female AIEs at the lower end of the earnings distribution.

AIEs also rise for men born between the 1926 and 1945 cohorts throughout the earnings distribution. Some of the increase in men's AIEs is due to an increase in Social Security coverage and some is due to the increase in the Social Security taxable maximum over time. AIEs fall for men born after 1945, except for men in the top 10 percent of the earnings distribution whose AIEs continue to rise. Because Social Security covered earnings are capped at the Social Security taxable maximum and this maximum is now set at 2.46 times the average wage, the highest possible maximum AIE is 2.46 times the average wage.[8] Only the top one percent of workers achieves this maximum AIE in MINT.

Male AIEs are projected to become increasing more unevenly distributed between cohorts born between 1926 and 1975. The ratio of the 90th percentile to the 20th percentile rises from 3.27 for men born between 1926 and 1930 to 4.8 for men born between 1961 and 1965. Even though the AIE in the 90th percentile falls for men born between 1945 and 1965, AIE in the 20th percentile falls even more.

Table 5–6 shows the distribution of average indexed total earnings at age 62 across successive birth cohorts for women and men. These earnings include both covered and uncovered earnings and earnings above and below the taxable maximum.[9] Average indexed total earnings are higher than average indexed covered earnings, but the differences are not uniform across the distribution. Differences are larger at the bottom and top of the distribution than at the middle of the distribution. One of the reasons people have low Social Security covered earnings is that they work in uncovered jobs. The 20th percentile average indexed **total** earnings is about 30 percent higher than the 20th percentile average indexed **covered** earnings for men born between 1931 and 1935. The difference is smaller for men in later cohorts reflecting increases in Social Security coverage rates over time. Differences are larger at the top of the distribution because these workers have more earnings over the Social Security taxable maximum. Differences between total and covered earnings at the top of the distribution diminish over time with the increase in the taxable maximum. Even with the increase in the taxable maximum, high-income workers continue to have earnings that exceed the taxable maximum, so differences between total and covered earnings remain large at the top of the distribution. For example, median indexed total earnings are 12 percent higher than median indexed covered earnings for men born between 1926 and 1930. They are only 4 percent higher for men born between 1966

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[8] The taxable maximum relative to the average wage is indexed to the average wage growth relative to average wages in 1992. The specific value is rounded to the nearest $300 nominal dollars, so the taxable maximum relative to the average wage is not exactly 2.46 each year.

[9] The values are not entirely comparable across cohorts, because earnings before 1982 are limited to "less censored" earnings. Earnings after 1981 are total earnings and include earnings above the 2.46 cap. Workers in later cohorts have fewer years of censored data compared to workers in earlier cohorts.

Table 5–6. Percentile Distribution and Ratio of 90th Percentile to 20th Percentile and 90th Percentile to Median of Average Indexed Total Earnings at Age 62 Among Surviving, US. Residents by Birth Year and Sex

Percentile/ Ratio	Birth Year																		
	1926 1930	1931 1935	1936 1940	1941 1945	1946 1950	1951 1955	1956 1960	1961 1965	1966 1970	1971 1975	1976 1980	1981 1985	1986 1990	1991 1995	1996 2000	2001 2005	2006 2010	2011 2015	2016 2020
										Female									
10	0.000	0.020	0.040	0.050	0.080	0.110	0.100	0.110	0.110	0.100	0.090	0.110	0.110	0.110	0.100	0.100	0.100	0.100	0.100
20	0.030	0.070	0.100	0.140	0.190	0.220	0.230	0.230	0.230	0.230	0.230	0.240	0.240	0.240	0.240	0.230	0.240	0.230	0.230
30	0.080	0.130	0.190	0.230	0.310	0.340	0.350	0.350	0.330	0.350	0.340	0.360	0.360	0.360	0.350	0.340	0.360	0.350	0.350
40	0.140	0.220	0.280	0.340	0.440	0.460	0.470	0.450	0.440	0.480	0.470	0.490	0.500	0.490	0.490	0.480	0.490	0.480	0.490
50	0.230	0.310	0.390	0.460	0.580	0.600	0.610	0.590	0.550	0.600	0.600	0.610	0.620	0.610	0.610	0.610	0.610	0.600	0.600
60	0.320	0.420	0.510	0.590	0.730	0.740	0.750	0.720	0.680	0.730	0.730	0.740	0.750	0.750	0.740	0.730	0.730	0.730	0.730
70	0.450	0.530	0.650	0.750	0.910	0.920	0.900	0.880	0.840	0.890	0.910	0.940	0.940	0.930	0.930	0.920	0.910	0.910	0.920
80	0.590	0.690	0.830	0.930	1.130	1.140	1.120	1.080	1.030	1.110	1.160	1.180	1.160	1.160	1.160	1.140	1.140	1.140	1.140
90	0.810	0.940	1.070	1.250	1.460	1.500	1.490	1.450	1.430	1.490	1.520	1.540	1.540	1.520	1.520	1.510	1.500	1.510	1.510
98	1.320	1.420	1.640	1.890	2.190	2.360	2.510	2.480	2.610	2.460	2.440	2.410	2.400	2.350	2.350	2.400	2.370	2.340	2.340
90/20	27.00	13.43	10.70	8.929	7.684	6.818	6.478	6.304	6.217	6.478	6.609	6.417	6.417	6.333	6.333	6.565	6.250	6.565	6.565
90/50	3.522	3.032	2.744	2.717	2.517	2.500	2.443	2.458	2.600	2.483	2.533	2.525	2.484	2.492	2.492	2.475	2.459	2.517	2.517
										Male									
10	0.310	0.390	0.420	0.370	0.340	0.290	0.280	0.220	0.230	0.230	0.260	0.270	0.260	0.240	0.240	0.230	0.260	0.240	0.220
20	0.580	0.660	0.720	0.700	0.660	0.570	0.520	0.450	0.430	0.440	0.490	0.520	0.500	0.480	0.490	0.460	0.490	0.490	0.470
30	0.820	0.890	0.940	0.940	0.900	0.790	0.730	0.670	0.650	0.650	0.670	0.700	0.700	0.690	0.690	0.690	0.710	0.700	0.680
40	1.030	1.080	1.110	1.140	1.100	0.990	0.910	0.840	0.820	0.820	0.840	0.880	0.870	0.860	0.860	0.850	0.870	0.870	0.850
50	1.230	1.260	1.270	1.330	1.290	1.190	1.080	1.010	0.970	0.990	1.030	1.080	1.060	1.060	1.060	1.050	1.080	1.060	1.040
60	1.410	1.440	1.460	1.530	1.510	1.390	1.280	1.220	1.150	1.180	1.240	1.280	1.280	1.280	1.280	1.270	1.290	1.300	1.280
70	1.580	1.630	1.660	1.740	1.740	1.630	1.530	1.440	1.380	1.410	1.490	1.550	1.550	1.530	1.530	1.510	1.530	1.530	1.510
80	1.790	1.840	1.910	2.010	2.040	1.970	1.880	1.820	1.720	1.750	1.860	1.880	1.880	1.870	1.840	1.830	1.840	1.840	1.830
90	2.060	2.170	2.320	2.580	2.610	2.620	2.510	2.500	2.310	2.490	2.560	2.590	2.600	2.600	2.560	2.500	2.540	2.560	2.570
98	2.730	3.220	4.060	4.480	4.660	4.930	4.930	5.030	4.520	5.080	4.800	4.950	4.860	4.790	4.770	4.710	4.770	4.720	4.640
90/20	3.552	3.288	3.222	3.686	3.955	4.596	4.827	5.556	5.372	5.659	5.224	4.981	5.200	5.417	5.224	5.435	5.184	5.224	5.468
90/50	1.675	1.722	1.827	1.940	2.023	2.202	2.324	2.475	2.381	2.515	2.485	2.398	2.453	2.453	2.415	2.381	2.352	2.415	2.471

Source: Urban Institute tabulations of MINT5.
Average indexed total earnings is the average of the top 35-years of total earnings from age 16 to 62 (limited to years after 1950).

and 1970. At the 90th percentile, total indexed earnings are 27 percent higher than covered earnings for men born between 1931 and 1935, and 21 percent higher for men born between 1966 and 1970.

4. Discussion

It is important to consider the differences in projection methods between the method used for cohorts born between 1926 and 1972 and and the method for cohorts born between 1973 and 2018 because this substantially effects differences in projections between pre-1972 and post-1972 cohorts. Earnings and other values for the post-1972 cohorts are derived by simply re-weighting the detailed projections of the 1960 to 1964 cohorts. The decline in earnings projections for men between cohorts born in 1950 and those born in 1970, for example, are a result of applying the MINT projection methodology described in this report. But comparisons between the 1970 and 1980 birth cohorts, for example, do not represent a consistent application of the MINT projection methodology. By using the 1960 to 1964 cohorts as donors, MINT's earnings projections for cohorts born after 1972 essentially return to the 1960 to 1964 cohort levels. Projected changes in the population characteristics cause some shifting of the AIE distributions, but the post 1972 cohorts more closely resemble the 1960-1964 donor cohorts than later cohorts projected by MINT (1965-72).

There are a number of reasons for choosing the 1960 to 1964 cohorts as donor records rather than those born between 1965 and 1972. The earlier cohorts had mostly completed their education when they were interviewed in the 1996 SIPP. Administrative data gives us earnings for them through ages 40 to 44 (year 2004). Most of these workers will be in their career job with detailed self-reported pension and asset information. Projections based on the limited characteristics at younger ages of the 1965-72 cohorts may lack important determinants for projecting future earning paths.

The biggest source of changes in earnings between the 1926 and 1970 birth cohorts is the dramatic increase in female labor force participation and earnings in the post-war birth cohorts. As women's relative earnings have risen, men's relative earnings have fallen. By replicating the earnings patterns of the 1960 to 1964 cohorts, MINT maintains the male female earnings ratio at 1960 to 1964 cohort levels. The ratio of median female to male average indexed total earnings at age 62 is projected to rise from 0.19 for cohorts born between 1926 and 1930 to 0.58 for cohorts born between 1961 and 1965. The method for projecting the extended cohorts limits the evolution of this important differential into the future.

III. CONCLUSIONS

MINT5 projects that women's relative earnings rise over time, while men's earnings fall. Average indexed Social Security covered earnings initially increase for men born between 1926 and 1945 due to increases in the relative Social Security taxable maximum and increases in Social Security coverage, but median average indexed earnings fall for men born after 1945 as the relative earnings of men in these cohorts has fallen, while the wage-indexed taxable maximum and Social Security coverage rates have changed little. Women's average indexed earnings rise along with their increased relative earnings in the post-war birth cohorts.

Women's earnings become more equally distributed over time, while men's earnings become more unequally distributed over time. The ratio of women's to men's earnings is projected to rise between 1926 cohorts and 1964 cohorts. The projection method used to predict earnings for cohort born after 1972 have some limitations that readers should bear in mind. This method limits the evolution of women's earnings relative to men's earnings into the future.

IV. CHAPTER 5 APPENDIX

Table A5–1. Number of People by Age and Year and Data Source (in thousands)

	MINT5						OCACT					
	Year						Year					
Age	2000	2010	2020	2030	2040	2050	2000	2010	2020	2030	2040	2050
40	4620	4274	4544	4847	4916	4938	4718	4442	4479	4868	4775	4846
41	4629	4045	4308	4899	4618	4800	4654	4345	4378	4761	4751	4825
42	4629	4094	4338	4704	4706	4820	4616	4275	4283	4655	4728	4803
43	4567	4095	4208	4623	4810	4928	4583	4286	4200	4600	4718	4783
44	4576	4249	4035	4485	4910	4881	4474	4377	4129	4579	4727	4765
45	4410	4226	4065	4614	4558	4923	4390	4529	4099	4553	4761	4793
46	4313	4516	4041	4465	4778	4824	4276	4654	4088	4533	4799	4814
47	4005	4533	3953	4532	4719	4663	4146	4695	4144	4553	4842	4775
48	4039	4498	4214	4474	4776	4713	4047	4705	4307	4558	4885	4750
49	3964	4504	4002	4514	4883	4782	3907	4705	4440	4528	4902	4766
50	3798	4584	4207	4485	4787	4884	3795	4672	4419	4463	4852	4770
51	3652	4593	4039	4274	4820	4533	3726	4614	4310	4351	4733	4734
52	3661	4580	4087	4262	4635	4623	3721	4567	4228	4245	4617	4699
53	3639	4547	4077	4147	4532	4711	3724	4494	4224	4152	4550	4675
54	3430	4498	4154	3962	4389	4796	3248	4372	4297	4069	4516	4671
55	2826	4305	4102	4005	4490	4468	2852	4258	4427	4026	4476	4690
56	2764	4178	4361	3963	4376	4668	2898	4142	4530	4001	4443	4713
57	2778	3890	4390	3851	4430	4598	2910	4003	4552	4040	4447	4739
58	2807	3921	4370	4168	4368	4669	2749	3866	4543	4180	4435	4765
59	2444	3807	4343	3905	4371	4738	2501	3726	4522	4289	4388	4763
60	2283	3604	4381	3977	4357	4658	2373	3609	4467	4249	4308	4697
61	2258	3439	4359	3838	4128	4662	2303	3532	4388	4124	4181	4563
62	2165	3502	4349	3991	4091	4470	2248	3532	4318	4024	4060	4431
63	2053	3451	4206	3867	3987	4357	2151	3354	4221	3995	3949	4345
64	2086	3232	4202	3983	3769	4221	2073	2899	4078	4035	3846	4287
65	1933	2585	3907	3835	3844	4261	2032	2650	3941	4125	3780	4222
66	1880	2508	3835	4005	3693	4092	1943	2655	3799	4185	3727	4160
67	1821	2503	3486	4029	3588	4092	1892	2594	3638	4167	3730	4130
68	1842	2507	3516	3928	3838	4045	1893	2394	3476	4116	3821	4082

Table A5–1. Number of People by Age and Year and Data Source (in thousands)

	MINT5						OCACT					
	Year						Year					
Age	2000	2010	2020	2030	2040	2050	2000	2010	2020	2030	2040	2050
69	1860	2099	3325	3795	3534	3974	1887	2188	3311	4052	3879	4000
70	1810	1956	3031	3805	3556	3890	1863	2065	3166	3955	3799	3885
71	1723	1864	2899	3767	3324	3610	1819	1977	3054	3834	3642	3727
72	1802	1743	2893	3602	3367	3462	1790	1881	3004	3716	3505	3573
73	1707	1624	2857	3467	3204	3339	1750	1769	2807	3576	3428	3427
74	1714	1604	2537	3367	3241	3075	1688	1681	2385	3396	3406	3288
75		1468	2010	3060	3060	3058	1638	1597	2136	3220	3420	3178
76		1389	1871	2943	3128	2933	1577	1504	2091	3041	3403	3077
77		1302	1802	2658	3049	2792	1488	1438	1993	2846	3317	3018
78		1226	1819	2496	2927	2687	1422	1392	1792	2652	3201	3025
79		1267	1468	2339	2711	2509	1342	1338	1589	2459	3073	3000
80		1147	1318	2100	2622	2578	1218	1275	1451	2281	2918	2865
81		1009	1174	1959	2553	2314	1097	1203	1338	2127	2743	2671
82		980	1079	1764	2315	2244	991	1130	1222	2014	2569	2490
83		893	969	1726	2066	1845	895	1050	1097	1805	2376	2347
84		873	856	1426	1893	1762	806	962	987	1461	2155	2233
85			763	1101	1660	1701	738	878	883	1233	1937	2131
86			650	941	1519	1650	663	787	775	1129	1720	2001
87			579	845	1299	1604	576	691	684	1000	1499	1824
88			484	790	1127	1413	490	602	606	827	1289	1631
89			398	600	997	1185	409	513	527	666	1092	1437
90			355	433	793	1071	343	428	449	546	914	1239

Source: Urban Institute tabulations of MINT5 and OCACT 2007.
Notes: MINT5 population includes non-institutionalized, United States residents. OCACT population is the Social Security Area population and includes individuals living in US foreign territories, military overseas, and the institutionalized.

Table A5–2. Female Employment Rates by Age and Birth Year

	Birth Year															
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**
20	.	0.595	0.623	0.636	0.742	0.759	0.796	0.795	0.836	0.784	0.768	0.777	0.775	0.763	0.758	0.760
21	0.545	0.574	0.591	0.631	0.723	0.758	0.777	0.796	0.838	0.782	0.761	0.763	0.761	0.756	0.751	0.752
22	0.528	0.533	0.568	0.623	0.714	0.770	0.781	0.803	0.832	0.790	0.771	0.779	0.779	0.774	0.766	0.770
23	0.492	0.490	0.517	0.597	0.689	0.751	0.773	0.812	0.822	0.820	0.793	0.799	0.799	0.793	0.788	0.787
24	0.455	0.447	0.481	0.584	0.660	0.733	0.761	0.818	0.827	0.805	0.776	0.783	0.782	0.782	0.771	0.776
25	0.423	0.427	0.462	0.556	0.639	0.726	0.758	0.820	0.820	0.821	0.797	0.805	0.805	0.805	0.794	0.792
26	0.395	0.402	0.449	0.534	0.620	0.712	0.756	0.808	0.801	0.817	0.792	0.799	0.806	0.802	0.794	0.795
27	0.376	0.374	0.444	0.517	0.609	0.699	0.761	0.804	0.811	0.831	0.808	0.817	0.816	0.814	0.807	0.807
28	0.363	0.363	0.449	0.504	0.612	0.695	0.760	0.796	0.814	0.811	0.798	0.807	0.808	0.803	0.798	0.798
29	0.357	0.363	0.458	0.509	0.614	0.694	0.770	0.792	0.807	0.801	0.794	0.797	0.798	0.795	0.789	0.786
30	0.356	0.365	0.468	0.502	0.620	0.702	0.771	0.790	0.803	0.800	0.795	0.800	0.798	0.798	0.792	0.790
31	0.355	0.378	0.469	0.522	0.626	0.718	0.764	0.785	0.813	0.791	0.782	0.789	0.786	0.788	0.781	0.781
32	0.361	0.403	0.485	0.539	0.642	0.726	0.770	0.793	0.802	0.803	0.803	0.806	0.804	0.799	0.796	0.798
33	0.374	0.425	0.498	0.557	0.657	0.740	0.769	0.799	0.809	0.797	0.791	0.801	0.799	0.795	0.792	0.792
34	0.372	0.448	0.517	0.573	0.676	0.756	0.767	0.802	0.795	0.809	0.804	0.815	0.814	0.812	0.810	0.806
35	0.390	0.475	0.527	0.601	0.697	0.771	0.772	0.806	0.791	0.808	0.797	0.809	0.810	0.813	0.808	0.804
36	0.407	0.494	0.550	0.613	0.717	0.781	0.777	0.814	0.786	0.809	0.809	0.818	0.821	0.820	0.815	0.813
37	0.422	0.509	0.562	0.640	0.735	0.789	0.789	0.815	0.803	0.818	0.815	0.827	0.829	0.828	0.825	0.824
38	0.453	0.526	0.582	0.659	0.747	0.792	0.796	0.809	0.789	0.809	0.819	0.826	0.834	0.829	0.828	0.823
39	0.479	0.549	0.599	0.678	0.767	0.797	0.806	0.804	0.791	0.806	0.813	0.813	0.823	0.819	0.813	0.812
40	0.502	0.566	0.617	0.700	0.781	0.806	0.810	0.801	0.799	0.804	0.804	0.806	0.814	0.811	0.807	0.807
41	0.516	0.570	0.627	0.727	0.788	0.811	0.815	0.803	0.801	0.805	0.801	0.811	0.818	0.815	0.810	0.808
42	0.527	0.570	0.647	0.734	0.796	0.818	0.816	0.805	0.807	0.813	0.814	0.816	0.817	0.817	0.813	0.808
43	0.528	0.590	0.664	0.747	0.796	0.819	0.817	0.807	0.809	0.815	0.809	0.821	0.823	0.822	0.820	0.816
44	0.534	0.592	0.670	0.753	0.797	0.822	0.811	0.809	0.803	0.806	0.806	0.815	0.818	0.817	0.812	0.809
45	0.537	0.595	0.687	0.758	0.797	0.828	0.814	0.812	0.813	0.804	0.816	0.820	0.823	0.820	0.814	0.812
46	0.547	0.597	0.701	0.762	0.797	0.825	0.805	0.805	0.808	0.799	0.794	0.804	0.805	0.802	0.796	0.794
47	0.546	0.613	0.706	0.763	0.800	0.825	0.804	0.801	0.790	0.799	0.795	0.802	0.808	0.803	0.797	0.802
48	0.550	0.623	0.708	0.771	0.801	0.819	0.800	0.801	0.800	0.798	0.799	0.802	0.808	0.806	0.799	0.800
49	0.545	0.630	0.709	0.764	0.797	0.813	0.798	0.801	0.805	0.807	0.803	0.810	0.812	0.806	0.801	0.804
50	0.551	0.634	0.711	0.758	0.795	0.803	0.789	0.789	0.793	0.784	0.777	0.787	0.795	0.788	0.784	0.785
51	0.541	0.638	0.709	0.748	0.789	0.799	0.785	0.787	0.781	0.783	0.775	0.785	0.792	0.786	0.782	0.783

Table A5–2. Female Employment Rates by Age and Birth Year

Age	Birth Year 1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005
52	0.545	0.635	0.703	0.740	0.785	0.795	0.777	0.777	0.785	0.766	0.769	0.775	0.780	0.773	0.771	0.769
53	0.544	0.644	0.691	0.731	0.770	0.783	0.769	0.768	0.770	0.760	0.759	0.764	0.773	0.764	0.764	0.763
54	0.551	0.643	0.684	0.726	0.749	0.767	0.756	0.753	0.762	0.741	0.746	0.749	0.757	0.751	0.746	0.742
55	0.551	0.635	0.678	0.716	0.736	0.725	0.721	0.724	0.722	0.733	0.726	0.727	0.740	0.728	0.727	0.725
56	0.551	0.626	0.668	0.701	0.727	0.715	0.710	0.716	0.708	0.720	0.709	0.710	0.722	0.713	0.711	0.710
57	0.540	0.608	0.641	0.680	0.716	0.717	0.697	0.701	0.692	0.720	0.706	0.716	0.719	0.710	0.710	0.709
58	0.527	0.589	0.631	0.667	0.705	0.690	0.675	0.684	0.671	0.686	0.696	0.686	0.694	0.687	0.693	0.689
59	0.515	0.567	0.611	0.637	0.690	0.665	0.657	0.664	0.651	0.664	0.679	0.671	0.672	0.665	0.669	0.661
60	0.500	0.536	0.593	0.617	0.677	0.644	0.638	0.639	0.636	0.644	0.647	0.648	0.651	0.642	0.646	0.639
61	0.472	0.508	0.563	0.585	0.645	0.603	0.595	0.601	0.601	0.611	0.613	0.617	0.610	0.604	0.612	0.606
62	0.431	0.482	0.530	0.540	0.599	0.564	0.552	0.560	0.548	0.547	0.571	0.580	0.571	0.571	0.571	0.566
63	0.381	0.429	0.477	0.465	0.513	0.470	0.453	0.469	0.461	0.448	0.473	0.482	0.481	0.481	0.479	0.476
64	0.345	0.388	0.436	0.404	0.442	0.407	0.391	0.399	0.376	0.390	0.422	0.423	0.428	0.424	0.421	0.415
65	0.316	0.357	0.391	0.362	0.388	0.352	0.340	0.353	0.336	0.336	0.374	0.370	0.378	0.372	0.365	0.363
66	0.262	0.298	0.332	0.297	0.320	0.297	0.283	0.292	0.284	0.274	0.303	0.295	0.304	0.292	0.287	0.290
67	0.225	0.268	0.290	0.259	0.281	0.256	0.240	0.237	0.236	0.227	0.245	0.235	0.240	0.231	0.232	0.231
68	0.198	0.244	0.248	0.219	0.231	0.208	0.200	0.199	0.197	0.182	0.188	0.188	0.187	0.183	0.186	0.178
69	0.179	0.220	0.216	0.193	0.202	0.177	0.180	0.179	0.171	0.162	0.165	0.162	0.163	0.157	0.159	0.157
70	0.168	0.194	0.197	0.172	0.190	0.172	0.164	0.168	0.164	0.163	0.168	0.162	0.158	0.156	0.158	0.157

Source: Urban Institute tabulations of MINT5.

Table A5–3. Male Employment Rates by Age and Birth Year

	Birth Year															
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**
20	.	0.638	0.853	0.891	0.912	0.889	0.887	0.854	0.896	0.863	0.823	0.828	0.829	0.829	0.823	0.826
21	0.615	0.579	0.912	0.905	0.918	0.892	0.883	0.866	0.888	0.863	0.846	0.853	0.847	0.845	0.842	0.846
22	0.618	0.668	0.912	0.921	0.918	0.901	0.884	0.882	0.894	0.869	0.849	0.858	0.847	0.852	0.852	0.849
23	0.620	0.793	0.917	0.925	0.918	0.897	0.885	0.900	0.896	0.880	0.857	0.874	0.863	0.865	0.868	0.864
24	0.699	0.870	0.919	0.927	0.911	0.894	0.877	0.909	0.902	0.894	0.875	0.887	0.879	0.882	0.880	0.877
25	0.757	0.885	0.918	0.918	0.895	0.889	0.881	0.921	0.904	0.906	0.888	0.906	0.898	0.896	0.897	0.897
26	0.794	0.900	0.924	0.917	0.889	0.880	0.893	0.925	0.918	0.920	0.910	0.917	0.913	0.911	0.914	0.908
27	0.825	0.896	0.915	0.915	0.884	0.884	0.896	0.922	0.911	0.913	0.895	0.905	0.901	0.894	0.902	0.895
28	0.849	0.894	0.925	0.905	0.882	0.879	0.908	0.918	0.907	0.900	0.898	0.910	0.906	0.902	0.904	0.899
29	0.872	0.898	0.922	0.901	0.877	0.883	0.915	0.917	0.921	0.908	0.902	0.908	0.907	0.902	0.909	0.900
30	0.876	0.899	0.922	0.898	0.872	0.894	0.919	0.915	0.918	0.901	0.898	0.906	0.901	0.899	0.901	0.895
31	0.879	0.901	0.916	0.891	0.873	0.905	0.924	0.912	0.915	0.901	0.906	0.916	0.913	0.908	0.910	0.904
32	0.883	0.898	0.913	0.889	0.879	0.903	0.925	0.908	0.905	0.904	0.908	0.914	0.909	0.904	0.907	0.902
33	0.885	0.899	0.911	0.885	0.884	0.910	0.918	0.908	0.901	0.895	0.899	0.902	0.901	0.893	0.898	0.894
34	0.887	0.898	0.906	0.887	0.895	0.912	0.910	0.906	0.894	0.908	0.919	0.920	0.916	0.910	0.912	0.910
35	0.886	0.896	0.900	0.875	0.905	0.912	0.911	0.902	0.899	0.896	0.910	0.912	0.906	0.901	0.904	0.895
36	0.884	0.893	0.897	0.878	0.916	0.916	0.907	0.898	0.883	0.888	0.906	0.904	0.895	0.892	0.893	0.891
37	0.889	0.894	0.896	0.880	0.918	0.916	0.911	0.896	0.889	0.893	0.910	0.906	0.901	0.897	0.898	0.895
38	0.892	0.888	0.886	0.880	0.918	0.913	0.905	0.890	0.888	0.894	0.909	0.903	0.899	0.892	0.892	0.890
39	0.892	0.884	0.882	0.886	0.919	0.911	0.905	0.882	0.890	0.893	0.900	0.897	0.894	0.889	0.888	0.888
40	0.889	0.878	0.883	0.899	0.921	0.908	0.906	0.875	0.883	0.891	0.899	0.896	0.896	0.887	0.887	0.884
41	0.880	0.873	0.876	0.905	0.917	0.907	0.906	0.870	0.878	0.884	0.887	0.890	0.886	0.884	0.884	0.883
42	0.882	0.871	0.880	0.901	0.914	0.899	0.895	0.866	0.888	0.869	0.882	0.879	0.876	0.872	0.870	0.871
43	0.876	0.860	0.886	0.899	0.909	0.891	0.888	0.871	0.881	0.863	0.889	0.887	0.883	0.880	0.878	0.880
44	0.872	0.851	0.886	0.904	0.903	0.892	0.879	0.865	0.878	0.856	0.874	0.876	0.875	0.870	0.871	0.870
45	0.862	0.846	0.890	0.904	0.896	0.885	0.868	0.859	0.861	0.852	0.859	0.860	0.858	0.854	0.854	0.850
46	0.854	0.837	0.900	0.900	0.891	0.887	0.864	0.855	0.865	0.857	0.863	0.870	0.863	0.855	0.854	0.847
47	0.851	0.841	0.893	0.895	0.886	0.881	0.861	0.846	0.859	0.850	0.844	0.854	0.846	0.842	0.844	0.836
48	0.845	0.845	0.887	0.891	0.882	0.870	0.855	0.843	0.850	0.855	0.851	0.861	0.856	0.850	0.853	0.846
49	0.837	0.851	0.891	0.884	0.886	0.863	0.847	0.841	0.852	0.857	0.846	0.859	0.853	0.844	0.846	0.839
50	0.833	0.860	0.885	0.885	0.878	0.858	0.839	0.839	0.846	0.844	0.834	0.851	0.847	0.838	0.842	0.837
51	0.819	0.867	0.877	0.879	0.868	0.850	0.837	0.827	0.833	0.842	0.836	0.851	0.846	0.837	0.841	0.836

Table A5–3. Male Employment Rates by Age and Birth Year

	Birth Year															
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**
52	0.824	0.868	0.871	0.874	0.858	0.834	0.828	0.817	0.832	0.833	0.844	0.852	0.850	0.842	0.846	0.841
53	0.825	0.852	0.863	0.867	0.851	0.833	0.823	0.814	0.823	0.834	0.836	0.845	0.848	0.842	0.844	0.838
54	0.826	0.846	0.853	0.856	0.839	0.830	0.818	0.813	0.817	0.827	0.824	0.836	0.834	0.830	0.830	0.825
55	0.829	0.850	0.843	0.849	0.826	0.810	0.804	0.796	0.760	0.798	0.795	0.814	0.811	0.807	0.807	0.803
56	0.831	0.824	0.825	0.841	0.806	0.799	0.788	0.780	0.764	0.790	0.802	0.820	0.817	0.811	0.808	0.806
57	0.816	0.810	0.807	0.821	0.799	0.783	0.776	0.769	0.740	0.770	0.771	0.789	0.789	0.785	0.780	0.776
58	0.799	0.787	0.788	0.804	0.777	0.767	0.746	0.740	0.721	0.741	0.744	0.761	0.759	0.753	0.757	0.760
59	0.775	0.762	0.766	0.781	0.764	0.753	0.717	0.725	0.699	0.728	0.737	0.753	0.755	0.747	0.746	0.745
60	0.753	0.741	0.745	0.746	0.745	0.719	0.687	0.703	0.672	0.694	0.697	0.720	0.718	0.720	0.718	0.718
61	0.719	0.709	0.717	0.710	0.706	0.677	0.656	0.660	0.639	0.671	0.693	0.710	0.703	0.711	0.703	0.703
62	0.673	0.673	0.673	0.665	0.688	0.654	0.627	0.630	0.606	0.631	0.661	0.684	0.682	0.681	0.680	0.678
63	0.578	0.591	0.600	0.567	0.608	0.568	0.527	0.525	0.503	0.513	0.548	0.569	0.558	0.555	0.557	0.556
64	0.521	0.543	0.550	0.500	0.540	0.505	0.465	0.459	0.434	0.422	0.461	0.475	0.470	0.469	0.473	0.468
65	0.475	0.504	0.502	0.440	0.483	0.452	0.406	0.407	0.391	0.394	0.423	0.438	0.436	0.438	0.443	0.438
66	0.401	0.446	0.430	0.376	0.413	0.383	0.345	0.349	0.314	0.351	0.363	0.374	0.374	0.375	0.379	0.372
67	0.352	0.408	0.385	0.327	0.364	0.326	0.298	0.292	0.270	0.283	0.301	0.311	0.307	0.302	0.303	0.302
68	0.324	0.373	0.326	0.280	0.309	0.277	0.246	0.240	0.223	0.225	0.244	0.250	0.246	0.240	0.243	0.237
69	0.298	0.344	0.278	0.248	0.268	0.250	0.214	0.210	0.202	0.185	0.185	0.189	0.190	0.184	0.191	0.180
70	0.281	0.305	0.265	0.239	0.263	0.235	0.211	0.212	0.201	0.177	0.186	0.186	0.190	0.188	0.192	0.183

Source: Urban Institute tabulations of MINT5.

Table A5–4. Average Less Censored Female Earnings (including zeros) Relative to the Average Wage by Age and Birth Year

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
20	.	0.259	0.260	0.236	0.273	0.257	0.275	0.240	0.238	0.217	0.221	0.221	0.217	0.212	0.213	0.208	0.213	0.207	0.211
21	0.252	0.255	0.256	0.260	0.299	0.291	0.315	0.281	0.269	0.253	0.262	0.263	0.258	0.254	0.254	0.250	0.255	0.249	0.254
22	0.261	0.255	0.266	0.290	0.330	0.343	0.360	0.338	0.321	0.315	0.314	0.319	0.317	0.312	0.313	0.308	0.311	0.308	0.307
23	0.244	0.241	0.261	0.309	0.369	0.404	0.421	0.417	0.390	0.394	0.398	0.404	0.403	0.396	0.394	0.390	0.391	0.392	0.386
24	0.228	0.225	0.243	0.311	0.380	0.428	0.461	0.482	0.445	0.469	0.475	0.481	0.480	0.474	0.470	0.468	0.466	0.467	0.461
25	0.212	0.214	0.232	0.308	0.376	0.439	0.489	0.521	0.478	0.523	0.533	0.543	0.542	0.533	0.529	0.527	0.525	0.526	0.511
26	0.200	0.196	0.225	0.303	0.369	0.447	0.518	0.542	0.512	0.546	0.560	0.564	0.570	0.561	0.555	0.556	0.551	0.553	0.535
27	0.191	0.186	0.226	0.291	0.375	0.463	0.537	0.560	0.529	0.578	0.588	0.592	0.596	0.584	0.583	0.580	0.579	0.576	0.562
28	0.183	0.177	0.234	0.283	0.388	0.479	0.560	0.569	0.553	0.587	0.587	0.594	0.598	0.586	0.586	0.580	0.580	0.576	0.563
29	0.178	0.173	0.241	0.281	0.403	0.495	0.578	0.582	0.564	0.605	0.610	0.615	0.619	0.610	0.606	0.604	0.602	0.598	0.590
30	0.180	0.176	0.246	0.289	0.411	0.519	0.588	0.585	0.568	0.611	0.599	0.607	0.614	0.606	0.602	0.601	0.600	0.598	0.589
31	0.180	0.187	0.251	0.298	0.424	0.552	0.592	0.595	0.580	0.622	0.612	0.624	0.627	0.620	0.614	0.614	0.613	0.615	0.603
32	0.182	0.202	0.261	0.318	0.450	0.566	0.603	0.601	0.587	0.633	0.628	0.642	0.640	0.633	0.627	0.630	0.625	0.629	0.617
33	0.183	0.212	0.274	0.341	0.475	0.585	0.616	0.611	0.602	0.659	0.654	0.668	0.663	0.657	0.650	0.654	0.649	0.651	0.644
34	0.193	0.231	0.290	0.359	0.508	0.605	0.625	0.613	0.604	0.657	0.653	0.663	0.664	0.659	0.652	0.654	0.653	0.652	0.647
35	0.204	0.254	0.304	0.383	0.534	0.626	0.639	0.620	0.619	0.669	0.662	0.670	0.668	0.665	0.660	0.657	0.656	0.654	0.652
36	0.217	0.269	0.326	0.403	0.570	0.643	0.648	0.630	0.621	0.669	0.657	0.670	0.669	0.666	0.660	0.659	0.661	0.658	0.654
37	0.229	0.286	0.355	0.443	0.604	0.659	0.658	0.640	0.618	0.673	0.665	0.672	0.672	0.667	0.666	0.662	0.661	0.658	0.654
38	0.249	0.302	0.376	0.475	0.628	0.674	0.665	0.645	0.625	0.682	0.686	0.690	0.695	0.689	0.687	0.684	0.682	0.678	0.674
39	0.269	0.316	0.396	0.502	0.656	0.688	0.671	0.650	0.633	0.685	0.681	0.687	0.696	0.688	0.683	0.681	0.680	0.678	0.676
40	0.287	0.329	0.417	0.540	0.672	0.701	0.679	0.663	0.638	0.685	0.690	0.697	0.703	0.696	0.693	0.692	0.684	0.684	0.681
41	0.305	0.337	0.430	0.575	0.689	0.717	0.691	0.670	0.644	0.693	0.696	0.704	0.712	0.704	0.701	0.701	0.693	0.692	0.691
42	0.322	0.356	0.459	0.596	0.701	0.731	0.701	0.675	0.654	0.697	0.700	0.713	0.715	0.706	0.704	0.701	0.698	0.694	0.696
43	0.333	0.377	0.485	0.612	0.722	0.735	0.708	0.682	0.668	0.706	0.714	0.727	0.730	0.719	0.719	0.715	0.711	0.709	0.709
44	0.339	0.387	0.505	0.628	0.734	0.735	0.712	0.689	0.680	0.707	0.721	0.732	0.733	0.725	0.723	0.719	0.717	0.712	0.713
45	0.353	0.398	0.528	0.639	0.743	0.739	0.717	0.699	0.686	0.710	0.727	0.738	0.737	0.731	0.729	0.722	0.719	0.716	0.717
46	0.358	0.407	0.555	0.651	0.746	0.743	0.716	0.705	0.685	0.719	0.729	0.740	0.740	0.731	0.731	0.725	0.721	0.718	0.718
47	0.365	0.429	0.565	0.658	0.750	0.741	0.711	0.699	0.684	0.723	0.732	0.741	0.740	0.732	0.732	0.727	0.722	0.719	0.721
48	0.372	0.451	0.576	0.666	0.748	0.746	0.710	0.701	0.685	0.720	0.739	0.743	0.736	0.732	0.731	0.723	0.718	0.716	0.720
49	0.380	0.467	0.583	0.672	0.740	0.745	0.709	0.699	0.680	0.711	0.735	0.743	0.739	0.731	0.728	0.719	0.717	0.714	0.714
50	0.387	0.485	0.585	0.667	0.730	0.732	0.701	0.686	0.679	0.694	0.716	0.727	0.727	0.720	0.716	0.710	0.705	0.701	0.698

Table A5–4. Average Less Censored Female Earnings (including zeros) Relative to the Average Wage by Age and Birth Year

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
51	0.389	0.500	0.580	0.661	0.719	0.726	0.697	0.685	0.673	0.687	0.701	0.711	0.708	0.700	0.699	0.694	0.691	0.685	0.683
52	0.396	0.501	0.578	0.654	0.720	0.718	0.692	0.678	0.673	0.685	0.706	0.712	0.705	0.696	0.697	0.690	0.688	0.685	0.681
53	0.404	0.501	0.576	0.636	0.706	0.702	0.682	0.664	0.662	0.675	0.693	0.705	0.699	0.688	0.692	0.683	0.684	0.679	0.673
54	0.413	0.493	0.573	0.624	0.690	0.694	0.664	0.647	0.653	0.653	0.668	0.676	0.673	0.664	0.665	0.658	0.653	0.652	0.650
55	0.417	0.485	0.567	0.600	0.699	0.719	0.674	0.673	0.614	0.657	0.681	0.689	0.689	0.675	0.680	0.671	0.668	0.666	0.663
56	0.421	0.470	0.549	0.578	0.689	0.680	0.644	0.627	0.588	0.607	0.617	0.626	0.634	0.623	0.625	0.621	0.622	0.619	0.612
57	0.407	0.455	0.519	0.547	0.687	0.657	0.609	0.601	0.559	0.596	0.615	0.620	0.620	0.613	0.610	0.607	0.611	0.607	0.607
58	0.389	0.435	0.496	0.521	0.688	0.626	0.591	0.587	0.546	0.579	0.607	0.607	0.609	0.597	0.600	0.593	0.598	0.592	0.584
59	0.378	0.419	0.470	0.495	0.667	0.580	0.544	0.543	0.501	0.525	0.550	0.553	0.549	0.548	0.542	0.538	0.542	0.540	0.533
60	0.358	0.394	0.436	0.488	0.637	0.555	0.521	0.519	0.491	0.498	0.516	0.519	0.520	0.520	0.520	0.511	0.508	0.507	0.510
61	0.324	0.357	0.405	0.460	0.590	0.506	0.475	0.488	0.435	0.462	0.486	0.494	0.494	0.490	0.490	0.486	0.481	0.480	0.477
62	0.277	0.316	0.357	0.432	0.556	0.490	0.456	0.464	0.399	0.416	0.465	0.471	0.467	0.472	0.460	0.459	0.453	0.456	0.446
63	0.224	0.252	0.298	0.378	0.458	0.396	0.355	0.370	0.311	0.327	0.355	0.360	0.365	0.367	0.354	0.356	0.353	0.355	0.347
64	0.189	0.210	0.254	0.297	0.340	0.293	0.266	0.282	0.224	0.249	0.285	0.286	0.289	0.284	0.279	0.282	0.277	0.280	0.260
65	0.150	0.169	0.218	0.223	0.232	0.198	0.185	0.199	0.160	0.177	0.209	0.210	0.207	0.204	0.199	0.204	0.198	0.200	.
66	0.107	0.125	0.170	0.172	0.182	0.158	0.137	0.125	0.108	0.113	0.128	0.126	0.127	0.125	0.120	0.126	0.120	0.118	.
67	0.086	0.104	0.134	0.133	0.143	0.124	0.109	0.101	0.085	0.091	0.099	0.095	0.095	0.096	0.092	0.097	0.093	0.090	.
68	0.072	0.092	0.102	0.097	0.104	0.087	0.080	0.076	0.063	0.065	0.065	0.064	0.063	0.063	0.061	0.063	0.063	0.061	.
69	0.062	0.081	0.078	0.072	0.078	0.063	0.060	0.059	0.047	0.052	0.050	0.049	0.049	0.048	0.047	0.049	0.048	0.046	.
70	0.052	0.066	0.075	0.069	0.082	0.070	0.066	0.068	0.056	0.057	0.060	0.057	0.057	0.056	0.056	0.057	0.056	.	.

Source: Urban Institute tabulations of MINT5.
Notes: . indicate ages that are not included in MINT5.

Table A5–5. Average Less Censored Male Earnings (including zeros) relative to the Average Wage by Age and Birth Year

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
20	.	0.329	0.422	0.414	0.401	0.441	0.465	0.347	0.317	0.314	0.350	0.351	0.352	0.351	0.349	0.351	0.345	0.351	0.349
21	0.359	0.324	0.516	0.496	0.473	0.515	0.528	0.411	0.372	0.368	0.405	0.409	0.406	0.408	0.401	0.405	0.404	0.410	0.406
22	0.381	0.424	0.598	0.592	0.577	0.595	0.596	0.490	0.437	0.433	0.473	0.469	0.468	0.472	0.466	0.463	0.465	0.471	0.468
23	0.473	0.564	0.678	0.712	0.697	0.700	0.659	0.598	0.516	0.546	0.576	0.590	0.583	0.592	0.585	0.584	0.590	0.597	0.592
24	0.592	0.687	0.746	0.829	0.790	0.781	0.727	0.694	0.587	0.645	0.667	0.684	0.681	0.688	0.684	0.680	0.688	0.696	0.694
25	0.717	0.779	0.820	0.922	0.835	0.851	0.789	0.770	0.658	0.726	0.750	0.770	0.767	0.772	0.765	0.763	0.771	0.775	0.771
26	0.803	0.858	0.915	0.979	0.897	0.906	0.854	0.824	0.743	0.793	0.807	0.817	0.818	0.818	0.816	0.809	0.815	0.819	0.812
27	0.870	0.902	0.982	1.035	0.956	0.946	0.916	0.879	0.802	0.862	0.877	0.890	0.895	0.892	0.893	0.876	0.891	0.888	0.881
28	0.929	0.947	1.059	1.074	1.012	0.982	0.981	0.916	0.858	0.890	0.913	0.927	0.931	0.929	0.933	0.915	0.929	0.927	0.916
29	0.981	0.977	1.125	1.110	1.054	1.022	1.030	0.952	0.917	0.936	0.948	0.974	0.972	0.971	0.969	0.953	0.962	0.963	0.953
30	1.013	1.030	1.158	1.137	1.104	1.072	1.066	0.988	0.965	0.958	0.970	0.995	0.989	0.988	0.987	0.971	0.985	0.986	0.974
31	1.038	1.075	1.179	1.172	1.134	1.130	1.097	1.016	1.001	0.989	1.016	1.037	1.038	1.030	1.034	1.019	1.029	1.038	1.021
32	1.056	1.105	1.198	1.206	1.169	1.149	1.108	1.042	1.015	1.012	1.045	1.058	1.056	1.051	1.057	1.038	1.051	1.059	1.046
33	1.082	1.146	1.218	1.240	1.192	1.188	1.125	1.072	1.021	1.047	1.071	1.086	1.083	1.078	1.086	1.066	1.074	1.079	1.069
34	1.106	1.181	1.234	1.271	1.229	1.206	1.137	1.089	1.028	1.062	1.083	1.102	1.100	1.094	1.098	1.078	1.089	1.092	1.082
35	1.113	1.197	1.248	1.292	1.261	1.224	1.144	1.102	1.052	1.067	1.114	1.132	1.125	1.120	1.123	1.105	1.116	1.114	1.106
36	1.142	1.204	1.285	1.304	1.306	1.231	1.161	1.111	1.040	1.090	1.126	1.141	1.134	1.131	1.127	1.114	1.124	1.127	1.110
37	1.170	1.218	1.298	1.312	1.319	1.235	1.175	1.112	1.071	1.111	1.146	1.162	1.158	1.152	1.147	1.138	1.149	1.150	1.135
38	1.202	1.236	1.323	1.320	1.336	1.233	1.180	1.115	1.059	1.114	1.149	1.164	1.160	1.153	1.149	1.141	1.147	1.151	1.137
39	1.226	1.256	1.323	1.343	1.353	1.245	1.178	1.109	1.071	1.103	1.138	1.156	1.148	1.135	1.142	1.126	1.136	1.139	1.118
40	1.244	1.265	1.335	1.361	1.352	1.243	1.173	1.105	1.060	1.093	1.135	1.152	1.143	1.130	1.133	1.120	1.126	1.122	1.107
41	1.236	1.265	1.338	1.386	1.343	1.247	1.178	1.106	1.076	1.108	1.145	1.169	1.158	1.157	1.155	1.143	1.153	1.150	1.136
42	1.233	1.287	1.360	1.385	1.342	1.241	1.165	1.103	1.087	1.089	1.138	1.162	1.153	1.153	1.147	1.137	1.144	1.142	1.130
43	1.239	1.296	1.356	1.380	1.332	1.237	1.161	1.099	1.081	1.079	1.140	1.157	1.143	1.137	1.130	1.123	1.130	1.125	1.112
44	1.252	1.307	1.346	1.387	1.322	1.219	1.142	1.082	1.071	1.068	1.111	1.134	1.117	1.114	1.107	1.091	1.099	1.095	1.082
45	1.252	1.311	1.344	1.381	1.317	1.209	1.131	1.084	1.066	1.077	1.100	1.120	1.106	1.105	1.097	1.086	1.095	1.089	1.074
46	1.271	1.283	1.362	1.368	1.311	1.203	1.117	1.079	1.050	1.083	1.101	1.136	1.120	1.116	1.111	1.096	1.111	1.105	1.093
47	1.275	1.299	1.353	1.350	1.298	1.190	1.099	1.063	1.040	1.058	1.080	1.109	1.098	1.094	1.091	1.074	1.083	1.076	1.068
48	1.265	1.293	1.344	1.331	1.286	1.166	1.083	1.048	1.041	1.054	1.058	1.086	1.076	1.069	1.063	1.052	1.064	1.061	1.048
49	1.266	1.294	1.336	1.313	1.266	1.147	1.060	1.031	1.010	1.043	1.057	1.090	1.084	1.070	1.065	1.054	1.060	1.060	1.048
50	1.266	1.311	1.313	1.305	1.240	1.126	1.050	1.017	0.988	1.022	1.047	1.080	1.073	1.060	1.056	1.047	1.054	1.052	1.038

Table A5–5. Average Less Censored Male Earnings (including zeros) relative to the Average Wage by Age and Birth Year

Age	Birth Year 1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
51	1.254	1.327	1.289	1.295	1.213	1.112	1.037	1.005	0.980	1.017	1.027	1.064	1.054	1.038	1.035	1.028	1.037	1.033	1.022
52	1.246	1.301	1.260	1.269	1.191	1.077	1.025	0.986	0.962	1.008	1.027	1.067	1.052	1.037	1.035	1.026	1.034	1.033	1.021
53	1.246	1.274	1.227	1.233	1.163	1.063	1.002	0.969	0.964	0.998	1.015	1.049	1.046	1.028	1.027	1.013	1.027	1.022	1.013
54	1.233	1.245	1.200	1.193	1.128	1.038	0.978	0.950	0.945	0.955	0.978	1.009	0.995	0.980	0.985	0.973	0.985	0.983	0.968
55	1.222	1.220	1.159	1.143	1.120	1.086	1.004	0.973	0.899	0.954	0.978	1.023	1.016	0.998	1.003	0.985	1.001	1.003	0.982
56	1.208	1.147	1.093	1.096	1.100	1.052	0.959	0.933	0.866	0.932	0.966	1.016	1.007	0.993	0.992	0.975	0.995	0.995	0.979
57	1.146	1.102	1.046	1.040	1.098	1.018	0.933	0.908	0.848	0.875	0.902	0.940	0.930	0.914	0.916	0.904	0.927	0.919	0.907
58	1.100	1.034	0.989	0.986	1.102	0.988	0.893	0.872	0.787	0.838	0.862	0.896	0.883	0.872	0.885	0.874	0.889	0.892	0.878
59	1.041	0.958	0.922	0.924	1.091	0.941	0.838	0.827	0.744	0.790	0.819	0.849	0.849	0.829	0.834	0.822	0.828	0.838	0.821
60	0.954	0.891	0.851	0.876	1.012	0.870	0.779	0.774	0.704	0.753	0.781	0.814	0.809	0.801	0.805	0.794	0.805	0.803	0.792
61	0.873	0.807	0.772	0.832	0.951	0.808	0.719	0.719	0.663	0.718	0.758	0.797	0.788	0.785	0.785	0.769	0.792	0.787	0.773
62	0.742	0.695	0.666	0.781	0.940	0.809	0.709	0.705	0.629	0.679	0.751	0.792	0.778	0.765	0.770	0.754	0.779	0.773	0.762
63	0.576	0.537	0.541	0.657	0.794	0.677	0.575	0.579	0.500	0.534	0.606	0.636	0.628	0.619	0.624	0.610	0.636	0.635	0.631
64	0.477	0.456	0.463	0.545	0.653	0.553	0.460	0.469	0.357	0.417	0.482	0.511	0.502	0.496	0.496	0.483	0.506	0.501	0.498
65	0.365	0.376	0.407	0.413	0.489	0.403	0.344	0.351	0.275	0.312	0.356	0.380	0.380	0.378	0.377	0.367	0.387	0.381	.
66	0.262	0.281	0.325	0.305	0.393	0.329	0.257	0.236	0.176	0.215	0.247	0.264	0.258	0.254	0.253	0.248	0.258	0.250	.
67	0.210	0.240	0.265	0.230	0.303	0.249	0.199	0.198	0.151	0.172	0.195	0.213	0.209	0.203	0.203	0.204	0.208	0.208	.
68	0.180	0.209	0.202	0.173	0.216	0.179	0.142	0.149	0.108	0.122	0.147	0.158	0.153	0.149	0.149	0.145	0.150	0.143	.
69	0.150	0.183	0.149	0.129	0.157	0.134	0.104	0.109	0.082	0.083	0.098	0.103	0.103	0.098	0.099	0.096	0.098	0.093	.
70	0.136	0.165	0.171	0.145	0.186	0.160	0.131	0.134	0.104	0.098	0.119	0.120	0.127	0.120	0.121	0.116	0.122	.	.

Source: Urban Institute tabulations of MINT5.
Notes: . indicate ages that are not included in MINT5.

Table A5–6. Average Less Censored Female Earnings (excluding zeros) Relative to the Average Wage by Age and Birth Year

Age	Birth Year 1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
20	.	0.435	0.417	0.371	0.367	0.338	0.346	0.302	0.285	0.277	0.287	0.284	0.280	0.278	0.281	0.274	0.280	0.276	0.280
21	0.463	0.444	0.433	0.413	0.413	0.384	0.405	0.353	0.322	0.324	0.345	0.345	0.339	0.336	0.339	0.332	0.339	0.333	0.340
22	0.494	0.479	0.468	0.465	0.462	0.445	0.462	0.422	0.385	0.399	0.407	0.410	0.407	0.403	0.409	0.400	0.405	0.402	0.403
23	0.495	0.492	0.505	0.517	0.536	0.538	0.545	0.513	0.474	0.480	0.502	0.505	0.505	0.500	0.501	0.496	0.499	0.499	0.494
24	0.502	0.503	0.506	0.532	0.575	0.584	0.606	0.589	0.538	0.583	0.612	0.615	0.615	0.607	0.610	0.603	0.604	0.606	0.601
25	0.500	0.500	0.503	0.553	0.589	0.605	0.645	0.635	0.583	0.636	0.669	0.675	0.673	0.663	0.667	0.666	0.664	0.668	0.654
26	0.507	0.487	0.501	0.567	0.595	0.629	0.685	0.671	0.639	0.669	0.707	0.707	0.707	0.699	0.698	0.700	0.695	0.698	0.682
27	0.508	0.497	0.510	0.564	0.617	0.662	0.706	0.697	0.652	0.696	0.728	0.724	0.730	0.718	0.723	0.718	0.719	0.719	0.702
28	0.504	0.487	0.522	0.561	0.634	0.690	0.736	0.716	0.679	0.723	0.736	0.736	0.740	0.730	0.734	0.727	0.728	0.724	0.708
29	0.498	0.477	0.525	0.553	0.656	0.713	0.751	0.735	0.699	0.755	0.768	0.772	0.776	0.768	0.768	0.769	0.764	0.760	0.754
30	0.504	0.482	0.525	0.574	0.663	0.739	0.762	0.740	0.708	0.764	0.753	0.759	0.769	0.760	0.760	0.761	0.761	0.756	0.747
31	0.507	0.496	0.535	0.570	0.676	0.769	0.775	0.758	0.713	0.786	0.782	0.790	0.797	0.787	0.786	0.786	0.785	0.787	0.769
32	0.504	0.502	0.539	0.590	0.700	0.780	0.782	0.758	0.732	0.789	0.782	0.797	0.796	0.792	0.788	0.789	0.783	0.788	0.775
33	0.490	0.499	0.550	0.612	0.723	0.791	0.801	0.764	0.744	0.827	0.827	0.835	0.830	0.827	0.822	0.825	0.822	0.823	0.812
34	0.519	0.516	0.562	0.626	0.752	0.800	0.815	0.765	0.760	0.812	0.812	0.814	0.816	0.811	0.805	0.812	0.808	0.805	0.797
35	0.524	0.535	0.576	0.637	0.767	0.812	0.827	0.769	0.782	0.827	0.830	0.828	0.826	0.817	0.817	0.817	0.814	0.810	0.802
36	0.533	0.545	0.592	0.658	0.795	0.822	0.835	0.773	0.790	0.827	0.812	0.819	0.815	0.813	0.810	0.811	0.805	0.805	0.794
37	0.544	0.562	0.632	0.692	0.822	0.835	0.835	0.785	0.770	0.823	0.815	0.813	0.810	0.806	0.807	0.803	0.801	0.801	0.794
38	0.550	0.574	0.646	0.721	0.840	0.851	0.835	0.798	0.792	0.844	0.837	0.836	0.833	0.831	0.829	0.831	0.826	0.826	0.815
39	0.562	0.575	0.661	0.740	0.855	0.864	0.833	0.809	0.800	0.850	0.838	0.846	0.845	0.841	0.840	0.839	0.836	0.836	0.831
40	0.572	0.580	0.676	0.772	0.861	0.870	0.838	0.827	0.799	0.852	0.859	0.864	0.864	0.858	0.858	0.857	0.847	0.850	0.840
41	0.592	0.591	0.686	0.791	0.874	0.884	0.848	0.835	0.803	0.861	0.870	0.869	0.871	0.864	0.865	0.867	0.857	0.860	0.849
42	0.611	0.625	0.710	0.812	0.881	0.894	0.860	0.838	0.810	0.858	0.860	0.873	0.875	0.865	0.866	0.867	0.864	0.860	0.858
43	0.630	0.639	0.731	0.819	0.907	0.897	0.866	0.845	0.825	0.866	0.883	0.886	0.886	0.875	0.876	0.876	0.872	0.867	0.866
44	0.635	0.654	0.753	0.834	0.921	0.894	0.878	0.852	0.847	0.878	0.895	0.898	0.896	0.888	0.891	0.888	0.888	0.880	0.878
45	0.658	0.668	0.770	0.843	0.932	0.892	0.881	0.860	0.844	0.883	0.891	0.900	0.895	0.891	0.897	0.889	0.888	0.883	0.883
46	0.655	0.682	0.791	0.855	0.936	0.901	0.889	0.875	0.849	0.900	0.918	0.921	0.920	0.912	0.918	0.914	0.904	0.905	0.899
47	0.669	0.700	0.800	0.862	0.937	0.899	0.885	0.872	0.865	0.906	0.921	0.925	0.916	0.912	0.919	0.906	0.903	0.900	0.899
48	0.676	0.723	0.813	0.864	0.934	0.911	0.888	0.875	0.856	0.902	0.924	0.926	0.911	0.909	0.914	0.904	0.902	0.899	0.899
49	0.697	0.742	0.821	0.879	0.928	0.916	0.888	0.873	0.844	0.881	0.916	0.917	0.910	0.907	0.908	0.894	0.895	0.891	0.889
50	0.701	0.765	0.824	0.880	0.919	0.912	0.889	0.870	0.856	0.885	0.921	0.924	0.915	0.913	0.914	0.905	0.902	0.898	0.892

Table A5–6. Average Less Censored Female Earnings (excluding zeros) Relative to the Average Wage by Age and Birth Year

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
51	0.719	0.784	0.819	0.884	0.912	0.909	0.888	0.870	0.862	0.877	0.905	0.905	0.894	0.890	0.894	0.886	0.878	0.878	0.873
52	0.727	0.788	0.822	0.883	0.917	0.904	0.891	0.872	0.858	0.894	0.918	0.919	0.903	0.901	0.904	0.898	0.890	0.892	0.883
53	0.741	0.777	0.833	0.870	0.917	0.896	0.887	0.864	0.860	0.888	0.913	0.922	0.904	0.901	0.907	0.895	0.896	0.893	0.888
54	0.750	0.766	0.838	0.859	0.921	0.905	0.877	0.860	0.857	0.880	0.895	0.902	0.889	0.885	0.891	0.888	0.871	0.876	0.868
55	0.757	0.763	0.836	0.839	0.949	0.991	0.935	0.929	0.851	0.896	0.938	0.948	0.931	0.927	0.935	0.925	0.922	0.922	0.918
56	0.764	0.751	0.822	0.824	0.949	0.950	0.908	0.876	0.830	0.842	0.870	0.882	0.879	0.875	0.879	0.875	0.872	0.873	0.863
57	0.752	0.749	0.810	0.804	0.960	0.916	0.873	0.858	0.808	0.827	0.872	0.867	0.862	0.862	0.859	0.856	0.857	0.855	0.853
58	0.738	0.739	0.786	0.781	0.975	0.906	0.875	0.859	0.814	0.845	0.872	0.885	0.877	0.870	0.867	0.861	0.863	0.858	0.848
59	0.733	0.739	0.768	0.777	0.966	0.872	0.827	0.817	0.770	0.791	0.811	0.824	0.817	0.824	0.810	0.813	0.811	0.813	0.802
60	0.715	0.736	0.735	0.791	0.942	0.862	0.817	0.812	0.771	0.773	0.797	0.800	0.799	0.811	0.804	0.799	0.790	0.795	0.793
61	0.687	0.703	0.720	0.786	0.916	0.839	0.798	0.813	0.724	0.756	0.794	0.801	0.810	0.812	0.801	0.803	0.793	0.794	0.790
62	0.644	0.656	0.674	0.800	0.929	0.868	0.825	0.830	0.728	0.761	0.815	0.812	0.818	0.826	0.805	0.811	0.797	0.803	0.788
63	0.589	0.586	0.625	0.812	0.894	0.843	0.784	0.790	0.675	0.731	0.751	0.747	0.758	0.762	0.740	0.748	0.744	0.748	0.743
64	0.548	0.541	0.582	0.737	0.769	0.721	0.681	0.706	0.596	0.638	0.676	0.676	0.675	0.669	0.662	0.678	0.665	0.673	0.643
65	0.474	0.474	0.557	0.616	0.597	0.562	0.543	0.563	0.475	0.528	0.559	0.567	0.547	0.549	0.544	0.561	0.541	0.547	.
66	0.408	0.419	0.511	0.581	0.569	0.531	0.486	0.429	0.378	0.411	0.423	0.428	0.417	0.427	0.416	0.435	0.416	0.417	.
67	0.384	0.387	0.461	0.514	0.509	0.484	0.452	0.428	0.358	0.399	0.403	0.406	0.397	0.416	0.394	0.421	0.402	0.395	.
68	0.363	0.377	0.413	0.445	0.449	0.419	0.401	0.383	0.322	0.355	0.344	0.342	0.336	0.345	0.329	0.355	0.336	0.340	.
69	0.349	0.367	0.364	0.372	0.386	0.356	0.331	0.328	0.274	0.321	0.302	0.304	0.299	0.307	0.299	0.313	0.298	0.293	.
70	0.311	0.341	0.383	0.401	0.433	0.406	0.402	0.404	0.344	0.348	0.358	0.349	0.360	0.360	0.352	0.364	0.349	.	.

Source: Urban Institute tabulations of MINT5.
Notes: . indicate ages that are not included in MINT5.

Table A5–7. Average Less Censored Male Earnings (excluding zeros) Relative to the Average Wage by Age and Birth Year

Age	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
	Birth Year																		
20	.	0.516	0.495	0.465	0.439	0.496	0.524	0.406	0.354	0.364	0.426	0.424	0.425	0.423	0.424	0.425	0.422	0.427	0.427
21	0.583	0.560	0.565	0.548	0.516	0.578	0.597	0.475	0.419	0.427	0.479	0.480	0.479	0.483	0.477	0.479	0.478	0.481	0.479
22	0.617	0.635	0.656	0.642	0.628	0.661	0.675	0.555	0.489	0.498	0.556	0.547	0.552	0.554	0.547	0.545	0.546	0.549	0.547
23	0.763	0.711	0.740	0.770	0.759	0.780	0.745	0.665	0.576	0.621	0.672	0.675	0.676	0.684	0.674	0.676	0.678	0.685	0.678
24	0.848	0.789	0.812	0.894	0.868	0.874	0.829	0.763	0.651	0.721	0.762	0.771	0.775	0.780	0.777	0.775	0.780	0.789	0.784
25	0.947	0.881	0.894	1.005	0.933	0.958	0.895	0.837	0.728	0.802	0.844	0.850	0.854	0.862	0.853	0.851	0.860	0.863	0.853
26	1.011	0.953	0.991	1.067	1.009	1.029	0.957	0.891	0.809	0.862	0.887	0.891	0.896	0.899	0.892	0.891	0.902	0.903	0.893
27	1.054	1.006	1.073	1.132	1.081	1.070	1.022	0.953	0.881	0.944	0.980	0.983	0.993	0.998	0.991	0.978	0.994	0.988	0.980
28	1.094	1.059	1.145	1.186	1.148	1.117	1.080	0.999	0.945	0.990	1.016	1.018	1.027	1.031	1.031	1.017	1.031	1.025	1.014
29	1.125	1.088	1.220	1.232	1.201	1.157	1.126	1.038	0.996	1.031	1.051	1.073	1.072	1.077	1.066	1.060	1.067	1.064	1.055
30	1.157	1.146	1.257	1.266	1.266	1.199	1.159	1.079	1.052	1.064	1.081	1.098	1.098	1.099	1.095	1.085	1.096	1.096	1.085
31	1.181	1.194	1.288	1.316	1.299	1.249	1.187	1.114	1.094	1.098	1.122	1.132	1.137	1.134	1.136	1.127	1.130	1.140	1.126
32	1.196	1.231	1.312	1.356	1.331	1.272	1.198	1.148	1.121	1.119	1.150	1.157	1.162	1.163	1.165	1.151	1.160	1.167	1.156
33	1.222	1.275	1.337	1.400	1.349	1.306	1.226	1.180	1.133	1.170	1.192	1.204	1.202	1.208	1.209	1.192	1.201	1.204	1.198
34	1.247	1.314	1.362	1.432	1.374	1.323	1.249	1.202	1.150	1.169	1.178	1.198	1.200	1.203	1.203	1.186	1.193	1.195	1.188
35	1.255	1.336	1.387	1.476	1.394	1.342	1.256	1.221	1.170	1.191	1.224	1.241	1.242	1.242	1.243	1.234	1.239	1.236	1.226
36	1.293	1.349	1.433	1.486	1.425	1.343	1.280	1.237	1.177	1.227	1.243	1.263	1.268	1.267	1.263	1.251	1.262	1.263	1.248
37	1.316	1.363	1.449	1.491	1.436	1.348	1.290	1.241	1.205	1.244	1.260	1.282	1.286	1.284	1.278	1.271	1.285	1.280	1.263
38	1.348	1.392	1.493	1.501	1.454	1.350	1.304	1.252	1.193	1.245	1.264	1.290	1.290	1.292	1.288	1.282	1.287	1.288	1.270
39	1.375	1.421	1.499	1.516	1.472	1.368	1.301	1.256	1.204	1.235	1.264	1.289	1.284	1.276	1.285	1.268	1.281	1.278	1.256
40	1.400	1.440	1.511	1.514	1.469	1.368	1.294	1.262	1.199	1.228	1.263	1.287	1.276	1.274	1.277	1.267	1.273	1.265	1.248
41	1.404	1.449	1.528	1.531	1.465	1.374	1.300	1.271	1.226	1.253	1.291	1.314	1.307	1.309	1.306	1.295	1.311	1.305	1.287
42	1.399	1.478	1.544	1.537	1.469	1.381	1.302	1.274	1.225	1.252	1.291	1.321	1.316	1.323	1.319	1.306	1.312	1.309	1.294
43	1.415	1.507	1.529	1.536	1.466	1.388	1.308	1.261	1.226	1.251	1.283	1.304	1.295	1.291	1.287	1.275	1.289	1.289	1.269
44	1.437	1.534	1.520	1.534	1.465	1.367	1.299	1.251	1.221	1.248	1.271	1.295	1.277	1.281	1.271	1.253	1.264	1.261	1.239
45	1.453	1.550	1.509	1.528	1.470	1.366	1.303	1.261	1.239	1.264	1.281	1.302	1.290	1.294	1.285	1.278	1.287	1.284	1.263
46	1.488	1.534	1.514	1.521	1.471	1.355	1.292	1.263	1.214	1.263	1.276	1.306	1.298	1.305	1.301	1.293	1.300	1.296	1.280
47	1.499	1.544	1.515	1.508	1.465	1.350	1.277	1.256	1.211	1.245	1.280	1.299	1.299	1.299	1.293	1.285	1.288	1.286	1.270
48	1.496	1.531	1.516	1.494	1.458	1.339	1.267	1.243	1.224	1.232	1.244	1.261	1.256	1.258	1.247	1.244	1.246	1.243	1.228
49	1.513	1.522	1.499	1.485	1.429	1.329	1.251	1.225	1.186	1.217	1.250	1.269	1.270	1.268	1.259	1.256	1.259	1.257	1.243
50	1.521	1.524	1.483	1.474	1.412	1.312	1.251	1.212	1.168	1.211	1.255	1.270	1.267	1.264	1.254	1.250	1.253	1.251	1.235
51	1.530	1.531	1.469	1.473	1.398	1.308	1.240	1.215	1.176	1.207	1.229	1.251	1.246	1.240	1.232	1.230	1.233	1.231	1.222

Table A5–7. Average Less Censored Male Earnings (excluding zeros) Relative to the Average Wage by Age and Birth Year

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
52	1.511	1.499	1.447	1.452	1.388	1.291	1.237	1.207	1.157	1.210	1.217	1.253	1.238	1.231	1.223	1.220	1.225	1.225	1.211
53	1.511	1.495	1.422	1.422	1.366	1.276	1.217	1.191	1.172	1.197	1.214	1.241	1.233	1.221	1.217	1.209	1.226	1.223	1.211
54	1.492	1.471	1.407	1.393	1.345	1.250	1.197	1.168	1.157	1.155	1.188	1.208	1.193	1.181	1.187	1.178	1.192	1.187	1.172
55	1.473	1.436	1.376	1.346	1.355	1.341	1.249	1.222	1.182	1.195	1.230	1.256	1.252	1.238	1.243	1.227	1.247	1.245	1.231
56	1.453	1.393	1.325	1.304	1.364	1.317	1.216	1.195	1.133	1.180	1.205	1.238	1.232	1.225	1.227	1.209	1.234	1.238	1.216
57	1.404	1.361	1.296	1.267	1.373	1.300	1.203	1.181	1.146	1.137	1.169	1.192	1.179	1.164	1.174	1.165	1.190	1.185	1.167
58	1.376	1.314	1.254	1.226	1.418	1.289	1.197	1.179	1.091	1.131	1.157	1.178	1.164	1.158	1.170	1.151	1.173	1.174	1.159
59	1.343	1.258	1.204	1.182	1.427	1.250	1.170	1.141	1.065	1.086	1.111	1.128	1.123	1.111	1.117	1.103	1.109	1.124	1.100
60	1.267	1.203	1.143	1.175	1.358	1.210	1.134	1.102	1.047	1.084	1.120	1.131	1.126	1.112	1.121	1.106	1.124	1.118	1.106
61	1.215	1.138	1.077	1.171	1.347	1.195	1.096	1.090	1.038	1.070	1.094	1.124	1.120	1.105	1.117	1.095	1.123	1.122	1.104
62	1.103	1.033	0.990	1.175	1.365	1.238	1.130	1.119	1.039	1.075	1.136	1.159	1.141	1.124	1.131	1.113	1.143	1.136	1.124
63	0.996	0.907	0.901	1.158	1.305	1.193	1.091	1.103	0.994	1.041	1.107	1.118	1.125	1.116	1.120	1.098	1.129	1.137	1.134
64	0.914	0.839	0.841	1.091	1.209	1.095	0.990	1.022	0.823	0.988	1.046	1.076	1.069	1.057	1.048	1.032	1.068	1.064	1.046
65	0.768	0.746	0.812	0.937	1.014	0.892	0.847	0.862	0.704	0.790	0.842	0.868	0.870	0.862	0.851	0.837	0.870	0.856	.
66	0.653	0.631	0.755	0.810	0.952	0.858	0.746	0.677	0.561	0.614	0.680	0.704	0.691	0.678	0.667	0.666	0.676	0.654	.
67	0.596	0.588	0.689	0.705	0.833	0.764	0.667	0.677	0.559	0.607	0.648	0.684	0.679	0.672	0.670	0.674	0.672	0.673	.
68	0.555	0.561	0.618	0.617	0.700	0.646	0.577	0.619	0.486	0.545	0.603	0.633	0.625	0.623	0.613	0.613	0.621	0.620	.
69	0.504	0.533	0.536	0.519	0.587	0.535	0.485	0.519	0.404	0.451	0.531	0.541	0.543	0.529	0.522	0.530	0.519	0.520	.
70	0.483	0.540	0.644	0.608	0.706	0.682	0.623	0.634	0.519	0.555	0.641	0.644	0.667	0.637	0.631	0.631	0.646	.	.

Source: Urban Institute tabulations of MINT5.

Notes: . indicate ages that are not included in MINT5.

Table A5–8. Average Less Censored Earnings Relative to the Average Wage Female High School Dropouts, by Age and Birth Year (including zeros)

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
20	.	0.121	0.107	0.097	0.118	0.108	0.120	0.108	0.107	0.096	0.087	0.101	0.098	0.077	0.076	0.090	0.085	0.086	0.086
21	0.096	0.118	0.107	0.109	0.124	0.119	0.139	0.114	0.133	0.110	0.095	0.114	0.097	0.092	0.089	0.103	0.100	0.099	0.099
22	0.113	0.124	0.113	0.121	0.122	0.137	0.149	0.122	0.128	0.115	0.092	0.116	0.097	0.099	0.097	0.101	0.103	0.098	0.096
23	0.123	0.113	0.120	0.140	0.128	0.137	0.134	0.128	0.132	0.134	0.098	0.106	0.096	0.092	0.088	0.096	0.096	0.099	0.092
24	0.123	0.114	0.109	0.145	0.137	0.147	0.143	0.142	0.146	0.165	0.112	0.121	0.113	0.108	0.102	0.102	0.105	0.105	0.103
25	0.133	0.104	0.124	0.163	0.140	0.165	0.153	0.150	0.140	0.180	0.112	0.114	0.108	0.103	0.097	0.095	0.100	0.099	0.093
26	0.131	0.109	0.133	0.162	0.138	0.179	0.157	0.166	0.157	0.193	0.134	0.124	0.126	0.125	0.114	0.123	0.129	0.115	0.115
27	0.131	0.109	0.144	0.177	0.148	0.184	0.159	0.176	0.157	0.213	0.157	0.164	0.145	0.130	0.130	0.140	0.140	0.139	0.144
28	0.128	0.113	0.153	0.188	0.170	0.192	0.166	0.187	0.172	0.225	0.180	0.178	0.151	0.148	0.150	0.155	0.153	0.160	0.156
29	0.128	0.117	0.168	0.197	0.183	0.184	0.179	0.188	0.180	0.238	0.196	0.190	0.163	0.163	0.167	0.165	0.166	0.171	0.169
30	0.135	0.127	0.173	0.199	0.193	0.177	0.185	0.200	0.200	0.246	0.199	0.197	0.179	0.175	0.171	0.172	0.177	0.178	0.174
31	0.134	0.139	0.183	0.200	0.194	0.186	0.198	0.210	0.241	0.245	0.202	0.199	0.172	0.170	0.168	0.172	0.176	0.181	0.175
32	0.143	0.158	0.193	0.218	0.198	0.195	0.209	0.230	0.246	0.259	0.215	0.221	0.190	0.183	0.188	0.189	0.188	0.196	0.197
33	0.149	0.166	0.196	0.229	0.200	0.211	0.211	0.256	0.261	0.270	0.236	0.241	0.206	0.201	0.203	0.201	0.206	0.214	0.214
34	0.155	0.189	0.208	0.244	0.202	0.221	0.226	0.259	0.253	0.280	0.233	0.243	0.215	0.216	0.209	0.209	0.210	0.223	0.222
35	0.168	0.207	0.218	0.256	0.210	0.231	0.229	0.271	0.266	0.339	0.269	0.272	0.243	0.240	0.241	0.234	0.237	0.248	0.247
36	0.178	0.218	0.232	0.276	0.224	0.252	0.241	0.289	0.268	0.347	0.276	0.286	0.255	0.251	0.260	0.254	0.255	0.269	0.265
37	0.190	0.225	0.239	0.289	0.235	0.256	0.249	0.294	0.288	0.351	0.296	0.288	0.257	0.251	0.261	0.256	0.255	0.265	0.256
38	0.198	0.231	0.242	0.289	0.228	0.268	0.254	0.297	0.299	0.336	0.292	0.281	0.256	0.258	0.261	0.254	0.249	0.263	0.254
39	0.219	0.234	0.252	0.290	0.242	0.273	0.257	0.295	0.337	0.344	0.282	0.280	0.259	0.252	0.260	0.249	0.251	0.262	0.256
40	0.234	0.234	0.268	0.302	0.258	0.267	0.262	0.298	0.309	0.319	0.261	0.252	0.235	0.235	0.240	0.234	0.227	0.243	0.241
41	0.236	0.233	0.278	0.307	0.256	0.277	0.276	0.309	0.316	0.314	0.243	0.246	0.227	0.236	0.238	0.241	0.233	0.247	0.244
42	0.247	0.240	0.286	0.308	0.255	0.291	0.285	0.325	0.341	0.347	0.276	0.275	0.254	0.259	0.263	0.263	0.256	0.265	0.262
43	0.255	0.252	0.273	0.306	0.255	0.285	0.286	0.332	0.350	0.354	0.287	0.286	0.263	0.267	0.269	0.270	0.270	0.275	0.271
44	0.253	0.255	0.276	0.312	0.258	0.281	0.287	0.336	0.357	0.358	0.304	0.299	0.274	0.288	0.289	0.280	0.287	0.289	0.289
45	0.255	0.261	0.277	0.311	0.261	0.295	0.284	0.346	0.356	0.377	0.311	0.328	0.297	0.314	0.311	0.298	0.301	0.310	0.308
46	0.260	0.269	0.278	0.311	0.264	0.296	0.292	0.355	0.380	0.381	0.321	0.329	0.304	0.313	0.316	0.311	0.309	0.312	0.313
47	0.258	0.262	0.275	0.316	0.261	0.307	0.304	0.357	0.372	0.430	0.377	0.367	0.345	0.343	0.342	0.334	0.335	0.337	0.329
48	0.256	0.260	0.277	0.317	0.258	0.316	0.304	0.360	0.393	0.435	0.414	0.378	0.348	0.352	0.351	0.341	0.338	0.346	0.342
49	0.259	0.267	0.274	0.318	0.257	0.310	0.312	0.355	0.391	0.410	0.374	0.341	0.320	0.316	0.319	0.309	0.317	0.320	0.320
50	0.263	0.266	0.266	0.309	0.252	0.300	0.299	0.351	0.390	0.379	0.330	0.317	0.308	0.304	0.301	0.298	0.309	0.308	0.309

Table A5–8. Average Less Censored Earnings Relative to the Average Wage Female High School Dropouts, by Age and Birth Year (including zeros)

Age	Birth Year 1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
51	0.258	0.266	0.257	0.301	0.249	0.314	0.311	0.357	0.403	0.343	0.284	0.281	0.272	0.278	0.275	0.270	0.286	0.271	0.275
52	0.256	0.264	0.244	0.294	0.248	0.310	0.308	0.352	0.401	0.378	0.337	0.312	0.307	0.313	0.315	0.305	0.315	0.310	0.308
53	0.250	0.261	0.239	0.276	0.242	0.300	0.303	0.348	0.395	0.374	0.325	0.313	0.308	0.310	0.312	0.295	0.309	0.300	0.303
54	0.247	0.259	0.238	0.270	0.232	0.305	0.295	0.340	0.381	0.362	0.325	0.309	0.314	0.311	0.312	0.288	0.301	0.291	0.305
55	0.241	0.241	0.227	0.260	0.231	0.278	0.259	0.314	0.304	0.378	0.311	0.291	0.301	0.280	0.287	0.274	0.268	0.258	0.283
56	0.233	0.234	0.221	0.261	0.229	0.278	0.258	0.306	0.280	0.320	0.300	0.275	0.307	0.282	0.279	0.291	0.286	0.273	0.276
57	0.226	0.230	0.218	0.244	0.217	0.288	0.250	0.284	0.285	0.330	0.286	0.273	0.265	0.259	0.269	0.260	0.267	0.252	0.265
58	0.215	0.213	0.210	0.227	0.215	0.269	0.245	0.277	0.276	0.289	0.257	0.246	0.250	0.230	0.240	0.242	0.239	0.235	0.242
59	0.202	0.205	0.191	0.219	0.210	0.248	0.212	0.253	0.259	0.265	0.247	0.218	0.233	0.214	0.224	0.219	0.223	0.215	0.220
60	0.190	0.184	0.182	0.220	0.203	0.246	0.197	0.245	0.265	0.271	0.241	0.228	0.217	0.229	0.230	0.209	0.211	0.204	0.212
61	0.173	0.166	0.159	0.209	0.198	0.216	0.189	0.226	0.257	0.242	0.211	0.215	0.190	0.202	0.207	0.193	0.187	0.186	0.194
62	0.146	0.146	0.142	0.180	0.163	0.182	0.164	0.194	0.176	0.209	0.180	0.190	0.161	0.179	0.177	0.165	0.154	0.168	0.163
63	0.110	0.117	0.117	0.145	0.118	0.138	0.115	0.131	0.132	0.142	0.132	0.145	0.131	0.130	0.131	0.127	0.120	0.124	0.125
64	0.089	0.095	0.093	0.094	0.080	0.089	0.086	0.105	0.090	0.105	0.106	0.115	0.118	0.089	0.093	0.101	0.090	0.090	0.085
65	0.069	0.082	0.079	0.072	0.053	0.059	0.060	0.074	0.067	0.067	0.066	0.071	0.078	0.059	0.058	0.066	0.061	0.057	.
66	0.052	0.062	0.060	0.050	0.038	0.048	0.045	0.052	0.054	0.054	0.058	0.055	0.057	0.048	0.044	0.048	0.044	0.043	.
67	0.039	0.049	0.041	0.036	0.029	0.036	0.033	0.039	0.032	0.040	0.042	0.042	0.043	0.039	0.040	0.039	0.038	0.036	.
68	0.032	0.044	0.029	0.027	0.020	0.021	0.024	0.026	0.022	0.021	0.019	0.021	0.018	0.021	0.020	0.022	0.021	0.020	.
69	0.029	0.040	0.020	0.019	0.014	0.015	0.017	0.021	0.017	0.015	0.015	0.016	0.015	0.016	0.014	0.017	0.016	0.011	.
70	0.025	0.033	0.021	0.020	0.015	0.016	0.015	0.020	0.019	0.014	0.012	0.014	0.014	0.016	0.015	0.018	0.017	.	.

Source: Urban Institute tabulations of MINT5.

Notes: . indicate ages that are not included in MINT5.

Table A5–9. Average Less Censored Earnings Relative to the Average Wage
Female High School Graduates, by Age and Birth Year (including zeros)

Age	Birth Year																		
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
20	.	0.335	0.331	0.293	0.341	0.317	0.332	0.287	0.275	0.258	0.269	0.268	0.265	0.260	0.262	0.257	0.263	0.258	0.259
21	0.352	0.324	0.317	0.314	0.364	0.353	0.377	0.335	0.311	0.299	0.319	0.320	0.316	0.312	0.311	0.309	0.315	0.309	0.311
22	0.340	0.301	0.305	0.321	0.370	0.382	0.406	0.379	0.355	0.353	0.360	0.367	0.365	0.358	0.362	0.356	0.360	0.360	0.358
23	0.290	0.269	0.272	0.310	0.365	0.400	0.426	0.417	0.384	0.378	0.386	0.395	0.391	0.387	0.387	0.382	0.384	0.391	0.383
24	0.266	0.243	0.248	0.300	0.359	0.407	0.436	0.447	0.408	0.419	0.427	0.433	0.430	0.427	0.426	0.426	0.423	0.432	0.427
25	0.238	0.229	0.234	0.285	0.350	0.409	0.446	0.467	0.425	0.446	0.455	0.463	0.459	0.452	0.454	0.455	0.452	0.459	0.448
26	0.225	0.205	0.225	0.279	0.342	0.410	0.459	0.476	0.442	0.448	0.465	0.468	0.471	0.464	0.467	0.468	0.467	0.474	0.464
27	0.213	0.193	0.226	0.269	0.347	0.419	0.471	0.482	0.443	0.469	0.482	0.483	0.485	0.476	0.481	0.478	0.481	0.483	0.476
28	0.202	0.180	0.232	0.261	0.358	0.428	0.488	0.485	0.464	0.468	0.468	0.477	0.480	0.470	0.479	0.473	0.475	0.474	0.470
29	0.193	0.177	0.238	0.258	0.375	0.441	0.500	0.492	0.474	0.475	0.479	0.484	0.487	0.478	0.485	0.483	0.482	0.483	0.479
30	0.193	0.183	0.243	0.272	0.383	0.459	0.510	0.495	0.467	0.478	0.474	0.473	0.482	0.475	0.479	0.480	0.477	0.481	0.475
31	0.190	0.195	0.245	0.284	0.400	0.489	0.514	0.504	0.483	0.489	0.486	0.481	0.495	0.489	0.492	0.492	0.491	0.500	0.489
32	0.189	0.205	0.259	0.304	0.421	0.499	0.525	0.512	0.495	0.507	0.512	0.506	0.519	0.512	0.515	0.516	0.513	0.522	0.510
33	0.188	0.217	0.278	0.329	0.447	0.517	0.537	0.525	0.511	0.525	0.525	0.521	0.537	0.530	0.533	0.534	0.533	0.539	0.533
34	0.198	0.236	0.293	0.348	0.479	0.536	0.545	0.532	0.509	0.532	0.532	0.526	0.545	0.536	0.544	0.543	0.546	0.549	0.549
35	0.208	0.259	0.304	0.375	0.499	0.553	0.558	0.543	0.538	0.554	0.555	0.552	0.564	0.560	0.565	0.559	0.562	0.564	0.563
36	0.220	0.274	0.326	0.397	0.531	0.570	0.570	0.559	0.538	0.560	0.554	0.551	0.566	0.564	0.562	0.561	0.568	0.567	0.566
37	0.232	0.295	0.362	0.429	0.562	0.587	0.582	0.574	0.544	0.566	0.563	0.556	0.570	0.569	0.574	0.568	0.572	0.573	0.568
38	0.255	0.311	0.390	0.458	0.582	0.600	0.590	0.578	0.557	0.579	0.585	0.579	0.591	0.591	0.594	0.586	0.592	0.594	0.586
39	0.273	0.325	0.413	0.483	0.602	0.611	0.599	0.587	0.560	0.588	0.585	0.583	0.597	0.593	0.593	0.587	0.591	0.598	0.589
40	0.287	0.339	0.434	0.516	0.616	0.628	0.611	0.601	0.571	0.606	0.609	0.609	0.623	0.617	0.624	0.616	0.612	0.620	0.612
41	0.313	0.347	0.443	0.545	0.629	0.641	0.621	0.606	0.575	0.632	0.619	0.623	0.636	0.628	0.636	0.625	0.625	0.628	0.628
42	0.331	0.369	0.464	0.564	0.637	0.652	0.631	0.613	0.584	0.630	0.621	0.624	0.630	0.621	0.633	0.617	0.620	0.624	0.620
43	0.337	0.391	0.493	0.578	0.654	0.657	0.636	0.621	0.601	0.619	0.624	0.626	0.635	0.625	0.639	0.624	0.627	0.631	0.630
44	0.343	0.403	0.506	0.591	0.663	0.659	0.644	0.630	0.615	0.634	0.642	0.641	0.648	0.638	0.652	0.634	0.639	0.641	0.638
45	0.359	0.414	0.523	0.598	0.668	0.663	0.646	0.639	0.615	0.631	0.656	0.650	0.657	0.646	0.661	0.642	0.645	0.650	0.645
46	0.368	0.425	0.545	0.610	0.668	0.668	0.645	0.646	0.606	0.636	0.650	0.645	0.656	0.643	0.658	0.640	0.644	0.649	0.645
47	0.377	0.447	0.552	0.610	0.668	0.666	0.639	0.639	0.607	0.633	0.646	0.640	0.650	0.643	0.653	0.642	0.644	0.649	0.649
48	0.384	0.463	0.562	0.615	0.665	0.668	0.637	0.640	0.609	0.625	0.646	0.637	0.643	0.642	0.650	0.636	0.638	0.641	0.643
49	0.392	0.476	0.567	0.615	0.658	0.665	0.639	0.634	0.598	0.621	0.639	0.638	0.644	0.639	0.647	0.632	0.638	0.640	0.636
50	0.400	0.492	0.572	0.609	0.651	0.655	0.632	0.620	0.597	0.598	0.619	0.619	0.630	0.627	0.634	0.622	0.622	0.623	0.618

Table A5–9. Average Less Censored Earnings Relative to the Average Wage
Female High School Graduates, by Age and Birth Year (including zeros)

Age	Birth Year																		
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
51	0.403	0.507	0.568	0.606	0.643	0.647	0.627	0.620	0.594	0.597	0.602	0.602	0.608	0.601	0.610	0.601	0.606	0.604	0.601
52	0.409	0.505	0.564	0.595	0.642	0.637	0.622	0.617	0.596	0.592	0.607	0.605	0.609	0.601	0.612	0.603	0.607	0.607	0.604
53	0.415	0.505	0.562	0.580	0.626	0.621	0.612	0.602	0.591	0.586	0.594	0.597	0.601	0.592	0.603	0.593	0.599	0.599	0.593
54	0.424	0.498	0.556	0.567	0.612	0.616	0.598	0.584	0.568	0.557	0.568	0.572	0.578	0.569	0.578	0.570	0.574	0.572	0.573
55	0.427	0.495	0.550	0.547	0.613	0.619	0.594	0.579	0.538	0.563	0.581	0.583	0.587	0.577	0.592	0.580	0.582	0.586	0.581
56	0.430	0.479	0.531	0.527	0.605	0.587	0.567	0.544	0.526	0.517	0.523	0.528	0.531	0.519	0.532	0.517	0.528	0.532	0.518
57	0.414	0.467	0.500	0.498	0.600	0.564	0.537	0.518	0.493	0.504	0.510	0.507	0.512	0.502	0.512	0.496	0.510	0.510	0.512
58	0.394	0.448	0.476	0.478	0.597	0.539	0.516	0.503	0.485	0.475	0.506	0.504	0.504	0.494	0.507	0.492	0.501	0.504	0.494
59	0.386	0.432	0.451	0.454	0.575	0.491	0.474	0.465	0.436	0.441	0.456	0.453	0.447	0.442	0.448	0.433	0.449	0.449	0.444
60	0.361	0.407	0.417	0.443	0.549	0.471	0.457	0.450	0.422	0.414	0.445	0.444	0.448	0.441	0.447	0.440	0.440	0.447	0.440
61	0.327	0.370	0.390	0.416	0.508	0.424	0.418	0.412	0.369	0.383	0.408	0.408	0.415	0.405	0.417	0.406	0.409	0.414	0.408
62	0.277	0.330	0.341	0.376	0.462	0.395	0.378	0.378	0.316	0.323	0.361	0.355	0.362	0.358	0.364	0.355	0.354	0.358	0.349
63	0.225	0.262	0.277	0.309	0.366	0.305	0.288	0.292	0.251	0.237	0.257	0.250	0.263	0.263	0.258	0.255	0.258	0.263	0.251
64	0.190	0.222	0.240	0.238	0.270	0.221	0.211	0.214	0.177	0.179	0.197	0.185	0.196	0.195	0.195	0.191	0.194	0.197	0.174
65	0.152	0.179	0.201	0.177	0.183	0.145	0.142	0.148	0.126	0.118	0.133	0.127	0.132	0.129	0.130	0.129	0.131	0.132	.
66	0.108	0.128	0.156	0.130	0.140	0.111	0.104	0.093	0.090	0.082	0.080	0.078	0.081	0.080	0.078	0.080	0.080	0.079	.
67	0.088	0.108	0.121	0.099	0.110	0.086	0.082	0.073	0.074	0.067	0.060	0.057	0.060	0.059	0.058	0.061	0.060	0.063	.
68	0.073	0.097	0.093	0.070	0.079	0.060	0.059	0.056	0.056	0.051	0.046	0.043	0.046	0.044	0.044	0.045	0.045	0.044	.
69	0.063	0.087	0.071	0.054	0.060	0.044	0.044	0.044	0.043	0.043	0.035	0.034	0.037	0.035	0.035	0.036	0.035	0.032	.
70	0.053	0.071	0.066	0.060	0.067	0.054	0.054	0.052	0.050	0.049	0.043	0.040	0.042	0.040	0.040	0.040	0.040	.	.

Source: Urban Institute tabulations of MINT5.
Notes: . indicate ages that are not included in MINT5.

Table A5–10. Average Less Censored Earnings Relative to the Average Wage
Female College Graduates, by Age and Birth Year (including zeros)

Age	Birth Year 1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
20	.	0.150	0.156	0.147	0.165	0.165	0.183	0.173	0.194	0.175	0.177	0.181	0.181	0.181	0.181	0.174	0.181	0.173	0.180
21	0.172	0.179	0.189	0.193	0.205	0.203	0.216	0.208	0.215	0.208	0.214	0.219	0.219	0.217	0.220	0.211	0.219	0.213	0.221
22	0.210	0.279	0.289	0.308	0.311	0.319	0.320	0.319	0.302	0.299	0.296	0.301	0.306	0.303	0.305	0.299	0.305	0.299	0.303
23	0.283	0.340	0.383	0.427	0.474	0.500	0.514	0.529	0.485	0.491	0.483	0.494	0.496	0.488	0.490	0.482	0.490	0.481	0.487
24	0.289	0.342	0.380	0.467	0.526	0.567	0.644	0.702	0.625	0.642	0.629	0.643	0.640	0.635	0.635	0.626	0.635	0.623	0.627
25	0.269	0.335	0.351	0.487	0.532	0.598	0.724	0.800	0.709	0.755	0.743	0.767	0.761	0.757	0.755	0.745	0.755	0.747	0.739
26	0.242	0.308	0.332	0.482	0.528	0.623	0.802	0.853	0.788	0.820	0.794	0.813	0.812	0.806	0.799	0.793	0.793	0.793	0.774
27	0.227	0.287	0.324	0.445	0.536	0.656	0.849	0.906	0.848	0.874	0.840	0.855	0.857	0.850	0.851	0.839	0.846	0.836	0.824
28	0.222	0.275	0.338	0.425	0.548	0.694	0.891	0.930	0.887	0.899	0.851	0.864	0.868	0.860	0.856	0.843	0.851	0.842	0.831
29	0.222	0.257	0.334	0.416	0.560	0.724	0.932	0.958	0.910	0.943	0.894	0.909	0.908	0.909	0.897	0.887	0.898	0.883	0.889
30	0.224	0.233	0.344	0.407	0.567	0.771	0.941	0.957	0.933	0.954	0.871	0.902	0.897	0.898	0.893	0.883	0.895	0.882	0.891
31	0.242	0.239	0.355	0.411	0.574	0.821	0.946	0.971	0.922	0.968	0.888	0.935	0.915	0.918	0.910	0.899	0.913	0.903	0.908
32	0.240	0.269	0.351	0.433	0.621	0.847	0.954	0.967	0.921	0.969	0.893	0.944	0.911	0.918	0.908	0.906	0.909	0.905	0.910
33	0.238	0.277	0.349	0.461	0.657	0.867	0.975	0.961	0.934	1.011	0.937	0.988	0.945	0.954	0.940	0.941	0.942	0.935	0.945
34	0.260	0.285	0.377	0.476	0.706	0.897	0.981	0.955	0.950	0.993	0.927	0.967	0.935	0.946	0.928	0.928	0.932	0.923	0.930
35	0.273	0.318	0.402	0.501	0.754	0.928	1.005	0.951	0.937	0.973	0.909	0.943	0.914	0.923	0.912	0.908	0.913	0.902	0.917
36	0.297	0.341	0.436	0.517	0.805	0.946	1.006	0.943	0.943	0.960	0.897	0.941	0.912	0.919	0.912	0.905	0.913	0.900	0.913
37	0.308	0.352	0.466	0.601	0.860	0.966	1.012	0.948	0.912	0.963	0.902	0.942	0.914	0.915	0.911	0.903	0.908	0.896	0.912
38	0.342	0.389	0.485	0.670	0.903	0.986	1.016	0.956	0.905	0.975	0.930	0.961	0.947	0.943	0.942	0.938	0.940	0.923	0.944
39	0.370	0.422	0.502	0.722	0.958	1.009	1.019	0.956	0.911	0.967	0.921	0.949	0.942	0.941	0.935	0.935	0.936	0.918	0.946
40	0.418	0.452	0.532	0.797	0.981	1.028	1.022	0.971	0.919	0.944	0.921	0.946	0.935	0.935	0.928	0.930	0.927	0.913	0.935
41	0.436	0.478	0.563	0.872	1.016	1.051	1.039	0.985	0.929	0.926	0.928	0.949	0.944	0.943	0.933	0.941	0.934	0.923	0.938
42	0.458	0.507	0.645	0.918	1.044	1.076	1.050	0.979	0.938	0.934	0.927	0.964	0.952	0.952	0.939	0.944	0.946	0.929	0.958
43	0.501	0.539	0.705	0.952	1.084	1.079	1.059	0.982	0.946	0.974	0.959	0.998	0.982	0.978	0.968	0.970	0.966	0.954	0.976
44	0.527	0.554	0.774	0.988	1.104	1.077	1.057	0.986	0.959	0.953	0.948	0.985	0.971	0.972	0.957	0.964	0.962	0.948	0.971
45	0.561	0.574	0.846	1.017	1.125	1.078	1.076	0.996	0.978	0.961	0.943	0.982	0.963	0.968	0.954	0.958	0.956	0.939	0.967
46	0.555	0.576	0.918	1.043	1.138	1.081	1.068	0.999	0.987	0.979	0.956	0.994	0.973	0.974	0.963	0.966	0.960	0.947	0.966
47	0.573	0.656	0.958	1.071	1.153	1.074	1.059	0.991	0.983	0.980	0.953	0.994	0.967	0.968	0.963	0.961	0.954	0.940	0.964
48	0.595	0.741	0.982	1.095	1.159	1.086	1.061	0.998	0.974	0.984	0.961	0.999	0.967	0.966	0.959	0.957	0.950	0.939	0.964
49	0.620	0.793	1.011	1.124	1.148	1.089	1.048	1.007	0.981	0.974	0.974	1.010	0.982	0.979	0.967	0.962	0.954	0.944	0.966

Table A5–10. Average Less Censored Earnings Relative to the Average Wage Female College Graduates, by Age and Birth Year (including zeros)

Age	Birth Year 1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
50	0.626	0.857	1.021	1.123	1.130	1.072	1.043	0.994	0.981	0.974	0.966	1.005	0.975	0.972	0.961	0.956	0.950	0.936	0.951
51	0.638	0.901	1.014	1.112	1.111	1.062	1.036	0.990	0.960	0.967	0.965	0.998	0.966	0.962	0.958	0.953	0.943	0.935	0.949
52	0.677	0.920	1.032	1.122	1.116	1.062	1.028	0.971	0.960	0.957	0.956	0.987	0.946	0.943	0.939	0.930	0.925	0.919	0.926
53	0.727	0.922	1.035	1.092	1.100	1.038	1.012	0.953	0.932	0.938	0.941	0.977	0.942	0.935	0.940	0.928	0.927	0.916	0.926
54	0.771	0.902	1.040	1.082	1.078	1.018	0.983	0.936	0.955	0.924	0.912	0.936	0.904	0.902	0.901	0.896	0.881	0.885	0.888
55	0.805	0.892	1.040	1.039	1.110	1.113	1.051	1.060	0.915	0.920	0.934	0.963	0.939	0.932	0.931	0.921	0.923	0.915	0.923
56	0.844	0.866	1.014	0.987	1.091	1.041	0.997	0.968	0.855	0.865	0.849	0.875	0.868	0.869	0.869	0.867	0.866	0.857	0.873
57	0.821	0.824	0.959	0.938	1.102	1.009	0.938	0.943	0.821	0.852	0.866	0.889	0.868	0.873	0.858	0.867	0.867	0.860	0.872
58	0.796	0.791	0.915	0.888	1.113	0.961	0.920	0.927	0.795	0.863	0.857	0.867	0.854	0.852	0.849	0.842	0.853	0.835	0.842
59	0.776	0.761	0.866	0.839	1.085	0.910	0.855	0.858	0.746	0.764	0.776	0.797	0.778	0.794	0.777	0.781	0.778	0.774	0.777
60	0.760	0.727	0.808	0.840	1.036	0.868	0.815	0.809	0.737	0.727	0.699	0.715	0.706	0.717	0.714	0.703	0.703	0.693	0.719
61	0.691	0.649	0.751	0.794	0.957	0.806	0.736	0.787	0.654	0.679	0.681	0.701	0.686	0.694	0.683	0.689	0.680	0.672	0.681
62	0.604	0.574	0.667	0.804	0.951	0.824	0.767	0.791	0.676	0.652	0.699	0.719	0.694	0.714	0.682	0.691	0.687	0.685	0.688
63	0.505	0.458	0.587	0.777	0.827	0.702	0.623	0.665	0.520	0.551	0.564	0.581	0.567	0.578	0.556	0.562	0.559	0.557	0.558
64	0.426	0.372	0.492	0.642	0.621	0.536	0.477	0.522	0.384	0.422	0.466	0.479	0.461	0.463	0.453	0.459	0.452	0.454	0.444
65	0.333	0.288	0.440	0.483	0.423	0.369	0.340	0.375	0.271	0.320	0.360	0.367	0.342	0.350	0.337	0.347	0.334	0.339	.
66	0.231	0.226	0.348	0.395	0.339	0.304	0.256	0.232	0.169	0.185	0.216	0.215	0.206	0.208	0.200	0.211	0.199	0.196	.
67	0.188	0.188	0.284	0.313	0.266	0.241	0.203	0.195	0.129	0.148	0.170	0.165	0.155	0.162	0.153	0.164	0.155	0.143	.
68	0.159	0.157	0.220	0.230	0.195	0.172	0.154	0.145	0.096	0.103	0.105	0.106	0.098	0.100	0.097	0.101	0.100	0.097	.
69	0.139	0.126	0.170	0.164	0.145	0.123	0.113	0.108	0.067	0.080	0.080	0.080	0.074	0.076	0.075	0.076	0.076	0.076	.
70	0.110	0.103	0.166	0.131	0.143	0.123	0.116	0.123	0.085	0.085	0.097	0.092	0.089	0.090	0.089	0.091	0.089	.	.

Source: Urban Institute tabulations of MINT5.

Notes: . indicate ages that are not included in MINT5.

Table A5–11. Average Less Censored Earnings Relative to the Average Wage
Male High School Dropouts, by Age and Birth Year (including zeros)

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
20	.	0.354	0.405	0.393	0.449	0.398	0.383	0.267	0.225	0.236	0.309	0.301	0.298	0.310	0.315	0.306	0.312	0.310	0.298
21	0.384	0.396	0.465	0.481	0.507	0.441	0.408	0.285	0.274	0.265	0.313	0.317	0.302	0.314	0.325	0.310	0.319	0.320	0.295
22	0.392	0.463	0.518	0.568	0.564	0.468	0.435	0.322	0.309	0.280	0.306	0.310	0.284	0.301	0.311	0.287	0.290	0.292	0.275
23	0.489	0.574	0.568	0.635	0.618	0.508	0.448	0.368	0.344	0.288	0.311	0.321	0.302	0.310	0.321	0.315	0.326	0.339	0.317
24	0.572	0.646	0.609	0.710	0.658	0.526	0.462	0.404	0.376	0.337	0.343	0.357	0.369	0.356	0.370	0.365	0.375	0.371	0.378
25	0.652	0.668	0.666	0.760	0.660	0.549	0.481	0.442	0.411	0.381	0.404	0.418	0.409	0.398	0.406	0.409	0.420	0.402	0.417
26	0.722	0.697	0.731	0.787	0.675	0.565	0.486	0.453	0.439	0.398	0.391	0.396	0.382	0.368	0.377	0.382	0.391	0.380	0.364
27	0.765	0.719	0.776	0.827	0.684	0.575	0.492	0.477	0.486	0.439	0.442	0.467	0.459	0.432	0.444	0.442	0.462	0.447	0.414
28	0.800	0.747	0.838	0.821	0.723	0.553	0.530	0.496	0.468	0.454	0.433	0.459	0.451	0.430	0.439	0.441	0.458	0.442	0.424
29	0.820	0.755	0.896	0.841	0.722	0.548	0.571	0.509	0.479	0.482	0.436	0.466	0.455	0.443	0.440	0.442	0.442	0.435	0.418
30	0.838	0.802	0.906	0.828	0.737	0.545	0.595	0.516	0.499	0.468	0.400	0.424	0.409	0.398	0.398	0.403	0.410	0.406	0.375
31	0.852	0.844	0.919	0.850	0.725	0.562	0.622	0.544	0.522	0.473	0.427	0.448	0.445	0.427	0.437	0.443	0.446	0.451	0.424
32	0.858	0.868	0.918	0.852	0.731	0.581	0.611	0.529	0.496	0.504	0.457	0.449	0.431	0.410	0.420	0.422	0.409	0.422	0.383
33	0.876	0.897	0.933	0.868	0.719	0.589	0.621	0.558	0.526	0.534	0.468	0.470	0.444	0.430	0.433	0.439	0.427	0.442	0.405
34	0.894	0.928	0.944	0.877	0.690	0.607	0.617	0.563	0.505	0.573	0.473	0.480	0.446	0.439	0.443	0.441	0.431	0.435	0.401
35	0.896	0.928	0.941	0.900	0.698	0.625	0.618	0.567	0.557	0.561	0.493	0.488	0.451	0.445	0.440	0.441	0.426	0.424	0.392
36	0.924	0.940	0.957	0.899	0.692	0.604	0.629	0.562	0.491	0.556	0.518	0.503	0.462	0.457	0.448	0.449	0.440	0.448	0.410
37	0.955	0.955	0.967	0.859	0.696	0.615	0.629	0.553	0.498	0.561	0.503	0.495	0.460	0.448	0.439	0.441	0.436	0.436	0.406
38	0.985	0.965	0.967	0.841	0.718	0.607	0.623	0.566	0.493	0.564	0.528	0.517	0.485	0.467	0.471	0.466	0.461	0.457	0.430
39	0.993	0.971	0.963	0.809	0.726	0.615	0.626	0.549	0.524	0.582	0.542	0.535	0.499	0.493	0.490	0.482	0.489	0.475	0.441
40	1.010	0.973	0.961	0.791	0.713	0.598	0.637	0.558	0.520	0.583	0.548	0.530	0.511	0.501	0.500	0.495	0.493	0.493	0.463
41	1.025	0.967	0.967	0.780	0.710	0.608	0.648	0.554	0.554	0.613	0.577	0.577	0.545	0.552	0.546	0.536	0.524	0.514	0.487
42	1.005	0.981	0.951	0.768	0.694	0.606	0.623	0.541	0.578	0.654	0.672	0.654	0.624	0.635	0.613	0.619	0.607	0.584	0.565
43	1.019	0.987	0.912	0.767	0.684	0.594	0.618	0.553	0.575	0.613	0.590	0.560	0.531	0.530	0.518	0.514	0.522	0.507	0.487
44	1.037	0.965	0.923	0.766	0.651	0.591	0.599	0.555	0.582	0.582	0.549	0.516	0.496	0.488	0.481	0.465	0.474	0.468	0.449
45	1.015	0.982	0.888	0.773	0.652	0.575	0.584	0.548	0.549	0.601	0.553	0.528	0.504	0.508	0.498	0.488	0.496	0.483	0.472
46	1.032	0.945	0.867	0.752	0.635	0.576	0.593	0.542	0.567	0.574	0.517	0.505	0.490	0.479	0.478	0.469	0.486	0.467	0.461
47	1.021	0.937	0.847	0.743	0.631	0.557	0.584	0.537	0.546	0.548	0.498	0.481	0.459	0.464	0.460	0.445	0.459	0.438	0.438
48	1.014	0.904	0.830	0.728	0.614	0.560	0.585	0.548	0.570	0.550	0.476	0.478	0.453	0.451	0.445	0.433	0.452	0.426	0.420
49	1.015	0.862	0.813	0.700	0.599	0.545	0.563	0.543	0.541	0.597	0.523	0.551	0.567	0.543	0.555	0.536	0.573	0.549	0.568
50	1.012	0.863	0.815	0.689	0.580	0.545	0.573	0.544	0.559	0.568	0.470	0.499	0.489	0.475	0.482	0.473	0.499	0.474	0.479

Table A5–11. Average Less Censored Earnings Relative to the Average Wage Male High School Dropouts, by Age and Birth Year (including zeros)

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
51	0.989	0.862	0.787	0.686	0.557	0.542	0.547	0.532	0.555	0.577	0.511	0.530	0.531	0.502	0.510	0.504	0.536	0.509	0.524
52	0.972	0.845	0.753	0.658	0.545	0.514	0.538	0.525	0.529	0.569	0.537	0.553	0.552	0.520	0.520	0.518	0.543	0.518	0.521
53	0.948	0.815	0.711	0.654	0.528	0.507	0.524	0.517	0.531	0.569	0.531	0.560	0.569	0.542	0.550	0.541	0.569	0.539	0.559
54	0.921	0.796	0.679	0.628	0.514	0.499	0.517	0.512	0.521	0.545	0.489	0.513	0.497	0.492	0.492	0.475	0.494	0.470	0.477
55	0.884	0.754	0.656	0.597	0.495	0.483	0.532	0.461	0.393	0.404	0.327	0.355	0.356	0.347	0.340	0.342	0.348	0.339	0.318
56	0.862	0.707	0.636	0.577	0.490	0.482	0.503	0.439	0.394	0.422	0.374	0.390	0.381	0.378	0.369	0.363	0.364	0.350	0.344
57	0.837	0.680	0.603	0.548	0.485	0.450	0.483	0.445	0.378	0.407	0.351	0.369	0.357	0.332	0.341	0.343	0.349	0.336	0.325
58	0.802	0.638	0.567	0.513	0.465	0.413	0.478	0.436	0.381	0.390	0.348	0.369	0.361	0.345	0.355	0.353	0.360	0.348	0.350
59	0.755	0.599	0.531	0.487	0.434	0.387	0.435	0.392	0.350	0.379	0.343	0.354	0.349	0.338	0.343	0.333	0.342	0.324	0.324
60	0.686	0.553	0.496	0.444	0.399	0.362	0.408	0.375	0.327	0.325	0.301	0.312	0.312	0.302	0.311	0.315	0.315	0.315	0.302
61	0.636	0.514	0.455	0.432	0.366	0.324	0.365	0.312	0.306	0.340	0.311	0.311	0.292	0.312	0.302	0.287	0.282	0.272	0.257
62	0.519	0.429	0.385	0.365	0.327	0.329	0.307	0.292	0.269	0.254	0.225	0.230	0.214	0.221	0.226	0.204	0.211	0.204	0.190
63	0.359	0.292	0.285	0.280	0.249	0.257	0.235	0.215	0.206	0.176	0.177	0.174	0.152	0.154	0.150	0.149	0.155	0.156	0.139
64	0.284	0.239	0.235	0.213	0.183	0.183	0.187	0.150	0.150	0.101	0.117	0.112	0.100	0.092	0.100	0.096	0.091	0.094	0.101
65	0.203	0.180	0.198	0.146	0.130	0.126	0.129	0.104	0.093	0.081	0.084	0.077	0.073	0.073	0.079	0.076	0.076	0.078	.
66	0.137	0.125	0.155	0.110	0.099	0.102	0.094	0.077	0.071	0.075	0.106	0.089	0.079	0.086	0.085	0.076	0.078	0.074	.
67	0.110	0.103	0.125	0.081	0.079	0.079	0.075	0.060	0.065	0.044	0.052	0.042	0.040	0.040	0.046	0.045	0.044	0.047	.
68	0.097	0.086	0.101	0.063	0.055	0.060	0.055	0.046	0.049	0.037	0.044	0.035	0.035	0.033	0.037	0.035	0.037	0.038	.
69	0.081	0.083	0.075	0.049	0.038	0.044	0.044	0.032	0.036	0.023	0.019	0.020	0.019	0.019	0.021	0.019	0.022	0.025	.
70	0.078	0.086	0.099	0.060	0.055	0.056	0.050	0.052	0.050	0.030	0.015	0.016	0.015	0.018	0.021	0.020	0.020	.	.

Source: Urban Institute tabulations of MINT5.
Notes: . indicate ages that are not included in MINT5.

Table A5–12. Average Less Censored Earnings Relative to the Average Wage Male High School Graduates, by Age and Birth Year (including zeros)

	Birth Year																		
Age	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
20	.	0.370	0.490	0.497	0.479	0.533	0.557	0.420	0.374	0.391	0.433	0.438	0.441	0.439	0.432	0.435	0.433	0.436	0.432
21	0.409	0.343	0.608	0.602	0.573	0.629	0.642	0.506	0.446	0.460	0.509	0.511	0.514	0.516	0.499	0.506	0.506	0.508	0.503
22	0.424	0.463	0.698	0.705	0.684	0.709	0.707	0.582	0.519	0.532	0.588	0.571	0.582	0.582	0.563	0.565	0.568	0.572	0.564
23	0.514	0.620	0.771	0.819	0.786	0.783	0.731	0.657	0.575	0.624	0.655	0.652	0.660	0.662	0.644	0.651	0.649	0.654	0.649
24	0.662	0.766	0.825	0.924	0.862	0.848	0.775	0.717	0.610	0.683	0.702	0.706	0.710	0.712	0.697	0.700	0.698	0.708	0.699
25	0.803	0.871	0.898	1.004	0.898	0.904	0.817	0.767	0.659	0.744	0.758	0.769	0.777	0.779	0.761	0.768	0.767	0.774	0.765
26	0.882	0.951	0.991	1.042	0.957	0.944	0.864	0.803	0.736	0.781	0.792	0.794	0.799	0.801	0.797	0.795	0.796	0.803	0.797
27	0.936	0.976	1.050	1.075	1.004	0.965	0.911	0.848	0.777	0.837	0.851	0.853	0.862	0.867	0.861	0.853	0.859	0.858	0.856
28	0.979	1.014	1.116	1.109	1.051	0.976	0.963	0.870	0.814	0.853	0.873	0.880	0.886	0.894	0.888	0.882	0.883	0.889	0.878
29	1.029	1.039	1.166	1.143	1.073	0.995	0.995	0.892	0.859	0.887	0.903	0.924	0.923	0.926	0.917	0.912	0.912	0.918	0.908
30	1.046	1.078	1.192	1.161	1.114	1.036	1.020	0.910	0.891	0.901	0.915	0.929	0.926	0.925	0.916	0.908	0.913	0.916	0.913
31	1.071	1.122	1.208	1.191	1.134	1.085	1.036	0.921	0.918	0.918	0.945	0.953	0.951	0.949	0.948	0.940	0.940	0.948	0.939
32	1.091	1.148	1.229	1.223	1.153	1.091	1.043	0.948	0.926	0.928	0.962	0.962	0.962	0.960	0.955	0.946	0.949	0.954	0.949
33	1.108	1.191	1.242	1.260	1.167	1.125	1.049	0.972	0.908	0.958	0.980	0.984	0.989	0.986	0.985	0.971	0.970	0.970	0.969
34	1.131	1.220	1.254	1.284	1.198	1.130	1.058	0.988	0.920	0.955	0.982	0.985	0.993	0.985	0.983	0.975	0.971	0.974	0.972
35	1.135	1.238	1.277	1.297	1.225	1.139	1.059	0.997	0.923	0.964	1.005	1.011	1.016	1.005	1.007	0.996	0.994	0.996	0.992
36	1.157	1.244	1.315	1.306	1.254	1.143	1.067	1.004	0.918	0.984	1.002	1.011	1.014	1.009	1.004	0.998	0.989	1.000	0.987
37	1.180	1.251	1.330	1.310	1.258	1.136	1.080	1.001	0.940	0.997	1.030	1.041	1.043	1.036	1.032	1.027	1.020	1.029	1.020
38	1.229	1.265	1.361	1.298	1.264	1.130	1.092	0.999	0.932	1.004	1.028	1.042	1.039	1.035	1.029	1.028	1.015	1.024	1.018
39	1.246	1.287	1.356	1.315	1.272	1.138	1.082	0.999	0.939	0.992	1.009	1.026	1.018	1.009	1.017	1.008	0.998	1.010	0.997
40	1.268	1.297	1.369	1.312	1.274	1.133	1.071	0.994	0.931	0.988	1.018	1.032	1.027	1.016	1.026	1.016	1.007	1.012	1.005
41	1.250	1.299	1.369	1.336	1.248	1.141	1.069	0.994	0.938	0.982	1.009	1.027	1.025	1.026	1.019	1.016	1.008	1.012	1.001
42	1.252	1.325	1.385	1.331	1.242	1.136	1.057	0.988	0.952	0.947	0.963	0.985	0.988	0.991	0.984	0.978	0.973	0.974	0.966
43	1.259	1.335	1.370	1.322	1.238	1.130	1.051	0.985	0.948	0.927	0.990	1.001	0.995	1.000	0.993	0.990	0.981	0.985	0.973
44	1.265	1.354	1.337	1.336	1.230	1.106	1.033	0.966	0.924	0.936	0.979	0.997	0.986	0.992	0.985	0.974	0.966	0.969	0.958
45	1.275	1.352	1.342	1.316	1.222	1.092	1.023	0.971	0.924	0.946	0.966	0.986	0.974	0.979	0.968	0.964	0.959	0.961	0.945
46	1.294	1.327	1.367	1.298	1.216	1.083	1.009	0.966	0.902	0.950	0.960	0.993	0.982	0.991	0.977	0.971	0.969	0.974	0.963
47	1.312	1.350	1.356	1.272	1.202	1.072	0.994	0.949	0.907	0.940	0.951	0.979	0.968	0.977	0.967	0.962	0.959	0.960	0.953
48	1.300	1.334	1.349	1.256	1.183	1.043	0.979	0.935	0.910	0.944	0.944	0.966	0.957	0.959	0.952	0.949	0.944	0.951	0.939
49	1.302	1.338	1.335	1.225	1.158	1.023	0.953	0.916	0.878	0.922	0.945	0.967	0.954	0.956	0.949	0.946	0.937	0.942	0.927
50	1.300	1.346	1.309	1.224	1.128	0.985	0.931	0.895	0.846	0.904	0.929	0.950	0.937	0.946	0.936	0.932	0.923	0.931	0.920

Table A5–12. Average Less Censored Earnings Relative to the Average Wage Male High School Graduates, by Age and Birth Year (including zeros)

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
51	1.279	1.360	1.285	1.215	1.096	0.972	0.922	0.892	0.840	0.901	0.915	0.944	0.931	0.934	0.931	0.924	0.925	0.926	0.914
52	1.265	1.315	1.262	1.191	1.067	0.941	0.911	0.877	0.825	0.898	0.923	0.954	0.934	0.933	0.933	0.928	0.924	0.928	0.917
53	1.263	1.289	1.218	1.150	1.031	0.933	0.892	0.855	0.832	0.889	0.915	0.940	0.930	0.925	0.926	0.914	0.920	0.923	0.910
54	1.252	1.255	1.188	1.098	0.979	0.903	0.862	0.832	0.809	0.835	0.872	0.890	0.871	0.867	0.874	0.867	0.867	0.873	0.854
55	1.246	1.233	1.149	1.051	0.965	0.910	0.854	0.807	0.726	0.774	0.819	0.841	0.830	0.823	0.821	0.814	0.805	0.822	0.809
56	1.229	1.155	1.067	0.996	0.943	0.871	0.819	0.776	0.692	0.747	0.793	0.813	0.809	0.803	0.803	0.799	0.795	0.804	0.790
57	1.162	1.099	1.016	0.938	0.929	0.845	0.791	0.747	0.681	0.721	0.749	0.768	0.762	0.747	0.751	0.743	0.747	0.751	0.740
58	1.105	1.019	0.962	0.891	0.908	0.798	0.733	0.692	0.632	0.681	0.722	0.737	0.731	0.713	0.734	0.725	0.726	0.730	0.718
59	1.047	0.940	0.890	0.823	0.868	0.756	0.688	0.652	0.574	0.619	0.661	0.675	0.683	0.667	0.676	0.673	0.668	0.684	0.656
60	0.956	0.857	0.815	0.767	0.797	0.697	0.633	0.611	0.549	0.593	0.645	0.666	0.659	0.644	0.655	0.651	0.648	0.649	0.633
61	0.862	0.763	0.721	0.719	0.745	0.635	0.576	0.558	0.514	0.552	0.588	0.614	0.611	0.596	0.611	0.600	0.603	0.605	0.590
62	0.707	0.643	0.605	0.643	0.701	0.592	0.521	0.502	0.459	0.503	0.560	0.576	0.570	0.549	0.566	0.554	0.559	0.560	0.544
63	0.535	0.472	0.474	0.491	0.546	0.460	0.390	0.376	0.353	0.356	0.415	0.433	0.425	0.409	0.425	0.416	0.420	0.414	0.399
64	0.433	0.389	0.403	0.382	0.421	0.354	0.290	0.283	0.235	0.284	0.317	0.341	0.331	0.320	0.330	0.320	0.329	0.321	0.317
65	0.314	0.316	0.344	0.268	0.292	0.240	0.200	0.190	0.175	0.198	0.217	0.235	0.229	0.228	0.235	0.229	0.237	0.228	.
66	0.216	0.228	0.262	0.188	0.221	0.182	0.142	0.118	0.118	0.129	0.137	0.156	0.150	0.147	0.155	0.152	0.156	0.150	.
67	0.167	0.182	0.210	0.135	0.166	0.135	0.107	0.094	0.094	0.110	0.110	0.130	0.123	0.119	0.123	0.125	0.129	0.120	.
68	0.135	0.162	0.149	0.095	0.113	0.093	0.076	0.065	0.073	0.069	0.074	0.086	0.080	0.075	0.077	0.074	0.078	0.071	.
69	0.116	0.137	0.105	0.072	0.080	0.069	0.056	0.049	0.057	0.047	0.048	0.052	0.052	0.049	0.050	0.047	0.049	0.046	.
70	0.105	0.129	0.132	0.094	0.115	0.107	0.088	0.080	0.091	0.069	0.073	0.074	0.076	0.071	0.074	0.070	0.070	.	.

Source: Urban Institute tabulations of MINT5.
Notes: . indicate ages that are not included in MINT5.

Table A5–13. Average Less Censored Earnings Relative to the Average Wage Male College Graduates, by Age and Birth Year (including zeros)

	Birth Year																		
Age	**1926-1930**	**1931-1935**	**1936-1940**	**1941-1945**	**1946-1950**	**1951-1955**	**1956-1960**	**1961-1965**	**1966-1970**	**1971-1975**	**1976-1980**	**1981-1985**	**1986-1990**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-2020**
20	.	0.208	0.271	0.273	0.259	0.260	0.267	0.210	0.216	0.201	0.227	0.223	0.222	0.220	0.221	0.219	0.215	0.221	0.221
21	0.208	0.197	0.336	0.311	0.301	0.300	0.293	0.244	0.233	0.239	0.268	0.268	0.260	0.265	0.263	0.266	0.266	0.272	0.275
22	0.252	0.291	0.427	0.396	0.406	0.397	0.389	0.347	0.294	0.311	0.344	0.352	0.341	0.352	0.355	0.354	0.357	0.361	0.369
23	0.348	0.422	0.554	0.558	0.577	0.589	0.575	0.565	0.440	0.508	0.551	0.575	0.552	0.575	0.573	0.573	0.581	0.590	0.590
24	0.447	0.550	0.678	0.717	0.716	0.725	0.726	0.768	0.610	0.704	0.739	0.757	0.739	0.767	0.769	0.769	0.774	0.789	0.798
25	0.609	0.693	0.772	0.856	0.788	0.838	0.856	0.926	0.750	0.844	0.876	0.889	0.875	0.895	0.893	0.892	0.892	0.909	0.905
26	0.741	0.827	0.901	0.962	0.871	0.938	0.995	1.042	0.874	0.991	1.003	0.997	1.000	1.010	0.997	1.000	0.984	1.001	0.999
27	0.872	0.942	1.008	1.070	0.965	1.029	1.118	1.136	0.979	1.097	1.100	1.090	1.099	1.101	1.101	1.088	1.082	1.093	1.094
28	1.009	1.024	1.126	1.140	1.043	1.138	1.227	1.220	1.108	1.153	1.177	1.160	1.170	1.170	1.176	1.160	1.155	1.161	1.157
29	1.116	1.090	1.236	1.189	1.130	1.236	1.320	1.295	1.221	1.229	1.234	1.224	1.230	1.236	1.235	1.230	1.211	1.223	1.226
30	1.203	1.182	1.309	1.255	1.205	1.322	1.389	1.382	1.318	1.281	1.296	1.291	1.293	1.307	1.305	1.305	1.286	1.306	1.299
31	1.248	1.234	1.351	1.305	1.265	1.410	1.457	1.449	1.380	1.351	1.374	1.366	1.384	1.381	1.380	1.383	1.358	1.394	1.381
32	1.280	1.278	1.384	1.360	1.335	1.457	1.490	1.491	1.425	1.393	1.419	1.412	1.427	1.434	1.444	1.440	1.421	1.458	1.454
33	1.338	1.330	1.424	1.397	1.382	1.519	1.535	1.532	1.474	1.439	1.464	1.454	1.461	1.465	1.474	1.478	1.450	1.486	1.482
34	1.375	1.381	1.457	1.453	1.450	1.565	1.561	1.557	1.482	1.476	1.497	1.494	1.503	1.511	1.510	1.510	1.491	1.522	1.522
35	1.396	1.412	1.464	1.491	1.500	1.602	1.584	1.584	1.542	1.482	1.545	1.536	1.539	1.551	1.548	1.555	1.535	1.556	1.566
36	1.445	1.418	1.520	1.516	1.585	1.621	1.624	1.605	1.539	1.523	1.575	1.556	1.563	1.573	1.563	1.579	1.559	1.578	1.581
37	1.478	1.445	1.533	1.556	1.616	1.648	1.643	1.621	1.594	1.568	1.598	1.571	1.591	1.598	1.580	1.604	1.587	1.603	1.604
38	1.473	1.480	1.563	1.615	1.650	1.654	1.635	1.628	1.572	1.561	1.600	1.569	1.595	1.597	1.580	1.602	1.579	1.607	1.604
39	1.538	1.513	1.583	1.679	1.685	1.676	1.654	1.617	1.586	1.544	1.595	1.568	1.590	1.579	1.573	1.584	1.569	1.590	1.579
40	1.547	1.527	1.602	1.754	1.685	1.682	1.654	1.606	1.565	1.522	1.573	1.550	1.558	1.552	1.531	1.551	1.526	1.533	1.526
41	1.529	1.531	1.611	1.798	1.702	1.680	1.673	1.616	1.596	1.566	1.604	1.591	1.595	1.596	1.591	1.606	1.592	1.609	1.612
42	1.544	1.549	1.682	1.812	1.711	1.674	1.666	1.622	1.596	1.542	1.616	1.611	1.607	1.608	1.600	1.618	1.594	1.617	1.625
43	1.533	1.559	1.737	1.813	1.694	1.676	1.665	1.607	1.580	1.565	1.611	1.600	1.604	1.588	1.570	1.597	1.570	1.579	1.588
44	1.556	1.590	1.764	1.812	1.688	1.667	1.643	1.586	1.594	1.525	1.560	1.558	1.552	1.545	1.528	1.547	1.521	1.533	1.539
45	1.564	1.595	1.775	1.822	1.685	1.667	1.633	1.584	1.589	1.530	1.546	1.532	1.536	1.533	1.520	1.537	1.509	1.521	1.526
46	1.585	1.570	1.818	1.825	1.681	1.664	1.603	1.579	1.566	1.551	1.578	1.579	1.571	1.558	1.552	1.564	1.545	1.552	1.556
47	1.581	1.596	1.819	1.813	1.669	1.651	1.576	1.556	1.525	1.496	1.535	1.528	1.541	1.523	1.519	1.523	1.488	1.502	1.505
48	1.568	1.643	1.815	1.787	1.666	1.624	1.549	1.525	1.512	1.476	1.491	1.482	1.491	1.480	1.466	1.482	1.462	1.476	1.479
49	1.572	1.687	1.832	1.793	1.654	1.607	1.530	1.507	1.485	1.455	1.468	1.465	1.477	1.452	1.433	1.447	1.417	1.440	1.437
50	1.578	1.741	1.791	1.777	1.631	1.612	1.537	1.500	1.464	1.436	1.488	1.484	1.500	1.463	1.453	1.474	1.445	1.458	1.448

Table A5–13. Average Less Censored Earnings Relative to the Average Wage Male College Graduates, by Age and Birth Year (including zeros)

Age	Birth Year 1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
51	1.605	1.780	1.771	1.760	1.611	1.590	1.521	1.468	1.449	1.418	1.430	1.433	1.440	1.411	1.393	1.416	1.381	1.398	1.392
52	1.624	1.788	1.733	1.735	1.598	1.547	1.504	1.437	1.430	1.401	1.405	1.418	1.418	1.399	1.383	1.401	1.371	1.392	1.386
53	1.669	1.764	1.731	1.683	1.577	1.523	1.469	1.425	1.415	1.384	1.383	1.385	1.401	1.376	1.359	1.371	1.346	1.361	1.360
54	1.672	1.734	1.714	1.654	1.563	1.500	1.452	1.407	1.400	1.349	1.357	1.362	1.370	1.343	1.338	1.351	1.332	1.345	1.343
55	1.689	1.721	1.648	1.589	1.567	1.648	1.554	1.562	1.460	1.514	1.513	1.533	1.542	1.520	1.523	1.528	1.515	1.530	1.520
56	1.696	1.632	1.577	1.538	1.545	1.609	1.478	1.492	1.412	1.483	1.495	1.541	1.539	1.524	1.511	1.509	1.506	1.529	1.530
57	1.591	1.588	1.521	1.469	1.558	1.557	1.450	1.462	1.380	1.355	1.380	1.400	1.397	1.395	1.382	1.398	1.393	1.394	1.398
58	1.553	1.517	1.438	1.390	1.607	1.562	1.433	1.450	1.264	1.314	1.307	1.323	1.308	1.319	1.312	1.332	1.312	1.345	1.341
59	1.474	1.400	1.354	1.316	1.643	1.496	1.351	1.392	1.244	1.275	1.272	1.285	1.288	1.270	1.258	1.266	1.231	1.269	1.278
60	1.368	1.343	1.255	1.282	1.536	1.380	1.267	1.296	1.168	1.232	1.205	1.215	1.221	1.234	1.220	1.226	1.208	1.225	1.238
61	1.269	1.233	1.174	1.224	1.451	1.307	1.187	1.238	1.103	1.184	1.214	1.246	1.245	1.263	1.231	1.242	1.245	1.259	1.267
62	1.171	1.104	1.051	1.222	1.499	1.389	1.295	1.309	1.106	1.180	1.271	1.313	1.305	1.308	1.286	1.307	1.301	1.314	1.327
63	1.009	0.949	0.916	1.122	1.341	1.233	1.126	1.159	0.903	1.005	1.075	1.093	1.109	1.117	1.102	1.112	1.119	1.154	1.186
64	0.878	0.841	0.797	0.981	1.145	1.052	0.945	0.991	0.675	0.788	0.884	0.898	0.906	0.916	0.889	0.901	0.907	0.926	0.962
65	0.735	0.720	0.730	0.781	0.895	0.804	0.744	0.786	0.541	0.609	0.675	0.699	0.716	0.717	0.700	0.703	0.712	0.723	.
66	0.559	0.565	0.607	0.590	0.738	0.677	0.572	0.541	0.329	0.421	0.461	0.475	0.479	0.475	0.459	0.467	0.466	0.463	.
67	0.461	0.509	0.503	0.454	0.572	0.514	0.444	0.464	0.293	0.329	0.372	0.386	0.390	0.384	0.375	0.387	0.376	0.401	.
68	0.406	0.437	0.399	0.349	0.413	0.373	0.318	0.356	0.200	0.248	0.288	0.299	0.296	0.297	0.292	0.294	0.287	0.291	.
69	0.330	0.382	0.304	0.254	0.301	0.279	0.228	0.258	0.146	0.169	0.199	0.200	0.205	0.194	0.196	0.195	0.189	0.184	.
70	0.289	0.317	0.309	0.261	0.324	0.288	0.252	0.272	0.149	0.175	0.222	0.214	0.235	0.223	0.221	0.217	0.222	.	.

Source: Urban Institute tabulations of MINT5.
Notes: . indicate ages that are not included in MINT5.

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CHAPTER 6

UPDATED PROJECTIONS OF WORK IN RETIREMENT AND SOCIAL SECURITY RETIREMENT BENEFIT TAKE-UP

This chapter first describes changes in MINT's OASI claiming model and then describes changes to the employment and earnings of individuals who have taken up their benefits.

I. BACKGROUND ON OASI CLAIMING MODEL

For MINT5, we added data from the 1996 SIPP to the estimation sample (which originally included just the 1990-1993 panels of the survey) to improve our ability to model the timing of Social Security take-up. One goal of MINT5 was to model more explicitly prospective beneficiaries' response to elimination of the Retirement Earnings Test (RET) for older beneficiaries in 2000. Below, we summarize some of the key issues we addressed and present coefficients from the new models.

MINT3 and MINT4 had separate equations to predict the probability of OASI take-up in any year for each one of three groups: 1.) spouse only recipients; 2.) workers who earned less than (or equal to) the RET in the previous year (henceforth "low earners"); and 3.) workers who earned more than the RET in the previous year (henceforth "high earners"). With the elimination of the RET at/after the normal retirement age (NRA), high earners who had reached the NRA were selected to enter MINT's low-earner equation even if their previous year's earnings were high. Treating high earners at the NRA as if they were low earners increased the probability they would be projected to take up benefits because the low-earner equation generated higher average take-up probabilities than the high-earner equation (a mean of 70.5 percent claiming, compared to 34.6 percent in the respective estimation samples).

Because MINT3 and MINT4 already adjusted behavior for the effect of the RET removal, the specification changes in MINT5 to account for RET were expected to have only modest effects on simulated benefit claiming, and the effects were indeed modest.

II. IMPROVEMENTS TO THE OASI TAKE-UP MODEL

Tables 6–1 through 6–3 compare the coefficients from each of the three models before and after our changes to the claiming model. Adding the 1996 SIPP panel to the estimation sample increased the sample sizes for the three OASI take-up equations significantly (from 628 to 859 in the spouse only equation, from 2,173 to 3,285 in the low-earner equation; and from 3,422 to 4,975 in the high-earner equation). This allowed us to explore the effects of additional interaction terms in the models. In the low-earner and high-earner equations, we added interaction terms between an age 62 dummy variable and other key explanatory variables.[1] We also tested a dummy variable for being in fair or poor health. Finally, to test for the effect of the

[1] Because spouse only beneficiaries' claiming choices appear to be primarily driven by their spouses' behaviors, fewer age 62 interactions appear important in that equation.

Table 6–1. Social Security Take-Up: Logistic Estimates for Spouse Only Beneficiaries

	1990-1993 SIPP		1990-1993, 1996 SIPP	
	Coefficient	Standard error	Coefficient	Standard error
Intercept	-2.6291 **	1.2182	-1.9398 **	0.9421
Demographics				
Age 63	-1.6105 ***	0.2971	-2.0033 ***	0.2802
Age 64	-0.610 *	0.3195	-0.8956 ***	0.3008
Age 65	-0.7893 **	0.3824	-1.0028 ***	0.3526
Age 66	-1.848 ***	0.4702	-2.1729 ***	0.4135
Age 67	-1.997 ***	0.4698	-2.0551 ***	0.4066
Age 68	-1.696 ***	0.5377	-1.5222 ***	0.4918
Age 69	-0.5682	0.7192	-0.458	0.6849
Pension coverage indicators				
DC pension	-0.4133	0.2706	-0.546 **	0.239
Retirement status, lifetime				
Earnings / wealth				
Retired at t	1.435 ***	0.329	1.5813 ***	0.289
Spouse characteristics				
Sp took up Social Sec t-1	1.5205 ***	0.2264	1.6836 ***	0.1967
Sp adjusted PIA	8.8352	6.4407	4.6403	4.938
Sp adjusted PIA squared	-9.8016	8.466	-5.5199	6.6136
Sp lag earnings / avg wage	-0.5621 ***	0.1314	-0.2205 ***	0.0605
Sp lag earnings / avg wage * age 62	0	--	-0.2824 **	0.1156
Sp DB pension indicator	0.1828	0.2106	0.2228	0.1819
Sp DC pension indicator	0.4592 *	0.2748	0.5865 **	0.2405
N (person years)	628		859	
-2 log-likelihood	593.449		1140.45	

Note: * indicates $p < 0.10$, ** indicates $p < 0.05$, *** indicates $p < 0.01$
Data source: 1990 to 1993 SIPP panels matched to SER and MBR. Individuals in the sample have never received disabled worker benefits. Spouse only recipients are defined as persons with zeros PIAs who have living spouses age 62 or older with positive PIAs (i.e., widows are not included).
Path for output: Regs2001.lst, regs2006.lst

Table 6–2. Social Security Take-Up: Logistic Estimates for Low Earners

	1990-1993 SIPP			1990-1993, 1996 SIPP		
	Coefficient		Std error	Coefficie nt		Std error
Intercept	1.0178		0.6724	0.1117		0.7548
Demographics						
Age 63	-2.4470	***	0.1771	-1.7032	***	0.2569
Age 64	-0.4874	***	0.1795	-0.0801		0.2472
Age 65	-0.8079	***	0.2417	0.1909		0.2687
Age 66	-2.1402	***	0.3511	-1.6280	***	0.3702
Age 67	-1.6892	***	0.3671	-1.3649	***	0.3922
Age 68	-2.4754	***	0.5038	-1.8966	***	0.4612
Age 69	0.1386		0.4691	0.2066		0.4439
Education > 12 years	-0.4707	***	0.1309	-0.3096	***	0.107
Hispanic	-0.6936	**	0.3515	-0.3931	*	0.2371
Black or Native American	0.0214		0.1889	-0.1946		0.1486
Asian	-0.9565	***	0.3449	-0.9002	***	0.2878
Widower	-2.4150	***	0.7689	-1.4069	*	0.8123
Widow	-0.9849		0.6864	-0.0446		0.7613
Single male	-0.7765		0.7811	-0.7654		0.8031
Single female	-2.1393	***	0.7592	-1.0519		0.7995
Divorced male	-2.2350	***	0.7099	-1.5501	**	0.7679
Divorced female	-1.4615	**	0.6883	-0.6256		0.7578
Married female	0.1572		0.2086	0.1885		0.173
Pension coverage indicators						
DB pension	0.4535	***	0.1332	0.3556	***	0.1106
Retirement status, lifetime earnings						
Retired at t	1.3396	***	0.1347	1.069	***	0.1575
PIA / average wage	4.5546	***	0.4373	4.1258	***	0.5907
0 < lag earng <= .8 * exempt	0.6448	***	0.1436	0.5115	***	0.1178
Lag earnings > .8 * exempt	0.9724	***	0.2821	0.6281	***	0.2117
Family wealth / avg wage	-0.0167	*	0.00892	0.00202		0.00395
Social Security parameters						
Dual entitlee	0.8891	***	0.2923	0.4508		0.4061
After RET removal post NRA	0		--	0.9051		0.9028
Number of years at taxable max.	0		--	-0.0138		0.00921
Spouse characteristics						
Sp took up Social Sec t-1	1.3377	***	0.1948	1.5821	***	0.17
Sp adjusted PIA	-0.7929		0.5539	-2.3251	***	0.6438
Sp DB pension indicator	0.2303		0.1679	0.2070		0.1393
Sp DC pension indicator	-0.1993		0.1602	-0.1366		0.1392
Spouse age	-0.0372	***	0.0114	-0.0265	**	0.0127
Age 62 interaction terms						
DC pension * age 62	0		--	-0.2040		0.1659
Retired at t * age 62	0		--	0.3499	*	0.2118
PIA / average wage * age 62	0		--	1.5962	***	0.6015
Dual entitlee * age 62	0		--	0.6924		0.5291
Family wealth / avg wage * age 62	0		--	-0.0186	**	0.00849
Sp adjusted PIA * age 62	0		--	2.0847	***	0.7208
N (person years)	2,173			3,285		
-2 log-likelihood	1839.694			3986.763		

Note: * indicates p < 0.10, ** indicates p < 0.05, *** indicates p < 0.01
Data source: 1990 to 1993 and 1996 SIPP panels matched to SER/MBR. Sample individuals have never received disabled worker benefits. Low-earners are defined as individuals with earnings at or below the RET exempt amount.
Path for output: Regs2001.lst/Regs2006.lst

Table 6–3. Social Security Take-Up: Logistic Estimates for High Earners

	1990-93 SIPP			1990-93, 1996 SIPP		
	Coefficient		Standard error	Coefficient		Standard error
Intercept	0.4506	*	0.1804	1.085	***	0.21
Demographics						
Age 63	-0.5017	***	0.141	-1.6261	***	0.26
Age 64	0.9942	***	0.1335	-0.6046	**	0.2616
Age 65	1.372	***	0.1692	0.2507		0.2645
Age 66	0.8049	***	0.2229	-0.5107	*	0.2975
Age 67	0.3876		0.277	-1.0859	***	0.3232
Age 68	-0.4466		0.3748	-1.3883	***	0.3584
Age 69	4.4179	***	0.5148	2.8672	***	0.416
Education > 12 years	-0.3569	**	0.1082	-0.3482	***	0.0836
Health fair or poor	0		--	0.1915	*	0.1148
Pension coverage indicators						
DB pension	0.2839	**	0.1017	0.4156	***	0.0965
DC pension	-0.1897		0.114	0.0173		0.1033
Retirement status, lifetime Earnings / wealth						
Retired at t	3.0785	***	0.1307	2.1085	***	0.1104
Uncap lag earning / avg wage	-0.559	**	0.2279	-0.1741	***	0.0437
Family wealth / avg wage	-0.00912		0.00634	-0.00181		0.00258
Uncap earnings ages 56-61	0.0722		0.0991	0		--
Uncap earnings 56-61 squared	-0.016		0.00863	0		--
Social Security parameters						
Fraction taxed	-2.3881	***	0.2362	-1.3251	***	0.2357
Above taxaway point	-0.5119	***	0.1505	-0.5839	***	0.1421
Spouse characteristics						
Sp took up Social Sec t-1	0.5799	***	0.1435	0.6057	***	0.115
Sp adjusted PIA	-3.5555	**	1.2706	-2.5775	***	0.9954
Sp adjusted PIA squared	4.9475		2.5516	4.0847	**	1.9966
Sp DB pension indicator	0.115		0.1478	0.1119		0.114
Sp DC pension indicator	0.138		0.1354	-0.0428		0.104
Spouse age	-0.00067		0.00228	-0.00314	*	0.00184
Age 62 interaction terms						
DB pension * Age 62	0		--	0.3838	**	0.1716
DC pension * Age 62	0		--	-0.3557	**	0.1725
Uncap lag earning / avg wage * Age 62	0		--	0.1445	**	0.0591
Retired at t * Age 62	0		--	0.8775	***	0.195
Family wealth / avg wage * Age 62	0		--	-0.0386	***	0.0108
Fraction taxed * Age 62	0		--	-2.1906	***	0.4101
Above tax away point * Age 62	0		--	0.8101	***	0.261
N (person years)	3,422			4,975		
-2 log-likelihood	2738.905			6434.322		

Note: * indicates $p < 0.10$, ** indicates $p < 0.05$, *** indicates $p < 0.01$

Data source: 1990 to 1993 and 1996 SIPP panels matched to SER and MBR. Individuals in the three samples have never received disabled worker benefits. High-earners are defined by earnings above exempt amount.

Path for output: Regs2003.lst/Regs2006.lst

RET elimination on low earners, we added a dummy variable for being at or over the NRA after 2000 (when the RET was eliminated for these workers) into the low-earner equation.[2]

The coefficient on the dummy variable for being at or past the NRA after RET elimination is large and positive as anticipated (Table 6–2), meaning that its presence is associated with earlier claiming of benefits. The effect is not statistically significant at the 10 percent confidence level, but we nonetheless retain it. We tested the same indicator in the spousal equation, but it did not have even marginally significant effects. Because no one who is at or over the NRA after 2000 goes into the equation any more, the indicator is undefined in the high-earner equation.[3] The coefficients for the age dummy variables, especially at ages 64 and 65, also change significantly in the revised equations. For example, the coefficient for being age 65 (with a reference category of age 62) in the low earner equation (Table 6–2) changes from large and negative to positive, but it is not statistically significant. In the high earner equation (Table 6–3), the age 64 dummy variable changes sign from positive to negative.

One caveat is that the equations use data from only the first year of the change to the RET. Using data from subsequent years of the change poses substantial difficulties. In the case of the 1996 SIPP panel, we no longer have information on important characteristics such as marital status and, especially, the retirement indicator, which drives claiming in virtually all equations. (Recall that the retirement indicator is coded based on a substantial drop in hours of work, which is available in the monthly SIPP data but not on the SER.) One could substitute a drop in earnings in place of the drop in hours to extend the estimation data beyond the SIPP panel, but this would be done at the expense of other unobserved important explanatory variables beyond the SIPP panel.[4]

III. RESULTS FROM SIMULATIONS USING THE NEW REGRESSION EQUATIONS

Tables 6–4a and 6–4b show the distribution of OASI claiming ages for men and women, respectively, by birth cohort. The table excludes individuals who have ever received disabled worker benefits (and thus does not track conversions from disability benefits), as well as those who die before claiming benefits. We compare individuals in the earlier (1990-1993) SIPP panels (labeled "M1") with those in the later (1996) panel (labeled "M4").[5] (For the comparison

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[2] A simple way to change the claiming model to accommodate the RET elimination at older ages would have been to require all MINT beneficiaries to collect their benefits at the normal retirement age. We did not take this approach because there are still good reasons why individuals might defer claiming of their benefits (e.g., they anticipate that their personal life expectancy is higher than the average for the population as whole, and that therefore they can still increase the present value of their lifetime benefits by waiting to collect benefits and thus receiving delayed retirement credits). Additionally, the empirical evidence supports increased, but not complete, OASI benefit claiming at the normal retirement age and later after removal of the RET.

[3] We did not keep those with high earnings in the high-earner equation after the NRA and simply add the dummy variable for RET elimination in 2000 because many of the key explanatory variables (fraction taxed away by the RET) are no longer defined.

[4] Including the 2001 SIPP panel is also an option, but the match rate to the administrative earnings and benefit records on which the analyses rely heavily is so low that it would call into question the validity of any results. Such analyses were also beyond the scope of work of this contract.

[5] Their claiming patterns are generally similar to those in the immediately neighboring cohorts.

Table 6–4a. Simulated OASI Claiming in MINT5 for Men

	1926-30		1931-35		1936-40		1941-45		1946-50		1951-55		1956-60		1961-65	
Age	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**
60-61	0.92	1.06	0.82	1.35	0.89	0.61	0.46	1.22	0.54	0.84	1.10	1.04	1.43	1.31	1.40	1.47
62	50.48	50.50	52.80	53.82	50.77	52.14	49.86	51.01	42.83	54.13	50.49	48.48	54.73	55.29	53.71	51.95
63	7.58	6.08	6.52	6.02	5.94	5.30	10.18	9.63	10.82	9.27	10.74	9.52	9.57	9.54	9.03	9.08
64	14.32	14.36	12.31	10.34	11.92	10.20	16.16	14.81	15.26	12.16	14.03	14.65	12.58	12.95	13.01	14.76
65	12.59	12.94	13.86	14.73	20.57	20.39	14.49	14.35	14.96	12.32	11.18	12.30	10.40	11.33	11.16	10.83
66	1.25	0.64	1.52	1.49	1.76	1.50	4.03	3.25	7.69	5.70	6.40	6.28	5.37	4.17	3.02	3.72
67	0.66	0.64	0.76	0.85	2.09	2.58	2.13	2.33	3.63	2.45	2.96	3.53	2.89	2.89	4.74	4.63

Source: Authors' tabulations from MINT. Table source is "Projectretirement.sas7bdat" files, so thus excludes post-baseline immigrants.
Notes: Excludes those who receive DI, who are not eligible for benefits, or who die before claiming.

Table 6–4b. Simulated OASI Claiming in MINT5 for Women

	1926-30		1931-35		1936-40		1941-45		1946-50		1951-55		1956-60		1961-65	
Age	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**	**M1**	**M4**
60-61	11.65	11.03	9.85	10.28	8.14	8.65	8.07	8.71	4.8	5.34	5	4.93	4.74	5.03	4.37	4.58
62	53.22	50.94	55.34	53.48	52.47	53.15	52	51.8	53.42	58.74	59.64	58.88	61.73	59.9	59.85	59.69
63	5.85	6.29	5.46	4.92	5.67	4.97	9.61	10.07	11.28	9.21	9.85	10.07	9.59	9.83	10.06	9.49
64	9.14	9.74	8.73	10.77	9.57	8.55	14.82	13.59	12.86	12.58	11.3	12.22	10.48	11.82	11.19	11.75
65	7.91	7.42	9.68	8.12	13.03	13.03	9.22	9.5	9.39	7.97	7.73	6.95	6.96	7.19	7.63	7.58
66	0.83	1.34	0.8	0.39	1.96	1.23	2.35	1.72	3.57	2.32	3.02	3.08	2.67	2.64	2.03	1.79
67	0.57	0.91	0.47	0.66	2.38	2.03	1.21	1.01	1.64	0.86	1.43	1.18	1.56	1.32	2.33	2.38
68+	10.84	12.31	9.68	11.38	6.76	8.39	2.71	3.61	3.04	2.99	2.03	2.69	2.27	2.28	2.53	2.73

Source: Authors' tabulations from MINT. Table source is "Projectretirement.sas7bdat" files, so thus excludes post-baseline immigrants.
Notes: Excludes those who receive DI, who are not eligible for benefits, or who die before claiming.

tables, we include only cohorts present in both the earlier and later SIPP panel and those who were in the United States at the time of the SIPP interviews.)

The projected patterns of benefit claiming by age in MINT5 are generally in line with projections using the earlier versions of MINT (not shown). The percentage of women who receive survivor benefits at ages 60 and 61 is lower in later than in earlier cohorts. Claiming at age 62 remains the mode for both men and women in all of the cohorts. The main difference from earlier projections is a modest decline in claiming after the normal retirement age for those reaching normal retirement age in 2000 and later and more plausible projections of the relative frequency of age 64 and 65 claimants (previous releases of MINT had high fractions of age 64 claimants relative to historical experience).

IV. EMPLOYMENT AND EARNINGS OF SOCIAL SECURITY BENEFICIARIES

MINT5 also updates several of the employment and earnings equations for Social Security beneficiaries. These changes are designed to take better account of the elimination of the RET. In MINT4, the employment and earnings equations for Social Security beneficiaries were estimated using the 1990 through 1993 SIPP panels matched to administrative data (e.g., SER, DER, and MBR) through the mid-1990s. As a result, the regression equations did not account for the 2000 RET elimination. Instead, MINT4 projected the effects of the RET elimination by using results from Friedberg (2000) to adjust the earnings of workers between the NRA and age 69. While better than having no adjustment, using Friedberg's estimates is not ideal because her analysis estimates the effect of the 1983 elimination of the RET for persons ages 70 and 71 and behavioral responses of younger workers to the RET elimination could differ.

The MINT5 equations presented in this report are based on the 1990-1993 and 1996 SIPP panels matched to administrative earnings data through 2004. The use of data through 2004 allows the updated equations to capture the effect on earnings of the 2000 RET elimination for persons between the NRA and age 69. The basic structure of the MINT model is retained. The employment equations are estimated for two groups of Social Security beneficiaries—those ages 60-69 and those ages 70 and above. Also, consistent with MINT4, we separately model the earnings of Social Security beneficiaries in three age groups—under the NRA (ages 60 to 64 in our data),[6] between the NRA and age 69 (ages 65 to 69 in our data), and ages 70 and above.[7] We continue to estimate separate equations for these three age groups, because during the years covered by this analysis (1990-2004), each age group faced different RET threshold amounts.[8]

[6] Beginning at age 62, individuals become eligible for taking-up Social Security retirement benefits. As in the earlier version of MINT, we allow widow(er)s to take up Social Security benefits at ages 60 and 61.
[7] For individuals in our analysis, the NRA is almost always age 65. Our analysis sample does, however, include persons in the 1938 and 1939 birth cohorts, for which the NRA is 65 and 2 months and 65 and 4 months, respectively. Because our analysis is based on annual data (rather than monthly data), we treat the NRA for these individuals to be 65.
[8] In 1995, for example, the RET threshold was $8,160 for beneficiaries under NRA, $11,280 for beneficiaries between the NRA and age 70, and there was no threshold for persons 70 and older as RET did not apply to persons in this age range.

1. List of Equations for Employment and Earnings of Beneficiaries

The re-estimation for MINT5 focuses on beneficiaries ages 65-69. In total, MINT5 includes a total of 11 employment and earning equations for Social Security beneficiaries, seven of which have been updated since MINT4. Below we present the 11 equations, where an "*" indicates the newly estimated regression equations for MINT5.

Employment—5 Equations

Employment of Social Security beneficiaries ages 60-69

1. Employment of *first year* beneficiaries who were *employed* last year (*)
2. Employment of *first year* beneficiaries who were *not employed* last year (*)
3. Employment of *continuing* beneficiaries who were *employed* last year (*)
4. Employment of *continuing* beneficiaries who were *not employed* last year (*)

Employment of Social Security beneficiaries ages 70 and above

5. Employment of beneficiaries ages 70 and above

Earnings—6 Equations

Earnings of Social Security beneficiaries ages 60-64

1. Earnings of *first year* beneficiaries
2. Earnings of *continuing* (second or subsequent year) beneficiaries

Earnings of Social Security beneficiaries ages 65-69

3. Earnings of *first year* beneficiaries (*)
4. Earnings of *second year* beneficiaries (*)
5. Earnings of *third and subsequent year* beneficiaries (*)

Earnings of Social Security beneficiaries ages 70 and above

6. Earnings of beneficiaries ages 70 and above

Below we provide a brief overview of the RET, discuss the data used to estimate the new MINT5 equations, and then present the new models.

2. Brief Background on the Retirement Earnings Test

The Social Security Retirement Earnings Test reduces the Social Security benefits of beneficiaries whose earnings exceed the RET threshold.[9] During the 1990s, the RET existed for beneficiaries under age 70. The Senior Citizens' Freedom to Work Act of 2000, which was

[9] Working beneficiaries who lose benefits because of the RET recover these benefits in actuarial terms through higher future benefits.

signed into law in April 2000, eliminated the RET for individuals between the Normal Retirement Age and age 69. Prior to this legislation, the RET reduced the benefits of beneficiaries between the NRA and 69 by $1 for every $3 of earnings in excess of the RET threshold, where the threshold was equal to $15,500 in 1999.[10]

The RET may have reduced employment and earnings of older Americans and so its removal could increase employment and earnings. Song and Manchester (2007) found that the 2000 removal of the RET increased the employment rate of 65-69-year-olds by 1 to 2 percentage points. Other studies found no effect (e.g., Song 2004; Gruber and Orszag 2001). Numerous studies, however, suggest that the RET removal increased earnings for working beneficiaries (e.g., Song and Manchester 2005; Song 2004; Friedberg 2000).[11] The MINT model has been updated to capture these behavioral responses from eliminating the RET.

3. Discussion of SIPP-Matched Data

For our estimation sample, we use the 1990-93 and 1996 SIPP panels matched to administrative data, including the DER and SER for employment and earnings, MBR to identify beneficiary status, and NUMIDENT to identify deaths. As mentioned above, we use administrative data through 2004, which provide five years of employment and earnings data after the RET removal. These matched data allow us to incorporate into MINT the effect of the RET elimination on the employment and earnings of older beneficiaries.
Using data through 2004, however, presents trade-offs. In the SIPP-matched data file used for this analysis, employment and earnings are available in each year through 2004, but individuals' demographic characteristics come from the SIPP data and are only available through the end of the SIPP panels. The most recent panel used for this analysis—the 1996 SIPP panel—provides information through early 2000 only.

To use the data through 2004, we make assumptions about individuals' demographic characteristics. One important assumption is that marital status changes only as a result of death after 2000 (information on death is available from the NUMIDENT).[12] In other words, we assume that individuals do not remarry or divorce between 2000 and 2004. We also assume no change in educational attainment after 2000, which is a realistic assumption for this age group. For other variables, such as health status, individuals' outcomes in years after the SIPP panel ends are very uncertain. As a result, models that use data through 2004 omit health status. Because of these trade-offs, we also estimate models using data through 2000 only. As discussed in more detail below, some of the preferred specifications are based on data through 2000.

[10] The RET is still in place for beneficiaries between age 62 and the NRA. Beneficiaries in this age range have their benefits reduced by $1 for every $2 of earnings in excess of the RET threshold.
[11] For a more thorough discussion of this literature, see Leonesio (1990) and Ratcliffe et al. (2003).
[12] We only extend the 1996 SIPP panel through 2004. A longer extension would make the assumptions needed to generate individuals' demographic characteristics more questionable.

4. Employment of Social Security Beneficiaries Ages 60-69

As noted above, MINT5 includes four new employment equations for 60-69 year old Social Security beneficiaries:

1. Employment of *first year* beneficiaries who were *employed* the previous year,
2. Employment of *first year* beneficiaries who were *not employed* the previous year,
3. Employment of *continuing* beneficiaries who were *employed* the previous year, and
4. Employment of *continuing* beneficiaries who were *not employed* the previous year.

Each equation is estimated using a logit specification. For beneficiaries who were employed the previous year (equations 1 and 3), we estimate a "stay employed" equation. For beneficiaries who were not employed the previous year (equations 2 and 4), we estimate a "reenter employment" equation. The MINT5 structure of the equations for continuing beneficiaries (equations 3 and 4) is consistent with MINT4. However, for new beneficiaries (equations 1 and 2), MINT5 has two separate employment equations depending on prior employment status, while MINT4 has a single model for employment regardless of prior employment.

Our preliminary analyses allowed different effects of the RET elimination in 2000 and later years because the effect of the elimination might be lower in the first year of implementation than afterwards (particularly since the legislation was not signed into law until April 2000). In addition, we added an interaction term between the "post-2000" indicator variable and an indicator for whether the individual is age 65-69 (because this is the age group directly affected by the policy change). This type of model is referred to as a difference-in-difference model where the interaction term (post-2000*age65-69) is designed to identify the (causal) effect of the RET elimination on 65-69 year olds.[13]

5. Employment in First Year of Social Security Receipt

In our analysis of first-year Social Security beneficiaries (equations 1 and 2), there was not enough data to estimate the coefficient on the key interaction term (i.e., post-2000*age65-69). Among the 5,271 first-year beneficiaries in the "stay employed" equation (equation 1), 237 were 65-69 years old in the post-2000 period and only five of these persons did not stay employed.[14] Among the 2,314 first-year beneficiaries in the "reenter employment" equation (equation 2), only 57 were 65-69 years old in the post-2000 period and of these, only four persons reentered employment. With very few first-year beneficiaries ages 65-69 in the post-2000 period, and only a handful of these switching employment status in their first year of benefit receipt, there are not enough data to estimate the effect of the RET elimination on the employment of first-year beneficiaries ages 65-69.

[13] Song (2004), for example, used a difference-in-difference model and compares the difference in the earnings of persons between the NRA and age 69 before and after the RET elimination with the difference over time of persons in other age groups (those between age 62 and the NRA and between ages 70 and 72).
[14] Education and health are missing for some respondents, so the final estimation samples are slightly smaller.

MINT5 does, however, include updated coefficients for the employment status of first-year Social Security beneficiaries (Table 6–5a) that reflect the expansion of available data through 2004. As in MINT4, these new regression equations include prior employment and earnings, other family economic variables, Social Security eligibility status, and demographic characteristics as variables explaining current employment. As mentioned above, there is a trade-off between including data through 2004 and including demographic characteristics such as health status. In models estimated on data limited to the SIPP panels, health status was not statistically significant, so our final model excludes health and is based on data through 2004.

6. Employment after First Year of Social Security Receipt

For continuing Social Security beneficiaries, we do have enough data to estimate the effect of the RET elimination.[15] For continuing beneficiaries who were *employed at t-1* (equation 3), our analysis of data through 2004 shows no significant effect of the RET elimination on the employment status of 65-69-year-olds. Because we found no effect of the RET elimination, we then estimated this equation including health status, which is available through 2000 only. Our results suggest that health status is a significant predictor of employment status for this group. As a result, our final model includes health status and is estimated on data through 2000 (see Table 6–5b).

For continuing beneficiaries who were *not employed at t-1* (equation 4), our analysis of data through 2004 shows a significant decline in the employment of 60-64-year-olds in the post-2000 period. This strong negative effect for 60-64-year-olds could be due to a relatively weak economy (including the 2001 recession). In addition, our results suggest only a small positive increase in the employment of 65-69-year-olds in the post-2000 period. Because we are reluctant to forecast a large negative effect into the future for 60-64-year-olds, we examined additional models. Using data through 2000, we found that health status is an important predictor of employment reentry for continuing beneficiaries. As a result, similar to our final specification for equation 3, our final model for equation 4 includes health status and is based on data through 2000 (see Table 6–5b).

7. Earnings of Social Security Beneficiaries Ages 65-69

Unlike our employment analysis, we estimate earnings models for 65-69-year-olds separately from those for other ages (i.e., 60-64-year-olds). By doing so, we are not estimating a difference-in-difference earnings model designed to identify the causal effect of the RET elimination on earnings. The goal of this task is to develop regression equations that provide realistic projections of earnings into the future. In preliminary analyses, we estimated difference-in-difference earnings models that captured effects of the change in the RET, but we have incorporated the more straightforward earnings regression equations into MINT5 because it is consistent with the current structure of MINT and the difference-in-difference model did not appear likely to produce better projections.

[15] Of the 27,310 continuing beneficiaries in our "reenter employment" equation, 3,556 were 65-69 years old in the post-2000 period and 194 of these persons reentered employment. Of the 17,803 continuing beneficiaries in our "stay employed" equation, 2,860 were 65-69 years old in the post-2000 period and of these, 515 persons left employment.

Table 6–5a. Logit Hazard Model, Employment of New Social Security Beneficiaries Ages 60-69 SIPP-DER Matched Data[1]

Explanatory Variable	Reenter Employment			Stay Employed		
	Coefficient		Standard Error	Coefficient		Standard Error
***Prior Employment and Earnings*[2]**						
Employed t-2	1.863	***	0.212	0.435	**	0.208
Employed t-3				0.200		0.205
Last Employed t-3	1.045	***	0.270	--		
Last Employed t-4 or t-5	0.657	**	0.259	--		
Log of Lagged Earnings	--			0.968	***	0.121
Log of Lagged Earnings by Age 65-69	--			0.420		0.278
Log of Lagged Earnings by Less than HS	--			0.554	**	0.249
Log of Lagged Earnings by Female	--			0.506	**	0.201
Log of Last Observed Earnings	-0.082		0.139	--		
Log of Last Observed Earnings by Age 65-69	0.638	*	0.345	--		
Spouse Employed t-1	0.414	**	0.193	--		
Other Economic Variables						
AIME / National Average Earnings	--			-0.403	***	0.145
Social Security Eligibility Status						
Spouse or Survivor Beneficiary	--			-0.570	**	0.246
Demographic Characteristics						
Age 63	0.794	***	0.286	0.635	***	0.218
Age 64	0.401		0.298	0.978	***	0.198
Age 65	0.837	**	0.393	0.926	***	0.211
Age 66-69	0.972	**	0.407	1.032	***	0.313
Female	-0.395	**	0.190	0.943	***	0.246
Married	-0.575	***	0.218	0.211		0.180
Married Female	--			-0.660	***	0.252
Education Less than High School	0.203		0.184	0.560	***	0.193
Constant	-2.966	***	0.281	1.583	***	0.295
Pseudo R-Square	0.100			0.164		
Log Likelihood	-574.89			-1373.27		
Observations	2,301			5,240		

Note: * indicates $p < 0.10$, ** indicates $p < 0.05$, *** indicates $p < 0.01$

[1] New beneficiary models are based on data from 1990-2004 and continuing beneficiary models are based on data from 1990-2000. Using data through 2000 (only), allows indicators of pension and health status to be included in the model. These variables are not statistically significant for new beneficiaries.

[2] Log earnings variables are defined as ln[(earnings/national average earnings) + 0.25].

Table 6–5b. Logit Hazard Model, Employment of Continuing Social Security Beneficiaries Ages 60-69, SIPP-DER Matched Data[1]

Explanatory Variable	Reenter Employment			Stay Employed		
	Coefficient		Standard Error	Coefficient		Standard Error
Prior Employment and Earnings[2]						
Employed t-2	1.744	***	0.097	0.475	***	0.081
Last Employed t-3	1.011	***	0.114		--	
Last Employed t-4 or t-5	0.573	***	0.113		--	
Log of Lagged Earnings		--		0.160	*	0.087
Log of Lagged Earnings by Age 65-69		--		0.635	***	0.099
Log of Lagged Earnings by Less than HS		--		0.799	***	0.108
Log of Lagged Earnings by Female		--		0.549	***	0.117
Spouse Employed t-1	0.307	***	0.086	0.386	***	0.086
Spouse Lagged Earnings		--		-0.135	**	0.062
Other Economic Variables						
AIME / National Average Earnings	-0.260	**	0.105	-0.278	***	0.078
Family has a DB or DC Pension	-0.336	***	0.091	-0.127	**	0.059
Social Security Eligibility Status						
Spouse or Survivor Beneficiary	-0.626	***	0.139	0.098	--	0.118
Dually Entitled		--		0.245	**	0.112
In First Complete Year of SS Receipt		--		-0.647	***	0.080
Demographic Characteristics						
Age 63	-0.489	*	0.280	-0.468	**	0.210
Age 64	-0.371		0.271	-0.696	***	0.211
Age 65	-0.380		0.266		--	
Age 66	-0.456	*	0.267		--	
Age 65-69		--		-0.038		0.214
Age 67-69	-0.588	**	0.255		--	
Female	0.060		0.145	0.748	***	0.130
Married	0.153		0.138	0.119		0.089
Married Female	-0.674	***	0.171	-0.388	***	0.117
African American	-0.132		0.133		--	
Education Less than High School	-0.197	**	0.094	0.241	**	0.101
Education More than High School	0.184	**	0.083		--	
Fair or Poor Health	-0.321	***	0.089	-0.189	***	0.060
Constant	-2.608	***	0.289	1.595	***	0.273
Pseudo R-Square		0.093			0.067	
Log Likelihood		-3300.44			-5662.17	
Observations		18,568			11,383	

Note: * indicates $p < 0.10$, ** indicates $p < 0.05$, *** indicates $p < 0.01$.

[1] New beneficiary models are based on data from 1990-2004 and continuing beneficiary models are based on data from 1990-2000. Using data through 2000 (only), allows indicators of pension and health status to be included in the model.

[2] Log earnings variables are defined as ln[(earnings/national average earnings) + 0.25].

Recall that MINT5 includes three new earnings equations for 65-69 year old Social Security beneficiaries:

1. Earnings of *first year* beneficiaries,
2. Earnings of *second year* beneficiaries, and
3. Earnings of *third and subsequent year* beneficiaries.

MINT4 included only two earnings equations for Social Security beneficiaries in this age group: one for first year beneficiaries and a second for continuing (second and subsequent year) beneficiaries. These two equations allowed the relationship between lagged earnings and current earnings to differ between the first and subsequent years of Social Security receipt. In MINT5, we further disaggregate the earnings equations to allow the relationship between lagged earnings and current earnings to differ for second-year recipients and those who have received benefits for three or more years. This is important because the *lagged* earnings of some second-year beneficiaries are high now that first-year beneficiaries over the NRA are no longer subject to the RET.[16] By separating beneficiaries into these three groups, we are able to incorporate a more precise relationship between lagged earnings and current year earnings into MINT. We estimate OLS regression equations, where the dependent variable is the log of earnings.[17]

Theoretically, we expect the RET elimination to have a different effect on persons who are at different points along the earnings distribution. For example, we expect individuals who have been constrained by the RET thresholds (i.e., individuals with relatively high earnings) to have a more significant response to the RET elimination than individuals at the lower end of the income distribution (who have earnings well below the RET thresholds). Much of the empirical research on the RET has found different responses to changes in the RET rules across the earnings distribution (e.g., Song and Manchester 2005; Friedberg 2000; Toder et al. 1999).

In preliminary analyses, we estimated percentile regression models (similar to those estimated by Song and Manchester 2005) and found different effects across the earnings distribution. Our final models incorporate this element; our updated earnings equations include interactions between the post-2000 period and four indicator variables that identify the position of individuals in the earnings distribution for the previous year. Specifically, the models include the following variables:

- An indicator for the post-2000 period (as well as an indicator for year 2000)
- Indicators for having lagged earnings in four percentile groups: 25^{th} through 49^{th} percentile, 50^{th} through 74^{th} percentile, 75^{th} through 94^{th} percentile, and 95^{th} percentile.[18]
- Interactions between the post-2000 period and each of the four percentile groups.

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[16] An individual can first take-up Social Security benefits anywhere in the calendar year (e.g., November), so person's annual earnings in the first year of Social Security receipt can be quite high because *annual* earnings are not subject to an earnings test. Monthly earnings after Social Security take-up, however, are subject to a monthly earnings test.

[17] The dependent variable is defined as the ln[(earnings/national average earnings) +0.25]. Adding 0.25 to the earnings relative to national average earnings reduces the negative skew in the dependent variable.

[18] The omitted category includes those who have earnings in the bottom 25 percent of the earnings distribution.

The coefficients on the post-2000 period variable and on the four interaction terms provide the estimated change associated with RET elimination for the earnings of 65-69-year-old Social Security beneficiaries. These results are presented in Table 6–6.

The last two columns of Table 6–6, for example, show the effect of the RET elimination on 65-69-year-olds who have been Social Security beneficiaries for three or more years. We find a slight negative, although not statistically significant, coefficient on the post-2000 indicator variable. This result suggests that the 2000 RET elimination is not significantly related to the earnings of continuing beneficiaries in the bottom 25 percent of the earnings distribution.[19] The post-2000 indicator variable interacted with the four lagged earnings percentile variables provide information about the changes associated with RET elimination for the earnings of beneficiaries in these four segments of the earnings distribution.[20] For persons who have been beneficiaries for three or more years, we find that the RET elimination is associated with increases in earnings of 4.3 to 5.7 percent for those in the 25-94th percentile of the earnings distribution and 16.3 percent for beneficiaries in the 95th percentile of the earnings distribution.[21] For the other two groups of beneficiaries (first- and second-year beneficiaries), we also find the largest association for persons in the top five percent of the earnings distribution. In addition to information on employment and earnings, these models also include information on AIMEs, Social Security eligibility status, and demographic characteristics.

[19] The post-2000 indicator variable identifies the effect of the RET elimination on the omitted category as compared with the pre-2000 period, which is those with earnings in the bottom 25 percent of the earnings distribution.
[20] The four variables are referred to as follows in Table 6–2: (1) lagged earnings in 25-49 percentile by 2001 plus, (2) lagged earnings in 50-74 percentile by 2001 plus, (3) lagged earnings in 75-94 percentile by 2001 plus, and (4) lagged earnings in 95th percentile by 2001 plus. Precise definitions of these variables are presented in Table 6-3.
[21] The overall effect of the RET elimination for individuals in each percentile group includes the coefficient on the post-2000 indicator variable (-0.017). Since this coefficient is not statistically different from zero, we omit it from the discussion for simplicity.

**Table 6–6. OLS Regression Model, Log Earnings of Social Security Beneficiaries Ages 65-69[1]
SIPP-DER Matched Data 1990-2004**

Explanatory Variable	First Year Beneficiaries		Second Year Beneficiaries		Third & Subsequent Year Beneficiaries	
	Coeff	SE	Coeff	SE	Coeff	SE
Year Indicators						
Year 2000 (RET implemented)	0.036	0.038	0.259 ***	0.049	-0.003	0.014
Post-2000 period (year 2001 plus)	-0.131 ***	0.050	0.039	0.041	-0.017	0.012
Prior Employment and Earnings						
Employed t-1	0.140	0.165	0.281 ***	0.087	0.873 ***	0.047
Log of Last Observed Earnings	0.731 ***	0.057	0.602 ***	0.052		
Log of Last Observed Earnings by Employed t-1[2]	--		--		0.835 ***	0.035
Log of Last Observed Earnings by Not Employed t-1[3]	--		--		0.106 ***	0.021
Lagged Earnings in 25-49 Percentile	0.043	0.040	-0.077 *	0.042	-0.064 ***	0.016
Lagged Earnings in 50-74 Percentile	0.046	0.055	-0.091	0.060	-0.071 ***	0.025
Lagged Earnings in 75-94 Percentile	0.127 *	0.075	-0.226 ***	0.085	-0.093 **	0.040
Lagged Earnings in 95th Percentile	0.130	0.118	-0.298 **	0.135	-0.194 ***	0.071
Lagged Earnings in 25-49 Percentile by Post-2000	0.167 **	0.068	0.142 **	0.062	0.057 ***	0.020
Lagged Earnings in 50-74 Percentile by Post-2000	0.138 *	0.076	0.244 ***	0.068	0.047 ***	0.018
Lagged Earnings in 75-94 Percentile by Post-2000	0.171 **	0.073	0.623 ***	0.092	0.043 *	0.024
Lagged Earnings in 95th Percentile by Post-2000	0.225	0.144	0.944 ***	0.133	0.163 ***	0.056
Spouse Employed t-1	--		--		0.035 ***	0.008
AIME / National Average Earnings	0.080 **	0.033	--		-0.055 ***	0.010
Social Security Eligibility Status						
Spouse or Survivor Beneficiary	0.079	0.056	-0.101 **	0.045	-0.049 ***	0.012
Dually Entitled	0.096	0.062	--		--	
Demographic Characteristics						
Age 66	0.135 **	0.031	0.022	0.026	0.003	0.010
Age 67-69	0.035	0.027	0.173 ***	0.036	0.008	0.009
Female	--		0.050 **	0.025	-0.036 ***	0.014
Married	--		--		-0.014	0.013
Married Female	--		--		-0.022	0.015
African American	--		-0.040	0.042	0.002	0.011
Education High School (only)	0.053 *	0.028	0.022	0.031	0.018 **	0.008
Some College	0.126 ***	0.029	0.030	0.036	0.019 *	0.010
Education College Degree (only)	0.144 ***	0.036	0.057	0.044	0.027 **	0.013
Education More than College Degree	0.109 ***	0.035	0.110 **	0.048	0.037 **	0.016
Constant	-0.395 **	0.170	-0.695 ***	0.096	-0.937 ***	0.026
R-Square	0.708		0.422		0.642	
Observations	1,331		1,651		9,470	
Error Term Variance (Square, Root MSE)	0.1220		0.2307		0.0984	

Note: * indicates $p < 0.10$, ** indicates $p < 0.05$, *** indicates $p < 0.01$.
[1] Log earnings variables are defined as ln[(earnings/national average earnings) + 0.25].
[2] Defined as ln[(last observed earnings/national average earnings) + 0.25] * [employed t-1]. For person employed last year, last observed earnings equals lagged earnings.
[3] Defined as ln[(last observed earnings/national average earnings) + 0.25] * [1 - (employed t-1)].

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CHAPTER 7

UPDATED MODELS OF RETIREMENT BEHAVIOR AND EARNINGS

This chapter summarizes changes to the MINT5 estimates of earnings near "retirement." We added new data to the estimation sample to capture changes in retirement behavior in recent years and implemented a new retirement model based on replacement rates compared to earlier versions of MINT.

I. OVERVIEW

In MINT3 and MINT4, the retirement model was based on the "premium value" model developed by Gustman and Steinmeier (2001) and was estimated using data from the Health and Retirement Study (HRS) matched to administrative records on earnings, Social Security benefits, and defined benefit pensions. Separate probit models were estimated for never-disabled married women, married men, and unmarried people (pooled for men and women), although the user did have the option of using a pooled model for married people as well.[1] (This could be activated using a toggle switch located in the macro *calcretirement* in the program *retcore.inc*.)

We define "retirement" as movement from work of greater than 20 hours per week (i.e., more than half time) to work of less than or equal to 20 hours per week (i.e., less than or equal to half time). In MINT, retirement triggers private pension take-up, causes one to move to a new earnings algorithm, and is a key explanatory variable in the take-up of Social Security benefits (i.e., retired people generally take-up their Social Security benefits in the year of retirement or as soon thereafter as possible). For a full description of the retirement model and related processes, see Chapter 4 in Toder et al. (Favreault et al. 2002).[2]

The MINT5 contract required that we re-estimate this model using additional HRS data. MINT5 also provided for this model to apply to a shorter period than previously used (starting at age 55 instead of age 51, as in previous versions of MINT), with the splicing model that precedes it now projecting earnings though age 54 instead of 50. The Scope of Work required UI to test for the presence of children as an additional explanatory variable in modeling retirement.

In this chapter, we describe the changes in the MINT retirement model. We present results from updated estimates of the premium value model used in earlier versions of MINT and an alternative model based on a replacement rate concept. The final section of the chapter considers how MINT's retirement model should treat cases not matched to the SER, an issue we have discussed with SSA in several meetings and detailed in prior correspondence (Favreault, Smith, and Toder 2006; Favreault and Smith 2006).

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[1] In both the old and the new models, we have treated people in non-marital partner relationships as unmarried (i.e., their partners' economic and demographic characteristics do not enter into the models).

[2] Table 4-1 presents an especially useful description of how various parts of the MINT earnings and retirement model interact.

II. CHANGES TO THE RETIREMENT MODEL

In re-estimating the MINT retirement model, we made the following changes:

Added several waves of HRS data. The original model used 1992 through 1998 data; the new model uses data from 1992 through 2004. Wherever possible, we use the RAND HRS file to maximize consistency in coding of variables across waves. The use of this later release means that more editing and cleaning has been done to the data. We believe this change caused small differences in the estimates.

Added additional HRS cohorts. The HRS "War Babies" (WB) cohorts, born from 1942 to 1947, are now part of the estimation sample.

Changed the underlying regression population. We increased the upper bound of the population from 67 to 70 (the mandatory "retirement" age in MINT) because of the availability of more waves of HRS data.[3] We added additional age dummies to accommodate the new older people and also altered the specification of cohort effects.

Added new SER data. These included the WB SER match (which includes earnings though 1999) and the 2004 permissions SER match (which includes earnings through 2003 for both the original HRS cohorts and the WB cohorts). We continue to remove unmatched cases from the estimation sample. The addition of the 2004 permissions SER match greatly increased the SER earnings match rate compared to the original 1992 and 1998 matches.

Converted from using old PASCAL-based HRS pension software to using new HRS pension software. When estimating defined benefit pension wealth and accruals (including those for combination plans), we use the new software. As in earlier versions of MINT, we use self-reports (rather than the pension software estimates) for defined contribution pension wealth and accruals.

Added several variables found to be important in previous literature to the regressions. These new variables include indicators for self-employment, foreign born status, and homeownership. While these variables were not included in the previous version of MINT, they clearly improve the model fit. Self-employment was previously omitted from the retirement equation because it was not projected in MINT and the projection of immigration is now substantially improved compared with earlier versions of MINT. We also add a dummy variable for whether one's pension plan is a "combination" (both DB and DC) plan. Spousal versions of

[3] We use models estimated over the entire HRS age range (51 to 70), even though these models are now being applied to a shorter age interval (55 to 70). We often use an estimation sample that is as close as possible to the population on which the model will be applied. In certain special cases (e.g., a model that integrates individual-specific error terms), a longer period allows for better parameter estimation. In this case, the parameter estimates are no necessarily any "better" over the longer interval, though the results (e.g., accrual and premium value coefficients) were more likely to be in line with the theory and to be statistically significant, and also less volatile with specification changes. We thus chose to use the models estimated over the longer horizon in MINT5. For detailed comparisons, see our earlier memorandum (Favreault and Smith 2006).

some of these variables (self-employment and combination plan) enter into the equations for married people where relevant.

Changed coding of a few variables (from price indexed to wage-indexed and from, single-year to multi-year). Two variables in the previous models—own and spouse's weighted average of previous earnings--had been specified in price-indexed dollars. We converted this to wage-indexed dollars in MINT5 to make them consistent with most other MINT explanatory variables. (Premium values remain expressed in constant price terms as a percent of recent earnings to enable easier cross-validation with the Gustman and Steinmeier model.) The equation for single people includes a dummy variable for whether a person's earnings were at the taxable maximum at t-1. We changed this to the number of years of earnings above the taxable maximum, which gives a better fit. Finally, we add an interaction term between wealth and sex in the equation for single people.

Experimented with various hours levels thresholds for defining retirement. In sensitivity analyses of the retirement model estimation, we considered several threshold hours levels other than the 21+ hours threshold that we ultimately used. The results suggested that the question of where this threshold should be set is important. SSA ultimately chose to retain the original specification because of the conceptual appeal of defining at least half-time work as the lower bound for non-retired workers.

Updated to more recent Trustees' assumptions. We updated from using the 2001 Social Security trustees' assumptions to the 2006 trustees' assumptions in forecasting Social Security and pension wealth.

Extensively tested the effects of removing those without an SER match from the retirement model estimation sample. Because of concerns about differentials in retirement behavior between those with a match to the SER and those without one, we ultimately implemented an adjustment to the model to account for this differential. We had considered more significant interventions, but fortunately the release by HRS of additional SER match data late in the project reduced the magnitude of this concern and allowed us to go with a more modest adjustment.

III. RESULTS FROM THE MODEL REPLICATION AND NEW MODELS

Tables 7–1 and 7–2 present the probit model results for unmarried and married people, respectively. In both cases, we pool men and women.[4] We present standard errors alongside the

[4] For married people, MINT previously used the separate equations for men and women as the default, with the combined model an option for the user. At SSA's direction, we have reversed this, and made the combined model the default. Part of the rationale for this was that the combined model continued to have stronger results for the premium and accrual variables than either of the alternatives. Furthermore, the coefficients from the combined model are more robust/less volatile in the face of minor specification changes than the alternatives. Another rationale for combining men and women is that we would expect women in future cohorts to behave less distinctly from men with similar work histories and wealth accruals. We have integrated cohort effects in the married women's equation to capture this expected change to some degree, but there could be a more fundamental shift in the relationship to the model parameters.

Table 7–1. Retirement Model for Single People, 1992-2004 Health and Retirement Study Data (Probit Coefficients)

	Premium Value			Replacement Rate		
	Coefficient		Standard Error	Coefficient		Standard Error
Intercept	-0.8737		0.5324	-1.4649	***	0.5247
Ln of average earnings, past 5 years	-0.0768		0.0514	-0.0179		0.0514
Financial wealth / average wage	-0.0019		0.0021	-0.0046		0.0042
Incentives (all divided by weighted average of recent earnings)						
Accrual of retirement wealth, year 1	0.1390	*	0.0760	--		
Accrual of retirement wealth, year 2	-0.1300		0.1286	--		
Premium value of retirement wealth	-0.0678		0.0664	--		
Replacement rate	--			0.2871	***	0.1018
Replacement rate squared	--			-0.0325	**	0.0159
Sex-marital status group (Ref=Divorced female)						
Widow	-0.0736		0.069	-0.0603		0.0686
Widower	0.1299		0.1387	0.0555		0.1383
Never married male	-0.0368		0.1516	-0.0857		0.1489
Never married female	-0.1064		0.1165	-0.1041		0.1161
Divorced male	0.1734	*	0.0887	0.1202		0.0866
Other demographics						
Black	0.1207	*	0.0623	0.1274	**	0.0625
Hispanic	0.1985	*	0.1166	0.2000	*	0.1166
Not a high school graduate	0.0295		0.0717	0.0313		0.0717
Some college	0.0122		0.0682	0.0194		0.0680
College graduate	-0.2348	***	0.0758	-0.2235	***	0.0746
Age 52 (Ref=<51)	0.2726		0.1891	0.2965		0.1874
Age 53	0.3936	**	0.18	0.4127	**	0.1780
Age 54	0.1876		0.1825	0.2317		0.1794
Age 55	0.0111		0.1853	0.0370		0.1825
Age 56	0.2381		0.1771	0.2722		0.1739
Age 57	0.1804		0.1814	0.2118		0.1781
Age 58	0.3391	*	0.1783	0.3798	**	0.1738
Age 59	0.7175	***	0.1729	0.7703	***	0.1680
Age 60	0.9543	***	0.172	0.8895	***	0.1723
Age 61	1.1147	***	0.1753	1.0505	***	0.1751
Age 62	0.8576	***	0.1864	0.7858	***	0.1878
Age 63	1.0754	***	0.1906	0.9886	***	0.1936
Age 64	1.1910	***	0.1988	1.1146	***	0.2012
Age 65	1.0127	***	0.218	0.9125	***	0.2219
Age 66	0.6534	**	0.2722	0.5384	*	0.2752
Age 67 plus	0.9579	***	0.2216	0.8302	***	0.2257
Last HRS cohort (1937-41)*female (ref=<1936)	-0.0839		0.0692	-0.0768		0.0688
Last WB cohort (1942+)*female	0.1301		0.0961	0.1278		0.0957

Continued

Table 7–1. (Continued) Retirement Model for Single People

		Premium Value			Replacement Rate		
Pension coverage indicators							
Have a DB		0.2237	***	0.0597	0.2191	***	0.0596
Have a DC		-0.0568		0.0599	-0.0532		0.0599
Have combination plan	(NEW)	-0.2129		0.1468	-0.2107		0.1468
Data censoring control							
Years at taxable maximum	(NEW)	0.0143	***	0.0045	0.0127	***	0.0045
Health and disability indicators							
Health fair or poor		0.1906	***	0.0718	0.1953	***	0.0716
Disability indicator		0.1646	*	0.0892	0.1599	*	0.0891
Other newly added variables							
Self-employed (ref=work for someone else)		-0.1966	**	0.0986	-0.1654		0.1007
Foreign born (ref=born in US)		-0.1055		0.1101	-0.0951		0.1096
Homeowner (ref=renter)		0.0864		0.0568	0.0770		0.0576
Interact wealth and female dummy		0.0140	***	0.0036	0.0148	***	0.0053
Had one child (ref=no children)	(NEW)	-0.0475		0.1144	-0.0420		0.1141
Had two children	(NEW)	-0.2184	**	0.1071	--		
Had two or more children		--			-0.2154	**	0.0980
Had three children or more	(NEW)	-0.1981	**	0.1008	--		
Missing SER parameter					0.1097	**	0.0536
N (person years)		4,073			4,073		
Log-likelihood		-1656.752828			-1657.78453		

Notes: * indicates p < 0.10, ** indicates p < 0.05, *** indicates p < 0.01.
Individuals who have ever received disabled worker benefits are excluded from the sample, as are individuals who were not working at age 49. Individuals not matched to the SSA Summary Earnings Record are excluded from estimation, except for the missing SER indicator.
Estimation program used: mint_regression_03_24_2007.lst for all coefficients except missing SER indicator, which comes from _regression_01_24_2007.lst.

Table 7–2. Retirement Model for Married People, 1992-2004 Health and Retirement Study Data (Probit Coefficients)

	Premium Value			Replacement Rate		
	Coeffi-cient		Standard Error	Coeffi-cient		Standard Error
Intercept	-0.4872		0.3559	-0.9991	***	0.3413
Ln of average earnings, past 5 years	-0.0963	***	0.0286	-0.0442		0.0296
Financial wealth / average wage	0.0029	***	0.0008	0.002	**	0.0008
Incentives (all divided by weighted average of recent earnings)						
Accrual of retirement wealth, year 1	-0.0160		0.0562	--		
Accrual of retirement wealth, year 2	0.0258		0.0609	--		
Premium value of retirement wealth	-0.0281		0.0294	--		
Replacement rate	--			0.1288	***	0.0358
Replacement rate squared	--			-0.0064	***	0.0025
Other demographics						
Male	-0.1553	**	0.0614	-0.0918		0.0670
Black	-0.0270		0.1762	0.0319		0.1718
Hispanic	0.1720		0.114	0.1557		0.1123
Not a high school graduate	0.0935	*	0.0497	0.1119	**	0.0496
Some college	-0.0502		0.0417	-0.0453		0.0413
College graduate	0.0017		0.0547	-0.0006		0.0543
More than college	-0.0773		0.0644	-0.1016		0.0641
Age 52 (Ref=<51)	0.0340		0.1044	0.0642		0.1021
Age 53	0.0276		0.1031	0.0413		0.0995
Age 54	0.0785		0.1091	0.0857		0.1022
Age 55	0.0932		0.1142	0.1044		0.1032
Age 56	0.1061		0.1268	0.0986		0.1111
Age 57	0.2055		0.1373	0.1876		0.1161
Age 58	0.3503	**	0.1503	0.3365	***	0.1241
Age 59	0.2631		0.1652	0.2515	*	0.1341
Age 60	0.8979	***	0.1774	0.8319	***	0.1407
Age 61	1.0463	***	0.1943	0.962	***	0.1516
Age 62	0.8857	***	0.2122	0.8057	***	0.1664
Age 63	0.8952	***	0.2320	0.8157	***	0.1804
Age 64	1.0269	***	0.2503	0.9267	***	0.1954
Age 65	0.7538	***	0.2758	0.6813	***	0.2155
Age 66	0.7519	**	0.3001	0.6422	***	0.2364
Age 67 plus	0.8768	***	0.3178	0.7012	***	0.2447
Last HRS cohort (1937-41)*female (ref=<1936)	-0.1014	*	0.0608	-0.1223	*	0.0604
Last WB cohort (1942+)*female	0.0216		0.0708	-0.013		0.0707
Last HRS cohort (1937-41)*male (ref=<1936)	-0.1156	**	0.0489	-0.1231	**	0.0488
Last WB cohort (1942+)*male	-0.0600		0.0760	-0.0616		0.0752
Pension coverage indicators						
Have a DB	0.1702	***	0.0373	0.1513	***	0.0372
Have a DC	-0.0713	*	0.0371	-0.0659	*	0.0368
Have combination plan (NEW)	0.0125		0.0820	0.0054		0.0819

Table 7–2. (Continued) Retirement Model for Married People

	Premium Value			Replacement Rate		
Health and disability indicators						
Health fair or poor	0.1560	***	0.0534	0.155	***	0.0534
Disability indicator	0.2790	***	0.0570	0.2777	***	0.0570
Other newly added variables						
Self-employed (ref=work for someone else)	-0.2289	***	0.0522	-0.1968	***	0.0517
Foreign born (ref=born in US)	-0.1184	*	0.063	-0.1136	*	0.0627
Homeowner (ref=renter)	0.0343		0.057	0.0037		0.0560
Spouse Attributes						
Spouse ln of average earnings, past 5 years	-0.0114	**	0.0047	-0.018	***	0.0050
Spouse accrual of retirement wealth, year 1	-0.0004		0.0010	--		
Spouse accrual of retirement wealth, year 2	0.0009		0.0012	--		
Spouse premium value of ret. wealth, female	-0.0007		0.0016	--		
Spouse premium value of ret. wealth, male	-0.0004		0.0007	--		
Spouse present value of earnings	--			0.1162	***	0.0313
Spouse black	0.0316		0.1762	-0.0056		0.1723
Spouse Hispanic	-0.0863		0.1147	-0.0625		0.1129
Age difference	-0.0020		0.0182	-0.0038		0.0130
Spouse age 45-46 (ref= <45)	0.1786		0.1757	0.0432		0.1638
Spouse age 47-48	0.1408		0.1771	0.0236		0.1611
Spouse age 49-50	-0.1726		0.1954	-0.2689		0.1744
Spouse age 51-52	0.1285		0.2112	0.0545		0.1827
Spouse age 53-54	0.1131		0.2376	0.0582		0.2012
Spouse age 55-56	0.1328		0.2667	0.0910		0.2220
Spouse age 57-58	0.1852		0.2980	0.1425		0.2444
Spouse age 59-60	0.2162		0.3300	0.1799		0.2676
Spouse age 61-62	0.1668		0.3631	0.1212		0.2918
Spouse age 63-64	0.1731		0.3971	0.1276		0.3167
Spouse age 65-66	0.1877		0.4333	0.1328		0.3441
Spouse age 67 or higher	0.2190		0.4784	0.1635		0.3833
Spouse has a DB	0.1025	**	0.0413	0.0819	**	0.0415
Spouse has a DC	0.0289		0.0421	0.0090		0.0421
Spouse has combination plan (NEW)	-0.1218		0.1155	-0.1355		0.1164
Spouse self-employed (ref=spouse works for someone else or doesn't work)	-0.0640		0.0517	-0.062		0.0515
Missing SER parameter	--			-0.0588		0.0483
N (person years)	10,566			10,680		
Log-likelihood	-4219.936017			-4267.942176		

Notes: *indicates p < 0.10, ** indicates p < 0.05, *** indicates p < 0.01.
Individuals who have ever received disabled worker benefits are excluded from the sample, as are individuals who were not working at age 49. Individuals not matched to the SSA Summary Earnings Record are excluded from estimation, except for the missing SER indicator. Estimation program used: mint_regression_03_24_2007.lst for all coefficients except missing SER indicator, which comes from _regression_01_24_2007.lst.

coefficient estimates, and asterisks denote statistically significant effects. Premium value model results are in the left hand columns, and replacement rate model results are in the right hand columns. The dependent variable is the probability of retirement, again defined as a drop below 20 hours of work per week.

Many of the model effects are close to those in the previous versions of the model. Health levels and shocks (reflected by self-reported health and disability statuses) are important drivers of retirement in both the premium value and replacement rate models. (Recall that this sample does not include individuals whose disabilities are severe enough to qualify for disability insurance, so it would likely understate the effects of health shocks on work behavior for the broader population.) Age also exhibits the expected patterns; retirement hazard increase with age between ages 58 and 61. Presence of a DB pension increases the probability of retirement, even when controlling for the accruals and premium values, in one model, and replacement rates, in the other model.

The estimated effects of the new variables in the models (self-employment, nativity, and homeownership) are generally consistent with findings in the previous literature. All else equal, self-employed and foreign-born are both less likely to retire than employees or native-born Americans, and homeowners are more likely to retire than renters. The foreign-born and homeowner terms, however, are not statistically significant at the 90 percent confidence level.

In the premium value equations, the accrual and premium value coefficients have the expected signs (positive for wealth accrual in the current year and negative for wealth accrual in the subsequent year and premium value) and the year 1 term wealth term is significant for single people (and also married women, not shown). But the coefficients on second year wealth and premium value are not statistically significant. The Urban Institute premium value model in MINT has generally had less robust coefficients for the accrual and premium value coefficients than Gustman and Steinmeier have estimated. The differences reflect in part the complexity of the calculations and also reflect subtle differences between the two models, especially in the definition of retirement. Gustman and Steinmeier (2001) present an extensive discussion of the complexity of defining retirement and of the prevalence of internal inconsistencies in self-reported data. Because we are using our model primarily for simulation, reconciling these inconsistencies is not straightforward. Our use of separate equations by marital status further decreases sample size relative to the Gustman and Steinmeier model, which used a pooled sample), reducing the chances for finding statistically significant effects.[5]

Because of the modest effects of the premium values and retirement wealth accruals in the MINT retirement equations, we explored alternative retirement models. Previous research has suggested that individuals are more likely to retire when the retirement income replacement rate is higher, so we estimated a model that uses replacement rates as an explanatory variable

[5] With the decline in the prevalence of defined benefit plans and increases in defined contribution coverage, people with very large premium values will be a smaller share of the overall sample. (Defined benefit plans often have large premium values, while defined contribution plans typically have small or zero premium values.) There may be an offsetting effect of more women receiving OASDI worker benefits, so more women may be more likely to have a Social Security premium value, though these are typically much smaller than defined benefit pension premium values.

instead of wealth accruals and premium values. We define the replacement rate as the ratio of potential income from Social Security and defined benefit pensions to recent earnings. (In this model, we replace the measure of per capita family wealth in the premium value equation with a wealth measure that excludes Social Security and DB pension wealth. We tried a series of models that use replacement rate as a straight linear term, as a linear term plus a squared term, and using threshold (dummy variable) replacement rate measures.

As shown in Tables 7–1 and 7–2, higher available replacement rates result in earlier retirement, but at a decreasing rate (as indicated by the squared term). Replacement rates are highly significant determinants of retirement for both single and married people.

The replacement rate and accrual/premium value models each have strengths and weaknesses. To the extent that policy analyses of greatest interest to SSA revolve around Social Security benefits, replacement rate models may lead to greater variation and responsiveness to changes in Social Security benefits than accruals and premium values. Replacement rate models are also substantially less complex, requiring, for example, fewer assumptions about the extent to which individuals value survivor benefits for their spouses.

There are also strong arguments for retaining the premium value model. It is superior for predicting DB pension take-up because it captures the effects of spikes in pension accruals at the eligible age of retirement in traditional DB plans. Because one main thing the retirement model predicts is pension claiming, this argues for keeping the current model. Pensions do contribute importantly to MINT projections of total income.

DB pension take-up often coincides with retirement by our definition because retirement from a job is usually necessary to start collecting benefits. But people may also continue to work more than half-time (not retire) with a different employer or as a self-employed person. In addition, over time, fewer people are being covered by traditional DB plans, so the prevalence of these spikes in accruals is declining. A key question is whether it is worth generating less precise projections of DB pension income in order to improve MINT's ability to simulate responses to changes in Social Security benefits.

At SSA's request, we made the replacement rate model the default option in MINT5. Users may still implement the accrual/premium value model by way of a parameter located in the program projectretirement.sas called "retmodel2use." We do recommend against using the accrual/premium value model at this point, given that inputs to this model (e.g., Social Security and DB pension wealth values) have received less support since the replacement rate model has become the default option in MINT.

IV. EFFECTS OF CHILDREN ON RETIREMENT

We tested a wide variety of specifications of how the presence of children might affect workers' retirement decisions, including use of variables such as number of children, a dummy variable for any children, and dummy variables for child age. None of the variables had any statistically significant effect on the retirement behavior of married people. As shown in Table 7–1, however, some of the child related variables have statistically significant effects on the retirement behavior of single people. Having two or more children reduces the probability of retirement for unmarried people in the replacement rate model and having two children or three or more children reduces the probability of retirement in the premium value model. [6]

V. DIFFERENCES BETWEEN MATCHED AND NON-MATCHED SER CASES

In previous versions of MINT, we omitted HRS cases that did not have a match to the SER from our estimation sample. This omission was a source of concern because Kapteyn *et. al.* (2006) document a substantial difference between matched and non-matched cases. In re-estimating the model with additional HRS data, we were particularly concerned that the War Babies cohorts had much lower match rates than previous cohorts. In earlier memoranda, we considered options that would use separate models for individuals with and without an SER match in both the estimation sample (HRS) and simulation sample (SIPP).

After we submitted those memoranda, HRS released new data resulting from updated permission to match respondents to the SER in 2004. The new data contains much higher match rates, with the match rates for the War Babies now closer to (though still lower than) the match rates for the original HRS cohorts. Further, matched and non-matched cases now appear to be less different than they were previously. We still believed that how the presence of a match affected the results warranted further testing, but we opted not to use separate models for matched and non-matched observations.

To test whether we should treat matched and non-matched cases differently in MINT, we estimated versions of the retirement model in which we pool SER matched and non-matched cases, remove all variables that are calculated based on the SER and substitute less precise variables that are based on self-reports. We then include in the models dummy variables that test the effect of whether one has an SER match (or, in the case of married people, whether **both** an individual and his or her spouse has a match to the SER) on retirement behavior.

In these regressions, we find that the coefficient of the dummy variable for being an SER case is usually negative, meaning that those with a match to the SER are *less likely* to retire early than those without a match. The coefficient on SER status is statistically significant in the models for single people and marginally significant in the model for married men and women pooled. This suggests that dropping the non-SER cases from the estimation sample probably does introduce some bias into the estimates. Therefore, we have included the SER presence/absence variable in the retirement models and used the estimated parameter in the equation used to simulate retirement behavior in MINT5. The use of this coefficient relies on an assumption that the adjustment to the probability of retirement for a missing SER record in SIPP should be the same as the estimated adjustment for a missing SER record in HRS. We only adjust the intercept and assume no interactions of the SER dummy with other model covariates. The row labeled “Missing SER parameter” in Tables 7–1 and 7–2 shows the size of the effect.

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[6] Handwerker (2007) uses HRS data to explore the effects of children’s college enrollment on retirement and finds significant effects, but we would expect that her finding would differ from ours. Because MINT does not track the life events (e.g., college admissions) of the children of members of the sample, we would expect less explanatory power from the variables that we can use than those that Handwerker uses.

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CHAPTER 8

UPDATED PENSIONS

I. INTRODUCTION

MINT projects the pension income and assets that workers accrue over their careers. These pensions include defined benefit pension, defined contribution pensions, IRAs and Keogh plans. MINT projects pensions from past, current, and future jobs.

Earlier versions of MINT included detailed models to project income in retirement from DB and DC pensions, but both the DB and DC models had some important limitations. The projections of DB pension plans did not incorporate conversions of traditional DB plans to cash balance (CB) plans and did not account for recent DB plan freezes. It failed to account for differences in DB plan provisions between firms that offer DB plans only and firms that offer dual (both DB and DC) plans. Finally, it used an overly simple model for the choice of selecting joint and survivor versus single annuity DB pensions. The projections of assets in DC plans used a simple model for DC pension plan participation and contributions that did not take account of data on DC plan contributions from administrative earnings records. MINT5 addresses each of these limitations to produce more realistic and dynamic projections of DB and DC plan pension coverage and accruals over the life course.

Section II of this chapter provides an overview of the pension projection methodology in MINT5. Section III describes the updated model for projecting DC participation and contributions. Section IV describes the modeling of participation in and benefits from CB plans. Section V describes the modifications we made to DB plan projections to account for differential accruals between firms offering dual (DB and DC) and stand alone (DB only) plans. Section VI describes the modeling of DB plan freezes. Section VII describes the updated model for projecting joint and survivor take up by DB plan recipients. Section VIII describes two separate DB pension reform scenario modeled in MINT5. The first scenario assumes that only DB plan freezes known as of December 2006 will occur. The second scenario assumes that all private sector DB plans and 1/3 of all state and local government DB plans freeze over the next five years (2007-2011). This section compares the projected pension coverage and projected pension income at age 67 for the two scenarios. Section IX compares projected family retirement account assets by age and cohort with 1992 to 2004 Survey of Consumer Finance (SCF) and Health and Retirement Study (HRS) data.

II. OVERVIEW

MINT projects individuals' retirement income and wealth generated by employer-sponsored DB, DC, and CB pension plans. The basic structure was developed for

MINT3 and is described in Toder *et. al.* (2002). The MINT3 structure is modified in MINT5 to include CB plans and DB pension freezes. Each simulation includes the following steps:

1. Obtain pension plan coverage information for current and previous jobs from the Survey of Income and Program Participation (SIPP).

2. Use data from the PENSIM[1] model to impute future job changes and pension coverage on future jobs from the time of the SIPP interview through age 50. (After age 50, MINT assumes that no further job changes take place.)

3. Project income from DB plans using the Pension Benefit Guaranty Corporation's (PBGC) Pension Insurance Modeling System (PIMS) DB plan formulas, which are assigned to DB participants based on broad industry, union status, and firm size categories, and an indicator of whether the firm offers dual (DB and DC) coverage.[2] Use actual benefit formulas to calculate benefits for federal government workers and military personnel. Use tables of replacement rates from the Bureau of Labor Statistics (BLS) to calculate replacement rates for state and local government workers.

4. Project conversions of pension plan type (from DB to CB or DB to DC) using actual plan change information for plans included in the PIMS data. Use plan reported date of transition and transition provisions for plans that convert from DB to CB. Use plan reported transition provisions for plans that convert from DB to DC.

5. Project contributions to DC accounts. Use a logit model estimated on the SIPP matched to the Social Security Administration's Detailed Earnings Records (DER) to project DC pension participation. Use a tobit model estimated on the same data, in which contributions are constrained by the annual statutory contribution limits, to project DC contributions among participants. Project employer DC contributions as a function of the projected employee contributions.

6. Project retirement account balances (DC, IRA, Keogh). Use self-reported information on the SIPP to obtain starting account balances. Initial assets and projected contributions are invested in age-varying stock and bond portfolios. Both stocks and bonds earn variable rate of returns, based on historical returns of stocks and bonds. Workers invest a larger share of assets in stocks when they are young and shift more to bonds at older ages.

[1] PENSIM is a micro-simulation model developed by Martin Holmer of the Policy Simulation Group. PENSIM is used for the analysis of the retirement income implications of Government policies affecting employer-sponsored pensions.

[2] PIMS (Pension Insurance Simulation Model) is a model developed by the Pension Benefit Guarantee Corporation. The model contains data for a sample of defined benefit plans (but lacks cash balance plans). The model estimates future pension costs that must be borne by PBGC due to the bankruptcies of firms with DB plans.

Figure 8–1 shows a schematic representation of the MINT5 pension projection method. MINT projects pensions for each job. It starts with the self-reported pension status as of the SIPP pension interview.

- Person 1 has a DB pension in 1990 from job 1. This pension converts to a CB plan in 1994. He retires in 1996 at age 66 with a CB plan subject to the plan-specific transition provisions.

- Person 2 has two jobs over his career. From 1990 to 1997, he has a DC plan from job 1. He has no pension coverage in 1998, but regains DC coverage in job 2 in 1999. He will reach retirement with the DC account balance he has accrued through both jobs, including employer and employee contributions, and including accumulated rates of return on annual account balances.

- Person 3 has a DB pension from job 1. This plan freezes in 2003. The employer substituted a replacement DC plan in 2003. At retirement, this worker will receive a DB plan based on his plan accruals through 2003. Assuming that he participates in the substitute DC plan, person 3 will enter retirement with DC assets accumulated beginning in 2003.

- Person 4 is not covered by a pension and will enter retirement with no pension benefits or accruals.

- Person 5 is covered by a DB pension in job 1 through 1998. In 1999, he changes to a job that offers a DC plan. At retirement, he will have DB benefits based on the plan characteristic for job one, his earnings and job tenure at separation. He will also have DC assets accumulated beginning in 1999.

With each job separation, MINT projects that some workers cash out their accumulated DC balances. The probability of cashing out is higher for younger than for older workers and higher for workers with lower than with higher account balances.

Vested workers take up DB benefits at the later of the plan's early retirement age or projected retirement age. Workers selecting a joint and survivor pension receive a reduced benefit with a 50 percent survivor annuity. MINT randomly assigns a cost of living adjustment (COLA) to pensions as shown in Table 8–1. (See Toder *et. al.* (2002) for more details about COLAs.)

Figure 8–1: Schematic Representation of MINT5 Pension Projections

Pension Type

Person	Job	Birth Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	1	1930	DB				CB		retire									
2	1	1950	DC															
2	2	1950										DC						
3	1	1945				DB										DC		
4	1	1960																
5	1	1950	DB															
5	2	1950										DC						

Age

Person	Job	Birth Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	1	1930	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
2	1	1950	40	41	42	43	44	45	46	47	48							
2	2	1950										49	50	51	52	53	54	55
3	1	1945	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
4	1	1960	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
5	1	1950	40	41	42	43	44	45	46	47	48							
5	2	1950										49	50	51	52	53	54	55

Key

- Defined Benefit
- Cash Balance
- Defined Contribution
- No Pension

Table 8–1. Summary of COLA Assumptions

Sector	Proportion With COLA	COLA Calculation
Private	10%	50% of CPI Increase
State and Local	60%	CPI increase up to 3%
Federal-FERS	100%	Annual adjustments payable only to retirees age 62 or older (unless they are disability or survivor annuities). Adjustments, unless limited by law, are equal to: (1) the increase in the CPI, if the CPI increases 2% or less (2) 2% if the CPI increases between 2 and 3% (3) the CPI increase minus 1%, if the CPI increases 3% or more
Federal-CSRS	100%	Annual adjustments fully indexed to the CPI for all annuitants
Military—Entered on or before 7/31/86	100%	CPI
Military—Entered after 7/31/86	100%	CPI minus 1%

III. DC PLAN PARTICIPATION AND CONTRIBUTIONS

MINT3 and MINT4 calculated DC participation and contributions using mostly self-reported information from the SIPP pension topical module. They determined starting values for employee participation and contributions from self-reported contribution amounts and used data imputed from the PENSIM model to project DC coverage for future jobs. Employee contribution rates were set equal to the average contribution rate by age and earnings derived from the EBRI/ICI 401(k) database, adjusted for individual contribution behavior at the SIPP interview.[3]

Employer contributions were linked to the employee contribution. Employees were assigned employer match characteristics based on the distribution reported in the EBRI/ICI database (see Table 8–2).

[3] For workers with DC plans at the time of the SIPP, who then go on to have DC plans on a future jobs, MINT3/MINT4 assumed that the initial contribution rates on a future job equals the average contribution rate at the age/earnings level of the new job plus the difference between the initial contribution rate reported at the SIPP and the average contribution rate for the given age/earnings level at the time of the SIPP. For example, if a respondent was contributing 3 percentage points more than the average for their given age/earnings cell at the time of the SIPP, when they moved to a new job, they would continue to contribute 3 percentage points more than the average contribution rate.

Table 8–2. Distribution of Participants by Plan Match Level and Plan Match Rate, 1999 (Percentage of Participants)

Match Level	Match Rate							
	25%	33%	50%	67%	75%	100%	Other	Total
2%	0	0	2	0	0	3	2	8
3%	4	1	1	0	0	5	1	12
4%	1	0	4	0	1	2	2	9
5%	1	0	1	0	2	5	5	13
6%	2	4	27	5	3	4	5	49
7%	0	0	4	0	0	0	0	5
8%	0	0	1	0	0	0	0	2
9%+	0	0	1	0	0	0	1	2
Total	8	5	41	5	6	20	15	100

Source: Holden and VanDerhei, 2001.
Note: Match level is the percentage of salary up to which employee contributions will be matched by the employer. Match rate is the percentage of each dollar contributed by the employee for which the employer makes a matching contribution.

In fact, however, annual employee contribution rates to DC plans are highly variable over time. Smith, Johnson, and Muller (2004) evaluated the dynamics of DC pension participation and contributions, using data from the 1996 SIPP linked to the DER data.[4] They found that participation rates and contributions increase with age, education, and earnings, consistent with results from previous work, and that contribution rates by individual workers vary significantly from year to year. Among workers who ever contributed to a tax-deferred plan through their employers between 1990 and 2001, only 27 percent contribute roughly the same share of earnings every year. Among those who contribute in all 12 years, 53 percent exhibit fluctuating contribution rates.

Building on this research, we replaced the DC participation and contribution models with models that are estimated from the 1996 SIPP linked to the DER data. We estimated two models of whether individuals contribute to tax-deferred retirement plans, given that they had an offer. The models are based on data for 26-69-year-olds in the 1996 SIPP, matched to the DER from 1990 to 2003. Separate models of the probability of participation were estimated for those who contributed to a plan in the previous year and those who did not contribute. Independent variables in both models include measures of own earnings, job tenure, a dummy variable for the presence of DB plan

[4] The DER includes longitudinal values for taxable and deferred earnings based on IRS W-2 forms from 1992 to 2004.

coverage, age, sex, marital status, number of dependents, spouse employment status, and whether the individual contributed two years earlier.

The estimated coefficients, which are reported in Table 8–3, generally work as expected. Key factors that increase the probability of contributing include being female, log of earnings, and having a working spouse. The effect of age is fairly weak in each model, with its effects presumably captured by earnings. For those who did not contribute in the previous year, contributing two years earlier has a strong positive impact. Recent tenure (less than one year) also has a relatively large effect. The effect is positive for those who did not contribute last year – perhaps reflecting movement to jobs that have plans from those who were not previously eligible – and negative for those who did contribute – perhaps reflecting waiting periods at the start of a new job. We also found negative effects of year in estimating other specifications of the two equations, but did not include them in the final equations due to concerns about projecting future values when implemented in MINT.

Note that the rules for sample inclusion are somewhat different for the two equations in Table 8–3. Data on whether individuals had an offer and some characteristics of their plan are available from the 1996 SIPP topical module 7 for the job they had at the time of that survey (1998). For the equation for probability of contribution among those (with an offer) who did not contribute in the previous year, we use all data for all years from the time of the topical module through the last year having the job about which they were questioned. We exclude data prior to the topical module 7 interview because we do not know if the firm offered the plan in previous years. For the equation of probability of contribution among those who did contribute in the previous year, we use all data from 1995 onward for each year that we believe they were at the 1998 job (based on reported employer ID from the DER) because we know based on their contributions that they had a plan in those earlier years.

We estimated the size of the DC contribution among respondents who made a contribution using a random effects Tobit model (Table 8–4). This model allows for both a permanent and random error. It also controls for the statutory annual contribution limit. Contributions rise with age at an increasing rate. Contributions are lower in the first year with an employer and rise with employment tenure for the first five years on a job. Contributions are also higher for continuing contributors than for new contributors. Contributions increase as earnings increase. All else held constant, blacks and Hispanics contribute less than whites, married couples contribute more than singles, homeowners contribute more than renters, and workers with more children contribute less. Contributions increase when the worker’s employer also contributes to the DC plan. Contributions are lower on average when the spouse works, but, if the spouse works, increase the more the spouse earns.

Table 8–3. Logit Model of Contribution to Tax Deferred Contribution Plan Conditional on Prior Year's Contribution, Persons Age 26 to 69 with an Offer

	No Contribution in t-1				Contribution in t-1			
	Logit Coefficient		**Std. Error**	**Mean**	**Logit Coefficient**		**Std. Error**	**Mean**
Age	-0.0053		0.019	44.56	0.0296	*	0.016	44.51
Age squared	-0.0002		0.00021	2109	-0.0003	*	0.000	2072
Male, =1 (vs. 0)	-0.3476	***	0.049	0.491	-0.4686	***	0.041	0.548
Married (=1)	-0.1221	*	0.071	0.687	-0.0113		0.057	0.742
Number of dependents	-0.0858	***	0.026	0.675	-0.0606	**	0.021	0.710
Has defined benefit plan, =1 (vs. 0)	-0.1003	*	0.054	0.266	0.2196	***	0.042	0.453
Employer would contribute, =1 (vs. 0)								
Contributed to plan two years ago	1.0735	***	0.060	0.110				
Ln(earnings/ae + .25), excluding from self-employment	1.1529	***	0.039	-0.130	1.7108	***	0.046	0.526
Job tenure -- 0 - 1 years	0.7038	***	0.060	0.196	-1.4433	***	0.044	0.161
Job tenure -- 2 years	0.4628	***	0.070	0.123	0.0472		0.081	0.086
Job tenure -- 3 - 4 years	0.2103	***	0.066	0.197	0.1184	*	0.061	0.175
Spouse works	0.2398	***	0.064	0.475	0.1333	**	0.051	0.544
Constant	-1.9184	***	0.394		2.0567	***	0.348	
Mean of outcome	0.101				0.939			
Data	Post-1998 with same job				Post 1995 with 1998 job			
N	24815				52810			
Wald Chi-squared	1560.67				2944.18			
Pseudo-R-Squared	0.1188				0.1567			

Source: Urban Institute tabulations of the 1996 SIPP matched to the Detailed Earnings Record.
Earnings are divided by national average earnings.
Notes: *** p<.01 ** p<.05, * p<.10.

Table 8–4. Random Effects Tobit Estimates of Log of Contributions to Tax-Deferred Retirement Accounts, For Participants Ages 26 to 69, 1995 to 2003

Dependent variable: Ln (Amount of contribution/ae + .012)

	Coefficient	**Std. Error**
Age	-0.0063	0.0038
Age squared	0.00018	0.00004
Male, =1 (vs. 0)	0.008	0.011
Married, =1 (vs. 0)	0.010	0.012
Number of dependents	-0.022	0.005
Black, non-Hispanic (vs. 0)	-0.167	0.017
Hispanic, =1 (vs. 0)	-0.055	0.019
Race is other, =1 (vs. 0)	0.148	0.024
Has defined benefit plan, =1 (vs. 0)	0.027	0.010
Employer would contribute, =1 (vs. 0)	0.073	0.010
Contributed to plan in previous year, =1 (vs. 0)	0.221	0.008
Contributed to plan two years earlier, =1 (vs. 0)	0.021	0.006
Ln(earnings /ae + .25), excluding from self employment	1.021	0.012
Ln(earnings/ae + .25), from self employment	0.059	0.024
Job tenure -- first year	-0.153	0.008
Job tenure, > 5 years	0.028	0.006
Spouse works, =1 (vs.0)	-0.027	0.010
Ln(spouse total earnings/ae + .25)	0.072	0.006
Owns home, =1 (vs. 0)	0.066	0.011
Constant	-3.259	0.088
Standard error of regression	0.486	0.004
Standard error of permanent component	0.345	0.003
Number of observations	58515	
Number of individuals	12440	
% censored at maximum contribution amount	4.78	
Log likelihood	-34810.48	

Source: Urban Institute tabulations of the 1996 SIPP matched to the Detailed Earnings Record.
Notes: The analysis is based on annual observations for workers ages 26 to 69 who contributed to employer-sponsored tax-deferred retirement plans. Includes one observation per person for each year between 1995 and 2003 employed at the job held at time of 1998 SIPP topical module interview. Contribution amounts and earnings are divided by national average earnings (ae).

The individual-specific error term for contributors is the average total error predicted by the model relative to historic contributions from 1992 to 2004, as reported on the DER. Non-contributors are assigned an individual-specific error term based on the estimated standard error of the permanent component times a normally distributed random number. This is a non-changing characteristic for each individual over time. Linking the permanent error to actual historic contributions assures consistency among the accumulated retirement account assets, longitudinal employment and earnings, and the worker's revealed propensity to contribute to these accounts.

As in earlier versions of MINT, we assume retirement account assets are invested in stock and bond portfolios that vary by age (Table 8–5). MINT rebalances these portfolios every five years. Rates of return are set stochastically based on historic means and variances of returns on stocks and bonds.

Table 8–5. Retirement Account Portfolio Allocation by Age and Rates of Return

	Stocks	Bond
Age		
25-29	0.76	0.24
30-39	0.75	0.25
40-49	0.71	0.29
50-59	0.66	0.34
60-69	0.53	0.48
Real Rate of Return	6.5%	3.3%
Standard Deviation	17.28%	2.14%
Administrative Cost	1%	1%

Source: Asset allocation values are Urban Institute calculations based on VanDerhei *et. al.* (1999). Rates of return are based on historic averages.

IV. CASH BALANCE PLANS

Traditional defined benefit (DB) plans typically provide benefits based on a percentage of final pay times years of service. Cash balance (CB) plans provide each participant with a notional account that is generally credited by the employer with a dollar amount based on a percentage of earnings and a rate of return on the accumulated contributions. Beller (2005) reports that over one-fourth of all single employer DB plan participants have converted to CB formulas, and that many of the conversions have been by sponsors of large plans. The wave of CB conversions that occurred in the late 1990's has subsided, largely due to age discrimination concerns that ended up in Federal Court (Cooper v. IBM Personal Pension Plan and Campbell v. BankBoston).

In MINT, DB benefits for private sector workers are determined by assigning pension plan formulas from the PBGC's Pension Insurance Modeling System (PIMS). The PIMS dataset includes detailed DB plan information and benefit formulas coded, in a generalized form, from Form 5500 Schedule B attachment data for 607 single-employer plans. Plans are classified into three general types — flat dollar, salary, and hybrid plans, with specific parameters varying by plan. In addition, there are five types of salary based plans, which vary by the Social Security offset method. PIMS includes other detailed information needed to calculate plan benefits, including service breakpoints, the final salary averaging period, early retirement benefit reduction rates, and benefit supplement rates.

We used the 1997 to 2003 Form 5500 public use data to identify DB plans that converted to CB over that time period. We identified 70 plans from the 5500 data that are also on the PIMS data. We obtained the Summary of Plan Provisions and coded the actual cash balance provisions for these 70 plans.[5] The provisions include the year the DB plan converted to a CB plan, accrual basis, interest rates, and transition provisions. The transition provisions generally fall into the following categories: grandfather into old plan where only new employees are covered under the CB plan; choice between the new and old plan; and additional pay credits based on age and years of service.

We use the CB plan information in conjunction with the PIMS data to assign workers their pensions. For workers in firms that convert to a CB plan, we apply the transition provisions appropriate for each worker. If a worker is grandfathered in, the worker retains the existing DB plan. If a worker is offered a choice, we calculate the expected DB and CB benefit at the date of the conversion and assign the worker the plan type that offers the higher expected benefit. Workers that join the firm after the conversion date get assigned the CB plan.

At retirement, we assume that all CB accruals are paid out as a lump sum. We add this lump sum to other retirement account assets and spend them down in the same fashion as other retirement account assets (see chapter 3).

External data suggest MINT's projections of CB coverage are quite accurate. Projected MINT5 pension coverage type by age and birth year closely matches reported pension coverage from the wave 7 of the 2001 SIPP (see Table 8–6) by birth year.[6]

V. DIFFERENTIAL ACCRUALS BETWEEN STAND-ALONE DB PLANS AND THOSE OFFERED ALONG WITH A DC PLAN

Older versions of MINT did not differentiate DB plan selection between a worker who had both a DB and DC plan and one who had a stand-alone DB or DC plan. MINT used different data sources to determine the design of DB and DC plans. This modeling approach implicitly assumed that stand-alone DB plans did not differ from DB plans offered in conjunction with DC plans, and assumed that stand-alone DC plans did not different from DC plans offered in conjunction with DB plans.

[5] The 2003 public use Form 5500 data includes a code identifying the plan type including a cash balance distinction. This code was not available in earlier years of data. In many cases, however, plans include the words "cash balance" in the plan name. The public use 5500 data file includes no information on plan characteristics. This information is included in the IRS filing and copies are available from the Bureau of Labor Statistics. We used the paper filings to obtain plan-specific transition provisions.

[6] The 2001 SIPP data is one of the few public use sources of cash balance prevalence. Earlier panels of SIPP do not include any cash balance information.

Table 8–6. Number of Individuals Covered by a Pension by Pension Type, Birth Year, and Data Source in 2003.

	Pension Type					
	DB		DC		CB	
Birth Year	**MINT5**	**2001 SIPP**	**MINT5**	**2001 SIPP**	**MINT5**	**2001 SIPP**
1926 – 1930	2,693,938	3,015,306	77,931	42,381	8,472	0
1931 - 1935	4,083,459	4,029,109	394,302	162,809	87,724	39,012
1936 - 1940	3,873,928	4,326,133	1,155,102	703,684	247,205	94,134
1941 - 1945	4,283,657	4,350,259	1,874,419	1,853,608	317,607	333,858
1946 - 1950	5,312,159	5,198,074	3,095,664	2,854,155	535,427	453,424
1951 - 1955	5,508,521	5,178,697	3,867,831	3,857,166	455,019	596,353
1956 - 1960	4,888,642	5,375,867	4,714,696	4,564,773	646,422	556,479
1961 - 1965	4,119,009	4,507,845	4,758,218	4,264,317	399,004	583,895
1966 - 1970	3,078,708	2,953,436	4,131,401	3,151,323	351,480	520,341

Source: Urban Institute tabulations of MINT5 and 2001 SIPP.

This modeling approach was driven, not by empirical evidence, but rather by data constraints. The PIMs dataset contains information for DB plans, while the EBRI/ICI database contains information for DC plans. While MINT projects whether a worker has no pension, DB only, DC only, and both DB and DC, it did not differentially assign DB or DC characteristics for joint and stand-alone plans. The PIMS data contain no information about DC plans.

Holmer and Janney (2003) used the Employee Benefits Survey of the U.S. Bureau of Labor Statistics (BLS) to study the characteristics of pension plans offered by private employers during the period 1996 to 1998. They found important differences between stand-alone DB plans and those offered in conjunction with a DC plan, and between stand-alone DC plans and those offered on conjunction with a DB plan:

- The average accrual rate[7] of a stand-alone terminal earnings DB plan is 1.73 percent, while the average accrual rate of a terminal earnings DB plan offered in conjunction with a DC plan is only 1.4 percent. Thus, the accrual rates of stand-alone DB plans are typically greater than the accrual rates of DB plans offered in conjunction with DC plans.

[7] In a typical DB plan, a pension is calculated as the product of an "accrual rate," the individual's years of service, and the individual's average wage (computed over a particular period, e.g. the final 5 years prior to retirement). For example, if a plan has an accrual rate of 1 percent per year, an individual with 40 years of service would receive 40 percent of their salary average.

- The average difference between excess and base[8] accrual rates is 0.61 percent for stand-alone career earnings DB plans but only 0.51 percent for career-earnings DB plans offered in conjunction with DC plans.

To overcome this limitation, we have enhanced the PIMS data to include an indicator of whether the DB plan is a stand-alone or jointly-offered DB plan. We imputed this indicator based on pension plan characteristics and accrual rates. In MINT5, workers with stand-alone DB plans are now assigned to a designated stand-alone PIMS plan. Workers with jointly-offered DB plans are now assigned to a designated jointly-offered PIMS plan.

In developing estimates of the difference in benefit generosity between jointly offered and stand-alone DB plans, we used data from the National Compensation Survey (NCS).[9] The NCS is a survey of employer establishments that collects benefit-related data, including pension plan information. It then relates these plan characteristics to workers by job class. These plan characteristics include information on plan coverage (including joint offer status) and plan characteristics (including accrual rates).

We developed measures of plan generosity on the NCS data based on accrual rates by plan type. Tabulations of our generosity measures confirmed that DB plans jointly offered with a DC plan have less generous plan provisions than those that are offered as stand alone plans, but the differences are small.

Pension benefit formulas vary significantly for flat dollar plans compared to career earnings and final salary plans. Due to these differences, we developed separate measures of plan generosity by plan type. For flat dollar benefit plans, plan generosity is defined as the monthly benefit amount paid out by the plan. For career earnings and final salary plans, plan generosity is defined as the percent of final year's salary that an employee working 25 years at the average wage and retiring at the normal retirement age would receive in the year following retirement.

Using these definitions of plan generosity, and data on plan characteristics, we estimated the probability of a DB plan being jointly offered (Table 8–7) as a function of plan generosity and plan characteristics.[10] For flat dollar plans, we found no significant effect of plan generosity on their likelihood of being jointly offered. For career earnings and final salary plans, the probability that a plan was jointly offered is lower for more generous plans, considerably higher for union than for non-union plans, and somewhat higher for manufacturing firms and larger firms than for non-manufacturing and smaller firms.

[8] In a DB plan with "excess integration" there are usually two accrual rates, the first of which applies to earnings up to OASDI's covered earnings maximum, and the second of which applies above this maximum. The second accrual rate is always greater than the first accrual rate.

[9] See U.S. Department of Labor (2005) for more information about the NCS data.

[10] We tested the probability model using several alternate specifications for tenure and earnings levels and found little change in the regression results.

Table 8–7. Logistic Model for Probability of the DB Plan Being Jointly Offered by Plan Type

	Parameter Estimate	Standard Error	P>|t|
Salary Based Plans			
Generosity: benefit/earn	-0.010292	0.005575	0.065
Manufacturing indicator	0.612462	0.201547	0.002
Union status	2.180495	0.143574	0.000
Firmsize	0.188253	0.074586	0.012
Intercept	-2.569933	0.354123	0.000
Observations	5182		
Flat Dollar Plans			
Generosity: benefit	0.007527	0.007869	0.339
Manufacturing indicator	0.240371	0.225131	0.286
Union status	2.238476	0.390292	0.000
Firmsize	-0.127523	0.125788	0.311
Intercept	-2.337298	0.594479	0.000
Observations	1096		

Source: Urban Institute estimates from the 2003 National Compensation Survey.

Notes: Firmsize is coded as follows: 1=<1000 employees, 2=1000-4999 employees, 3=5000-9999 employees, 4=10000+ employees.
Union status: 1=union, 2=nonunion.

For final salary and career earnings plans, we used these logit results to calculate the likelihood that a PIMS plan is stand alone or jointly offered. We assigned plan type to plans based on whether a random number generated for each plan exceeded this likelihood. The resulting imputed distribution to PIMs indicates that this method was successful both in closely mirroring the NCS distribution of stand alone and joint plans by union status, industry and firm size, and in generating a higher mean accrual rate for stand alone plans than for jointly offered plans (Table 8–8).

VI. DB PLAN FREEZES

The percentage of workers covered by traditional defined benefit (DB) pension plans has been steadily declining over the past 25 years. Between 1980 and 1998, DB pension coverage among workers fell from 38 to 21 percent, while DC coverage increased from 8 to 27 percent (U.S. Department of Labor 2002). More recently, many employers have frozen their DB plans (Munnell *et. al.* 2006). Some experts expect that most private sector plans will be frozen in the next few years and eventually terminated (Gebhardtsbauer 2005).

Table 8–8. Percent of Jointly Offered Plan and Plan Generosity by Plan Characteristics and Data Source

	% Jointly Offered		Observations		Generosity[1]	
	NCS	PIMS	NCS	PIMS	NCS	PIMS
All	73	81	11009	606	30.8	32.36
Firm Size						
Less than 1000	71	69	5421	105	30.0	33.11
1000 to 4999	79	84	4133	224	30.9	32.06
5000 and up	79	83	1455	277	35.2	32.42
Union						
Yes	48	54	2636	240	33.6	34.77
No	86	92	8373	366	30.2	31.76
Industry						
Manufacturing	77	85	2850	409	32.2	31.14
Non-Manufacturing	72	76	8159	197	30.4	33.74
Plan Type						
Career/Terminal Earnings	61	57	1724	175		
Flat Dollar	81	83	4867	431		

Source: Urban Institute tabulations of 2003 National Compensation Survey and PIMS.
1/ Generosity based on average wage worker with 25 years tenure.

There are two types of pension freezes: termed hard and soft. In a hard freeze, the plan accepts no new participants and freezes future accruals for existing participants. In a soft freeze, the plan closes to new workers, but existing participants remain in the DB plan and continue to accrue retirement benefits. In the hard freeze, current participants will receive retirement benefits based on their accruals up to the date of the freeze but will not accumulate any additional benefits. In both types of freezes, employers will either establish new DC plans or increase contributions to existing plans for affected workers.

Table 8–9 shows a list of firms we have identified that have either frozen their DB plan or announced plans to freeze their plan. It shows the effective date, their alternate pension arrangement, and the PIMS Plan ID. Of the 73 frozen DB plans we have identified, 25 plans are included in our PIMS sample (highlighted in yellow). Most of these firms have opted for a hard freeze and have either added new 401(k) plans or augmented existing plans.

Table 8–9. Firms with Frozen Defined Benefit Plans and PIMS ID

Firm	Effective Date	Plan ID	Provisions
A.T. Cross Company	5/20/2006		Hard Freeze. Augment 401k.
Alcoa	3/1/2006	1399	Soft freeze. New employees automatic 3% of salary plus 100% match up to 6% of salary.
Alliant Techsystems	1/1/2007		Hard Freeze. Augment 401k.
ALPA represents Comair's 1,800 pilots			
Aon Corporation	1/1/2007		Soft freeze. Change current DB formula from final average pay to career average pay. DB plan closed to new workers.
Armstrong World Industries, Inc.	3/1/2006		Soft freeze. Augment 401k.
Bandag, Incorporated	12/31/2006		Hard freeze with augmented accrued benefits.
Belo Corp.	3/31/2007		Hard freeze with augmented accrued benefits. Augmented 401k plan.
Blount International, Inc.	1/1/2007		Hard Freeze. Augment 401k.
Calgon Carbon Corporation	12/31/2006		Hard Freeze. Augment 401k.
Circuit City	1/1/2005	1130	Hard freeze. 100% match up to 3% of salary, 50% match for 3-5% of salary.
Citigroup, Inc.	1/1/2008	1304	Hard freeze in cash balance plan (continue to make interest credits). New DC plan with automatic 2% of pay, plus 100% match up to 6% of pay.
Coca-Cola Bottling Co. Consolidated	6/30/2006	1431	Hard freeze. New DC plan with 100 percent match up to 5% of salary
Con-Way Inc.	12/31/2006		Soft freeze. DC contribution of 3-5% of pay based on salary.
Delta		1472	
DuPont	1/1/2008	1442	Soft freeze with reduced (1/3) accruals for active employees. Automatic DC contribution up to 3% of salary. 100% match up to 6% of salary (max contribution of 9%)
El Segundo			
Empire Health Services			Hard freeze. 100% match up to

Table 8–9. Firms with Frozen Defined Benefit Plans and PIMS ID

Firm	Effective Date	Plan ID	Provisions
			4% of salary
FedEx	3/31/2008	1016, 1314	Hard Freeze. Remove DB choice for cash balance plan. New cash balance plan. Enhance 401k plan. Automatic enrollment and 3.5% of salary 401k match
Ferro Corporation	4/1/2006		Soft freeze. Augment 401k.
Flushing Financial Corporation	9/30/2006		Hard freeze. Automatic 4% of salary in DC plan.
Ford Motor Co		1432	Not yet determined
G&K Services, Inc.	1/1/2007		Hard Freeze. Augment 401k.
General Motors Corp.	1/1/2007	997	Soft freeze. Salary employees hired before 1/1/2001 get DB accrual based reduced (1.25 percent of) average monthly base salary for their future years of service. Hired after 1/1/2001 and in cash balance plan stop accruing pay credits. 4% of salary to DC plan.
Goodyear	12/31/2008	1547	Hard freeze. 50% match up to 4% of salary.
Harleysville Group Inc.	4/1/2006		Hard freeze. Automatic 401k contributions for 5% of salary. 50% match for the first 6% of salary. Performance match.
Harry & David Operations Corp.	7/1/2007		Hard freeze. 100% match up to 3% of salary, 50% match for 3-5% of salary.
Hewlett-Packard			Soft freeze. Employees with tenure + age < 62 remain in DB plan. Others freeze. 100% match up to 4% of salary in DC plan.
Hospira	12/31/2004		Hard freeze. 5% of salary for workers contributing 2%-3%. 6% of salary for workers contributing 3%+. Additional 3% for qualified workers age 40+.
HP (Hewlett-Packard)	1/1/2008		Hard freeze. 100% match up to 6% of salary.

Table 8–9. Firms with Frozen Defined Benefit Plans and PIMS ID

Firm	Effective Date	Plan ID	Provisions
IBM	1/1/2008	1372	Hard freeze. Automatic 2% contribution plus 100% match up to 6%.
Journal Register Company	1/1/2007		Hard freeze for non-union employees. 100% match up to 4% of salary
Kershaw County Medical Center	1/1/2007		Hard freeze. Augment 401k 100% match up to 4% of salary.
Lenox Group Inc.	1/1/2007		Hard freeze non-union employees. Augment 401k 100% match up to 4% of salary.
Lexmark International, Inc.	5/1/2006		Hard freeze. Augment 401k.
Lincoln Electric Holdings, Inc.	1/1/2006		Soft freeze. Enhance 401k.
Lockheed Martin	1/1/2006	622, 634, 759, 1008, 1055	Soft freeze. Enhance saving plan.
LSB Corporation	12/31/2006		Termination, replace with ESOP and 401k.
Lydall, Inc.	6/30/2006		Hard freeze for non-union employees. 100% match up to 6% of salary.
MeadWestvaco Corporation	1/1/2007	1424	Cash balance. Workers age 40+ can remain in DB plan.
Media General, Inc.	12/31/2006		
Met-Pro Corporation	12/31/2006		
Michelin	1/1/2017	1407	Hard freeze. 100% match first 3% of salary + 50% match 3-5 percent of salary.
Milliken			Hard freeze. Enhance 401k plan.
Motorola	1/1/2005	1455	Soft freeze. Hired before 1/1/2005 get 50% match up to 6% salary. Hired after 1/1/2005 get 100% up to 3% of salary, 50% match between 3-5% of salary.
NCR Corporation	1/1/2007		Soft freeze. New hires and workers under age 40 will have a total freeze. Frozen workers get automatic 5% pay in 401k.

Table 8–9. Firms with Frozen Defined Benefit Plans and PIMS ID

Firm	Effective Date	Plan ID	Provisions
Nissan			Hard freeze. As of 1/1/2006 Nissan has made no determination on 401k changes. Nissan currently provides a 100% match on employee contributions up to 5% of salary.
Nortel	1/1/2008		Hard freeze. Automatic contribution of 2% of salary plus a 50% match up to 6% of earnings.
North Pittsburgh Telephone Co.	12/31/2006		Hard freeze for non-union employees. Enhance 401k plan.
Northwest Pilots	1/1/2006	1327	Hard freeze. Automatic contribution of 5% of salary to 401k
Remington Arms Company, Inc.	1/1/2008		Hard freeze.
Rentokil			Hard freeze.
Reynolds and Reynolds Company	10/1/2006		Hard freeze. 100% match up to 6% of salary. Add profit share plan.
Rockwell Colins	9/1/2006		Hard freeze non-union employees.
Russell Corporation	4/1/2006		Hard freeze.
Ryder System, Inc.	1/1/2008		Soft freeze. Workers with age+years of service > 65 remain in DB. Others frozen. Automatic 3% of salary plus 50% match up to 5% of pay.
Sears	1/1/2006	1445	Hard freeze. 100% match up to 3% of salary, 5-% match for 3-5% of salary.
Shenandoah Telecommunications	1/31/2007		Termination with asset distribution August 2007. Replace with 401k plan. Automatic 4% of salary contribution plus a 100% match on employee contributions up to 4% of salary (8% employer contribution max)
Sonesta International Hotels Corp	12/31/2006		Hard freeze. 100% match up to 4% of salary.
Sprint Nextel	1/1/2006	1680	Hard freeze. 100% match up to 5% of salary.

Table 8–9. Firms with Frozen Defined Benefit Plans and PIMS ID

Firm	Effective Date	Plan ID	Provisions
Stepan Company	7/1/2006		Hard freeze. 100% match up to 4% of salary.
SunTrust Banks Inc.	1/1/2008	1471	Hard freeze. Current workers with less than 20 years tenure will get CASH BALANCE. Workers with 20+ years of service get choice: cash balance or reduced DB pension. New workers will get DC plan 100% match up to 5% of salary.
SureWest Communications	4/1/2007		Hard freeze. 100% match up to 6% of salary.
Tenneco Inc.	1/1/2007		Hard freeze for non-union employees. Company will provide for additional annual company contributions in amounts that increase with the employee's age.
The Hershey Company	1/1/2007		Soft freeze for non-union employees. Reduced rate accruals with enhanced 401k. 75% of the first 6% of salary. Higher match rate for new employees.
The Stride Rite Corporation	12/31/2006		Hard freeze. 100% match up to 6% of salary.
Tredegar Corporation	12/31/2007		Hard freeze. 100% match up to 6% of salary earned in 2007-2008. 100% match up to 5% of salary after 2008,
Tribune Corp			
Unisys Corporation	12/31/2006	1616	Hard freeze. New DC plan 100% match up to 6 % of salary
Verizon Communications Inc.	7/1/2006		Hard freeze. Enhance 401k plan.
Vought Aircraft Industries, Inc.	12/31/2007		Hard freeze for employees with less than 5 years service. New DC plan.
Wellpoint, Inc.	1/1/2006		Hard freeze for some cash balance employees.
Whirlpool Corporation	1/1/2007		Hard freeze for employees eligible to retire after 1/1/2010. Others get DC plan

We have coded these pension freezes in MINT5. Workers in MINT with DB coverage are randomly assigned to a PIMS plan within the separate categories of manufacturing industry status, firm size, union status, and pension type (jointly offered or stand alone). Table 8–10 shows the number of plans on the PIMS dataset by these characteristics. For example, a nonunion worker in a small (less than 1000 employees) manufacturing firm with joint pension coverage on the SIPP would be randomly assigned to one of the 31 PIMS plans in this group.

Table 8–10. Number of PIMS DB Plans by Manufacturing, Firm Size, Union Status, and Plan Type

		Joint Plan		Stand Alone Plan	
	All	**Nonunion**	**Union**	**Nonunion**	**Union**
All	606	283	127	92	104
Manufacturing					
Firm size					
<1000	84	31	25	9	19
1000-4999	171	74	38	31	28
5000-9999	63	29	12	7	15
10000+	91	44	21	12	14
Non-manufacturing					
Firm size					
<1000	21	8	4	6	3
1000-4999	53	28	11	8	6
5000-9999	51	28	9	8	6
10000+	72	41	7	11	13

Source: Urban Institute tabulations of the 1995 Pension Insurance Modeling System (PIMS) data.

If a worker is assigned to a plan that freezes, the worker would stop accruals in the DB pension as of the freeze date. We assume that all firms with jointly offered plans increase the employer match provisions of the existing plan. We assume that all firms with stand-alone plans offer a substitute DC plan. We assign the actual DC provisions of the plan when we have data. Otherwise, we impute DC plans parameters based on the distribution of the known plans.

We treat workers in the first year of a DB plan freeze differently than in other years with respect to DC plan participation. In the DC participation model, described in section III, participation is a function of job tenure and prior year's contribution, among other things. Job tenure and prior contribution status are fundamentally different for workers affected by a freeze than for other workers, because workers receiving new DC coverage are essentially like new workers eligible for a plan even though they have previously worked for the same employer. We treat all workers affected by a plan freeze as though they had made a contribution in the prior year and maintain their tenure as it accrues. Participation rates are much higher for continuing participants than for non-participants, so by treating these workers as continuing participants, they will likely participate the first year of the freeze. The participation model, however, will allow certain low probability workers to opt out of the DC plan. After the first year of the freeze, these workers use the unadjusted DC participation and contribution model.[11]

VII. PROJECTING JOINT AND SURVIVOR TAKEUP

MINT assigns self-reported joint and survivor selection for respondents who are receiving a DB pension at the SIPP interview. This question is not asked of individuals not yet receiving a pension. For workers retiring with a DB pension, older versions of MINT used a simple probability table to impute joint and survivor take-up based on education and sex.

We continue to use self-reported values for respondents receiving a DB pension at the SIPP interview, but we have updated the joint and survival probability selection model in MINT5 for others. We base our model on a joint and survivor pension selection model developed by Johnson, Uccello, and Goldwyn (2003). This model was estimated on 1992-2000 HRS data.

The Johnson *et. al.* model examines the decision to receive a single life annuity instead of a joint and survivor annuity with a probit model, estimated for a sample of married adults receiving employer-sponsored retirement annuities. The model relates the annuity decision to characteristics of the pensioner and the spouse at the time the pensioner begins receiving pension income.

We modified the Johnson *et. al.* model to make it compatible with MINT. This included dropping independent variables that are not projected in MINT and converting real (*i.e.*, price-adjusted) measures of income and wealth into wage-adjusted measures. The model includes both expected pension wealth and non-retirement pension assets as explanatory variables. Because both pension and wealth distributions are highly skewed and wealth can be negative, we transform both types of assets for use in the regression by adding 2 to wealth divided by the average wage before taking the logarithmic transformation. This transformation allows the model to capture the effect of low and negative wealth. We estimated separate probit models for men and women. Table 8–11 shows our model estimates.

Model results show that couples are less likely to forgo taking (more like to select) a joint and survivor pension as their pension assets increase. Men are less likely to forgo a joint and survivor pension as marriage duration increases, but are more likely to forgo a joint and survivor pension if his spouse has her own pension or the couple has more non-pension wealth.

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[11] An alternative approach would have been to make these workers look like new employees and let the "first year on the job" variable give them a boost in participation probability. This alternate option would predict lower participation rates for these workers.

Table 8–11. Determinates of the Decision of Married Men and Women to Forgo Joint and Survivor Pension

	Female				Male			
	Parameter Estimate		Standard Error	Sample Mean	Parameter Estimate		Standard Error	Sample Mean
Log of DB pension wealth	-0.6489	***	0.1547	1.6391	-0.2388	***	0.0775	2.07438
Nonpension Wealth<=0	-0.2403		0.5377	0.0157	0.5701	**	0.2786	0.03018
0< Nonpension Wealth<=1	0.0296		0.2178	0.1279	0.1496		0.1353	0.16535
log of nonpension wealth	-0.0801		0.2029	1.0243	-0.2798		0.1413	1.14624
Spousal pension coverage in own name	0.3959	*	0.2370	0.9112	0.4236	***	0.1068	0.57218
Spouse pension coverage missing	0.0000		0.0000	0.0026	0.9376		0.6584	0.01706
Respondent in better health than spouse	0.2657		0.1860	0.1932	-0.0657		0.1632	0.10367
Health status is missing	-0.1555		0.5151	0.0209	-0.4076		0.5444	0.02756
Log of marriage duration (years)	0.0158		0.1240	3.4283	-0.1950	***	0.0740	3.29139
African American	0.0197		0.2023	0.1384	0.2867	*	0.1592	0.10236
Hispanic	-0.0652		0.3167	0.0548	0.0910		0.2265	0.05118
Less than high school	0.0595		0.2448	0.1227	-0.0497		0.1421	0.18898
Some college	0.2371		0.1946	0.2010	0.0410		0.1387	0.19948
College graduate	0.1561		0.1946	0.2768	0.0965		0.1370	0.25459
Intercept	1.0820	*	0.6308		0.5660		0.3560	
Dependent Variable Mean	0.68				0.30			
Observations	382				762			
Log Likelihood	-224.0656				-439.7983			
Pseudo R-Squared	0.0636				0.0559			

Source: Urban Institute probit estimates from the 1992-2000 waves of the HRS.
Notes: Wealth values are divided by the economy-wide average wage.
*** significant at 1% level, ** significant at 5% level, * significant at 10% level.

VIII. ALTERNATE DB REFORM SCENARIOS

We have simulated two separate DB reform scenarios in MINT. In the “high” option, we assume that only DB plans that have frozen or announced their intent to freeze as of December 2007 freeze their DB plan (listed in Table 8–9). In the “low” option, we assume that all remaining (in addition to those coded in the high option) private sector and 1/3 of state and local government DB plans freeze over the next five years. The truth is probably somewhere in the middle, but we believe these two options provide an upper and lower bound for the range of outcomes.

The disappearance of DB plans threatens to erode retirement security for many older Americans, who will lose guaranteed benefits tied to earnings and years of service. Increased DC plan coverage may not provide equivalent financial security. DB plans provide benefits that do not vary with investment returns, while DC plans assign investment risks to workers, with no long run performance guarantees. For most workers, DB plan enrollment is automatic, but for DC plans, enrollment is not mandatory and many eligible workers do not participate. Finally, DB pensions offer workers a steady flow of income until death, while funds accumulated in DC plans may be withdrawn immediately upon job separation or retirement, giving workers the opportunity to spend accumulated savings in their DC plan unwisely.

Some people, however, will fare better under DC plans than under traditional DB plans. DB plans favor older workers with long tenure in a single job because frequent job changes can erode total benefits, while DC plans protect against job change risks and are more favorable to those with intermittent work histories. Moreover, the new trend towards the use of automatic enrollment with default investment portfolios for DC plans could boost participation rates and contributions and facilitate improved investment choices by participants.

These reforms will affect workers in different cohorts differently. Only workers in firms with DB plans will be affected by the reforms at all. In typical DB pension plans, accruals rise rapidly as workers approach the plan’s normal retirement age and then fall for work past the normal retirement age. The decline occurs because the increase in the annual DB benefit from an additional year of work after the normal retirement age does not fully replace the foregone benefit from collecting for fewer years. Workers who are nearing retirement eligibility at the time of the freeze may lose the rapid increase in pension accruals just before the normal retirement age and the additional wealth accrued in the substitute DC plan will probably not fully compensate them. Workers in mid-career at the time of the freeze will have DB accruals that reflect job tenure through the freeze date, and DC asset accruals from the freeze date to retirement. Except for those already at the retirement age, the younger the worker the larger will be the net benefit (smaller the net loss) from the transition from a DB to a DC plan. In later cohorts, many workers will never have access to a DB pension at all, so transition will not be an issue for them.

MINT5 makes projections for individuals born between 1973 and 2018 using a cloning method. Specifically, it uses a synthetic population of individuals born between 1973 and 2018 generated by the Social Security Administration's Polisim model. The Polisim model contains information on sex, marital status, education, race, ethnicity, nativity, immigration age, and immigrant source region for 38-year-olds in these cohorts. MINT5 then statistically matches this population to individuals born between 1960 and 1964 (see chapter 5 of this report and chapter 5 and Smith *et. al.* (2005) for more detail). This cloning method does not accommodate the impact of pension freezes for later cohorts because, by simply replicating the experience of the 1960 to 1964 cohorts, MINT imputes their pension coverage and pension accumulation to the 1973-2018 cohorts. The more detailed methods described in this chapter do impute pension coverage to all cohorts through 1972 and do account for the effects of actual and potential freezes in DB plans.

We make a simple adjustment to projected pension income and assets for the 1973 to 2018 cohorts to account for substitutions of DC plan availability for DB pension plan coverage that affect cohorts born after 1964 but are not incorporated in the projections for the post-1972 cohorts. This adjustment is not a full simulation and contains some important limitations. We calculate the annuity income from projected DC assets at age 67 and add this to projected DB benefits to calculate total pension income.[12] We then estimate an OLS regression of the logarithm of the DB share of total pension income on birth year and birth year squared under both the high and low options for the MINT5 1926-72 birth cohorts (Table 8–12).

Table 8–12. OLS Parameter Estimates of DB Share of Total Pension Annuity, Dependent Variable is Logarithm of DB/Total Pension Annuity

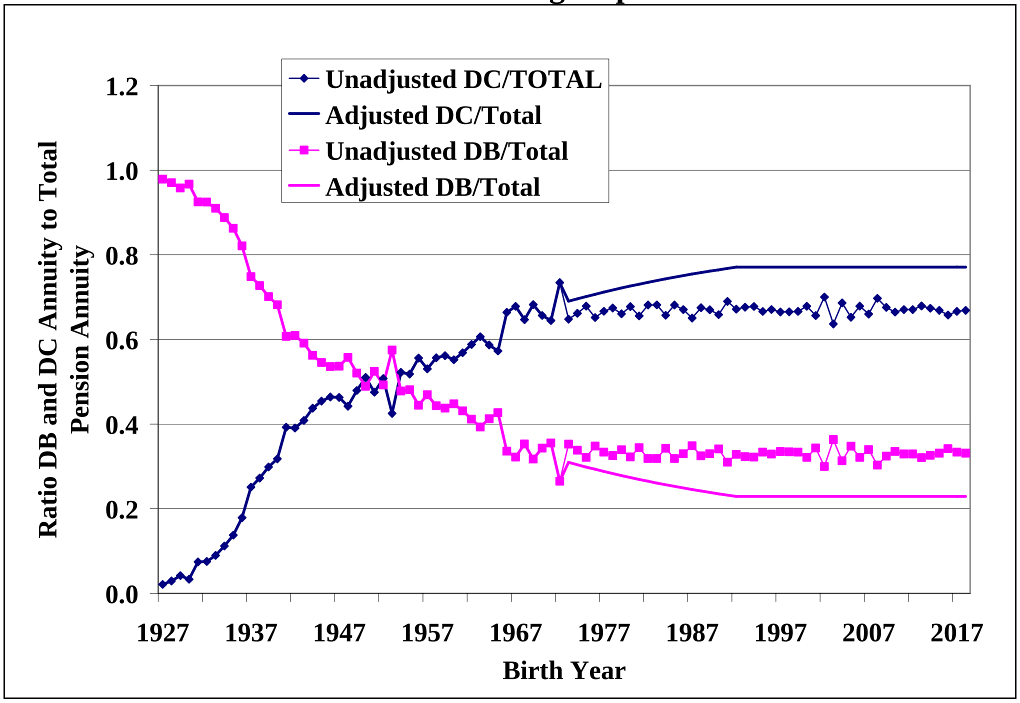
Variable	Parameter Estimate		Standard Error
		High Option	
Intercept	621.292	***	256.03
Birth year	-0.61227	**	0.26267
Birth year squared	0.00015	**	0.00007
		Low Option	
Intercept	-2721.623	***	255.37
Birth year	2.84093	***	0.2620
Birth year squared	-0.000741	***	0.0001

Source: Urban Institute regression of MINT5 1926 to 1972 birth cohorts.
Notes: *** p<.01 ** p<.05, * p<.10.

We use these parameter estimates to project the DB share of total pension income for the 1973 to 2018 cohorts (see Figures 8–2 and 8–3). We assume that the DB share under the low option will decline in later years according to the parameters of the

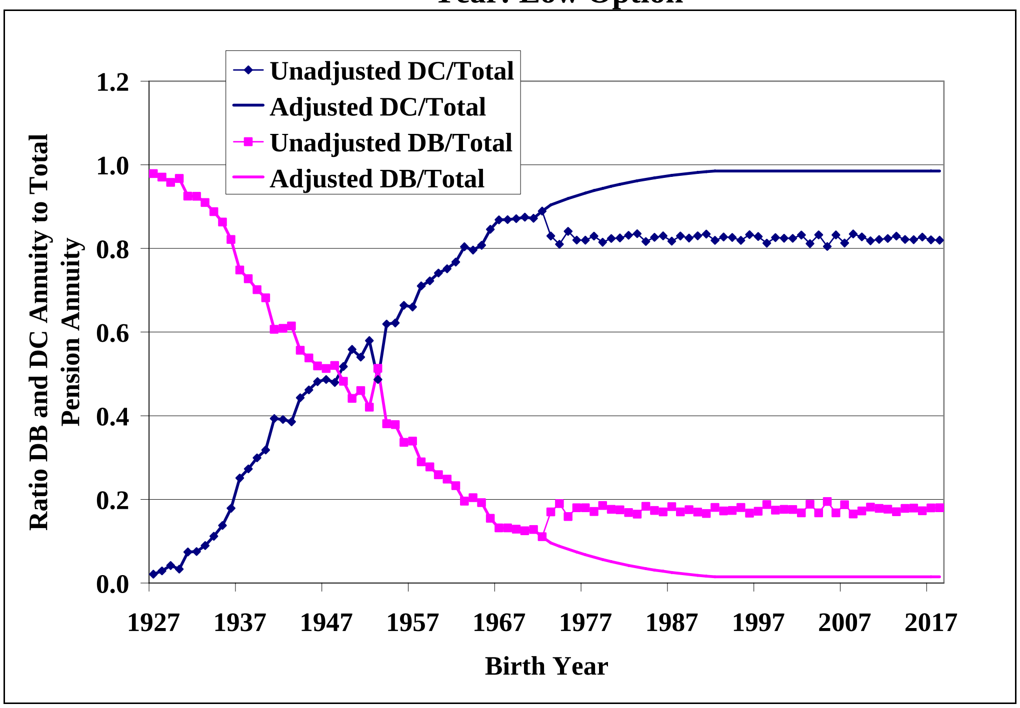
[12] We convert DC assets to an annuity using the following formula: DC assets at age 67/ (real annuity factor at age 67-11/24).

Figure 8–2. Ratio of DB and DC Annuity to Total Annuity at Age 67 by Birth Year: High Option



Source: Urban Institute tabulations of MINT5. Values for Figure 8–2 are in Table A8–1.

Figure 8–3. Ratio of DB and DC Annuity to Total Annuity at Age 67 by Birth Year: Low Option



Source: Urban Institute tabulations of MINT5. Values for Figure 8–3 are in Table A8–1.

estimated equation for all cohorts born before 1992. Beginning with the 1992 birth cohort, we assume the DB share of pension income will remain unchanged for later cohorts because they will enter the labor market after the shift in pension types has been completed. We use this estimated shift to the composition of pension income to correspondingly raise DC wealth and lower DB pension income for all retiree subgroups in the 1973 through 2018 cohorts. We do not, however, change the estimated share of those covered by DB pensions. Thus, the tables in this report still overstate DB pension coverage for individuals born after 1972. When we shift DB dollars to DC dollars, we do assign additional DC coverage, but we cannot distinguish between a lower DB annuity because of lower coverage or because of lower benefits per covered worker.[13] We recommend that SSA revise this procedure to better model the transition from DB to DC plans for the extended cohorts in future versions of MINT.

Table 8–13 shows MINT5 projected pension coverage by cohort and pension type for both the high and low options. Workers born before 1940 are essentially unaffected by modeled DB pension freezes. They are at or near retirement age when the first plan freeze occurred. DB coverage is about 42 percent for 67-year-olds born between 1926 and 1930 in both the high and low options. DB coverage rates decline between the 1926 and 1995 cohorts. They are only slightly lower for the low option than the high option (26 instead of 28 percent) for 67-year-olds born between 1966 and 1970 because only those workers who were never covered by a DB pension and change jobs to a firm with a frozen plan lose DB coverage altogether. Many workers are affected by the additional freezes in the low option, but the freeze reduces their DB benefits instead of removing coverage altogether.

We see bigger differences in DC coverage between the high and low options than in DB coverage. DC coverage is 4 percentage points higher in the low option than the high option for 67-year-olds born between 1966 and 1970 (0.442 in the high option versus 0.488 in the low option). Total coverage (either DB or DC) is about the same under the low and high options for 67-year-olds born between 1966 and 1970 (0.587 versus 0.585) even though DC coverage increases by more than DB coverage falls. This happens because some workers who shift to a frozen plan do not sign up for (or opt out of) the replacement DC plan (a loss of both DB and DC coverage), while others who continue to be covered by a frozen DB plan also take up DC coverage (an increase in DC coverage, but no change in total coverage). Low income workers are less likely to participate in a voluntary DC plan and more likely to cash out balances at job terminations. While total coverage remains about the same, the additional DB freezes under the low scenario reduce total coverage among low-income workers and increase coverage among high-income workers in the transition period, but the differences are very small (see Table 8–14).

[13] The decline in DB annuity is the combined effect of lower DB accruals for workers in the DB plan at the time of the freeze and lower coverage for workers that shift to employers after the plan freeze. We cannot disentangle the two effects with this method.

Table 8–13. Pension Coverage Rate at Age 67 by Pension Type and Birth Year

	Pension Coverage					
Birth Year	**DB**	**DC**	**CB**	**Any**	**DB+CB**	**ANY DC including IRA, Keogh**
			High Option			
1926-1930	0.422	0.045	0.002	0.586	0.424	0.334
1931-1935	0.400	0.126	0.010	0.605	0.410	0.394
1936-1940	0.353	0.232	0.026	0.604	0.379	0.441
1941-1945	0.349	0.288	0.029	0.619	0.378	0.461
1946-1950	0.364	0.332	0.030	0.638	0.394	0.476
1951-1955	0.342	0.352	0.028	0.617	0.370	0.467
1956-1960	0.323	0.374	0.032	0.594	0.355	0.455
1961-1965	0.305	0.397	0.030	0.579	0.335	0.446
1966-1970	0.281	0.442	0.027	0.587	0.308	0.483
1971-1975	0.304	0.520	0.025	0.607	0.329	0.557
1976-1980	0.299	0.570	0.032	0.632	0.331	0.620
1981-1985	0.308	0.576	0.031	0.634	0.339	0.622
1986-1990	0.308	0.574	0.030	0.632	0.338	0.622
1991-1995	0.308	0.573	0.031	0.630	0.339	0.619
			Low Option			
1926-1930	0.422	0.045	0.002	0.586	0.424	0.334
1931-1935	0.400	0.126	0.010	0.605	0.410	0.394
1936-1940	0.353	0.232	0.026	0.604	0.379	0.441
1941-1945	0.349	0.289	0.029	0.619	0.378	0.462
1946-1950	0.363	0.334	0.030	0.638	0.393	0.478
1951-1955	0.342	0.357	0.028	0.617	0.370	0.471
1956-1960	0.322	0.405	0.032	0.595	0.354	0.482
1961-1965	0.299	0.453	0.027	0.581	0.326	0.497
1966-1970	0.263	0.488	0.020	0.585	0.283	0.524
1971-1975	0.289	0.541	0.022	0.607	0.311	0.577
1976-1980	0.295	0.579	0.030	0.633	0.325	0.629
1981-1985	0.304	0.586	0.029	0.636	0.333	0.631
1986-1990	0.303	0.582	0.028	0.633	0.331	0.629
1991-1995	0.304	0.582	0.029	0.632	0.333	0.627

Source: Urban Institute tabulations of MINT5.
Notes: Any coverage includes coverage in DB, CB, DC, IRA, or Keogh.

Table 8-14. Total Pension Coverage Rate at Age 67 by Birth Year, Average Indexed Earnings Quintile, and Pension Option

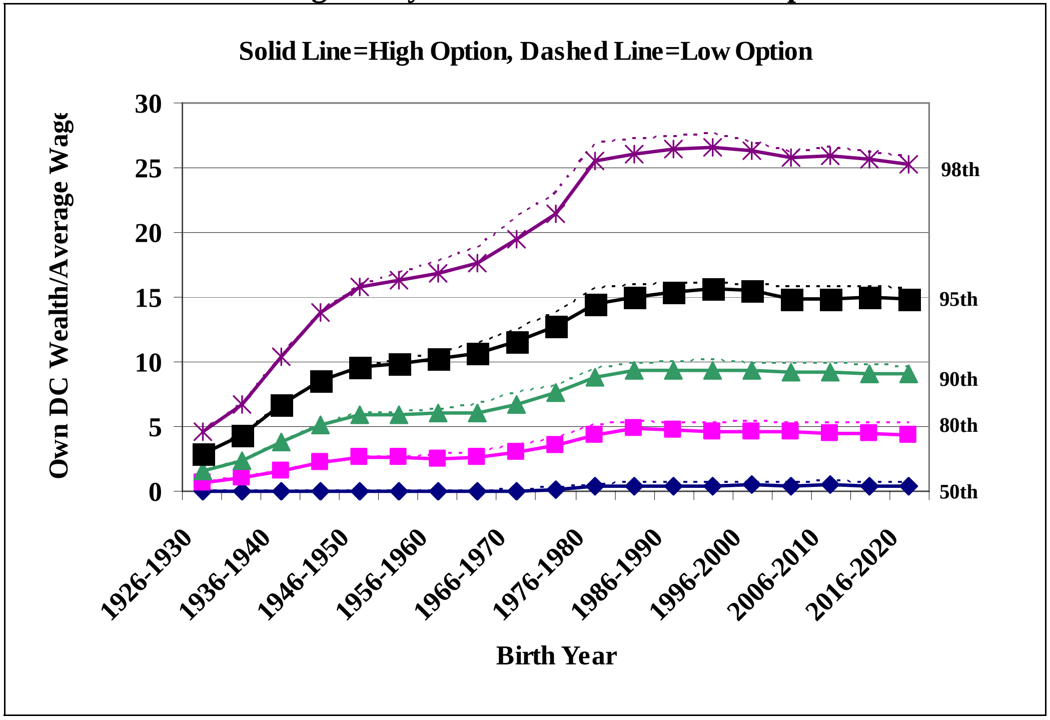
	Birth Year								
	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970
	High Option								
AIE Quintile									
1	0.275	0.270	0.250	0.249	0.228	0.223	0.233	0.240	0.215
2	0.449	0.459	0.461	0.471	0.485	0.461	0.440	0.449	0.459
3	0.626	0.677	0.654	0.676	0.700	0.694	0.638	0.611	0.619
4	0.714	0.745	0.780	0.802	0.844	0.813	0.780	0.746	0.759
5	0.872	0.877	0.880	0.902	0.906	0.903	0.878	0.850	0.877
	Low Option								
AIE Quintile									
1	0.275	0.270	0.250	0.249	0.227	0.224	0.235	0.242	0.207
2	0.449	0.459	0.461	0.471	0.486	0.462	0.441	0.452	0.452
3	0.626	0.677	0.654	0.676	0.700	0.694	0.639	0.612	0.621
4	0.714	0.745	0.780	0.802	0.843	0.813	0.781	0.750	0.759
5	0.872	0.877	0.880	0.902	0.906	0.903	0.879	0.853	0.880

Source: Urban Institute tabulations of MINT5.
Notes: Average indexed earnings (AIE) is the average wage-adjusted earnings from age 22 to age 62. Total coverage includes coverage in DB, CB, DC, IRA, or Keogh. Additional coverage detail is included in Appendix Table A8-2.

Figure 8–4 shows the distribution of projected DC account balances at age 67 (values shown in Appendix Table A8–3) by cohort and pension option. The solid lines show balances for the high option and dashed lines show balances for the low option. All along the distribution, DC balances are higher in the low option than high option (more employers switch to DC plans in the low option than high option). Only cohorts born after 1945 see any measurable differences in DC assets due to the option. In absolute terms, the gains are higher at the high end of the distribution, but percent differences are greater at the bottom of the distribution. For example, for 67-year-olds born between 1966 and 1970, median projected DC assets is 0.05 times the average wage higher in the low option than in the high option, but this is almost a three-fold increase in DC assets. At the 98th percentile of asset holdings, DC assets are 1.62 times the average wage higher in the low option than in the high option, but this is only an 8 percent increase in DC assets.

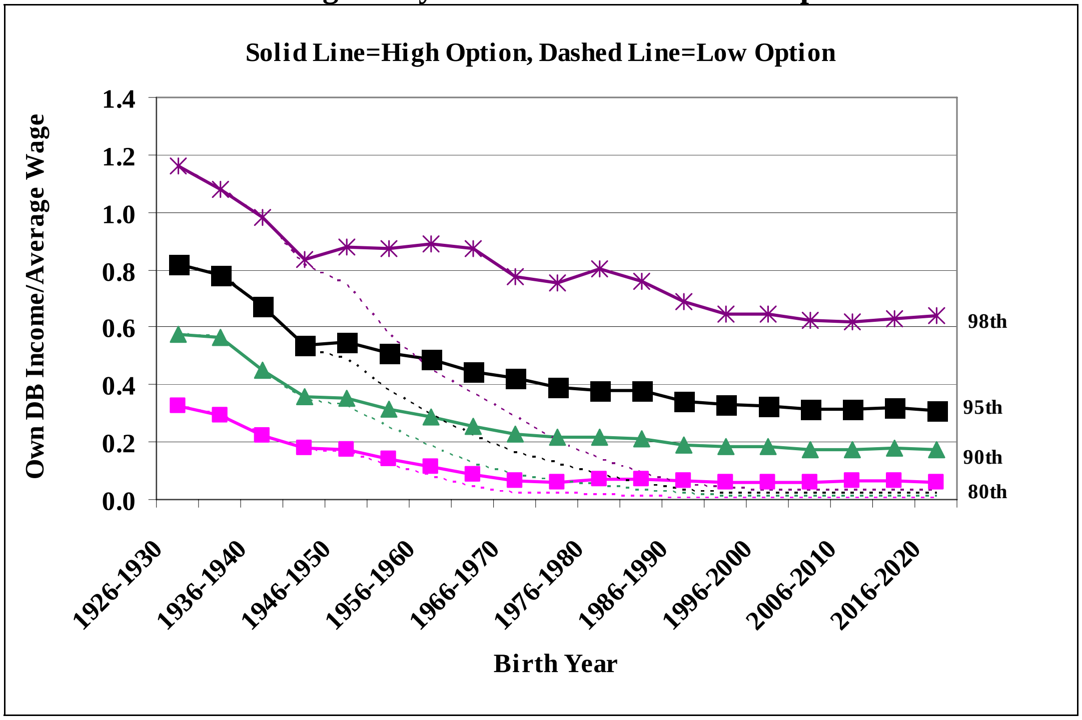
While DC account balances are projected to increase over time in relation to the average wage, DB pension income (relative to the average wage) is projected to decrease. Figure 8–5 shows the distribution of projected DB pension income relative to the average wage at age 67 by cohort and option (values shown in Appendix Table A8–4). Relative DB pension income falls faster under the low option than high option. In fact, DB pension income disappears for all but the small share of workers with federal government or state and local government DB pensions in the low option.

Figure 8–4. Distribution of Own DC Wealth Relative to the Average Wage at Age 67 by Birth Year and Pension Option



Source: Urban Institute tabulations of MINT5. Values for Figure 8–4 are in Table A8–3.

Figure 8–5. Distribution of Own DB Income Relative to the Average Wage at Age 67 by Cohort and DB Pension Option.



Source: Urban Institute tabulations of MINT5. Values for Figure 8–5 are in Table A8–4.

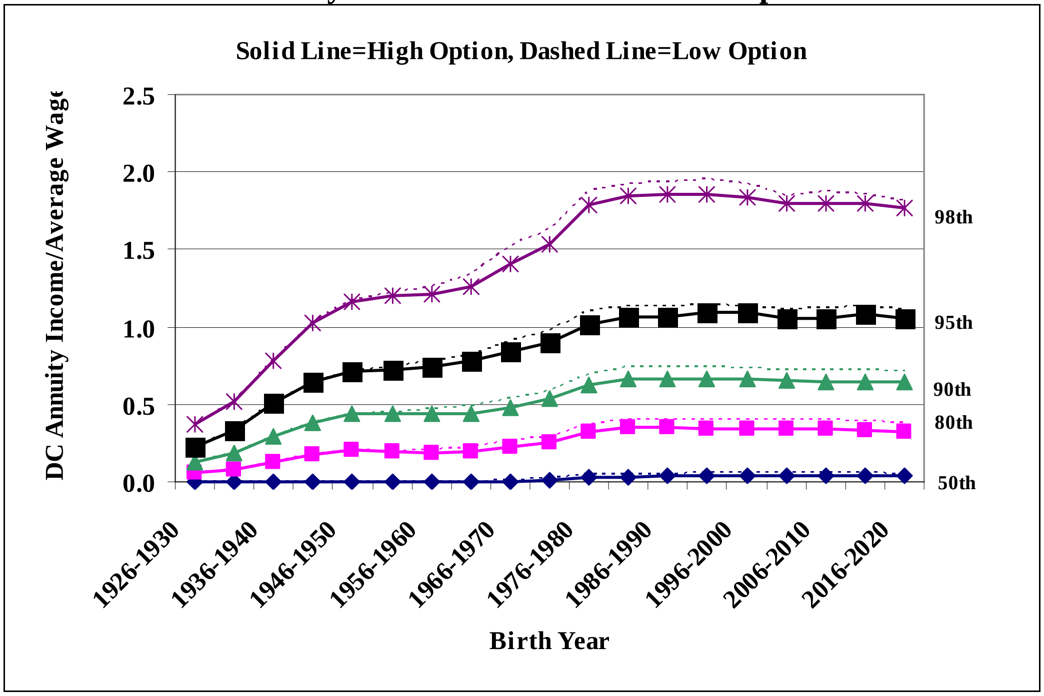
In order to facilitate comparisons of shifts in DC wealth and DB pension income, we convert DC wealth into an annuity using the multivariate annuity factors described in chapter 2. For this comparison, we convert 100 percent of individual's retirement account assets into an annuity. Figure 8–6 shows the distribution of DC annuity income relative to the average wage at age 67 by birth cohort and DB pension option (values are shown in Appendix Table A8–5). The shape mirrors that of DC wealth, but due to differences in life expectancy between earlier and later birth cohorts, annuity factors are larger for 67-year-olds in earlier cohorts than later cohorts. Due to differences in life expectancy between higher and lower socioeconomic groups, annuity factors are larger for 67-year-olds with lower assets than with higher assets.

Figure 8–7 shows the distribution of the sum of DB income and DC annuity at age 67 by birth year and pension option (values are shown in Appendix Table A8–6). The sum of DB and DC income rises over time, and it rises more at the top of the distribution than at the bottom of the distribution. In all cases, DB plus DC income is lower under the low option (dashed lines) than the high option (solid lines). There are a number of factors that contribute to this result. First, DC contributions are subject to statutory contribution limits. These contribution limits were adjusted in an ad hoc fashion during the 1990s to 2006. They are now set to increase annually with prices. As wages grow faster than prices, the contribution limit will increasingly limit contributions of highly compensated workers. Because DC participation is voluntary and balances depend on contributions and asset returns, not all workers will fully replace their lost DB pensions with DC assets. As more DB pensions freeze, highly compensated employees lose the ability to accumulate both large DB pensions and large DC balances.

IX. COMPARISONS OF MINT5 WITH SCF AND HRS

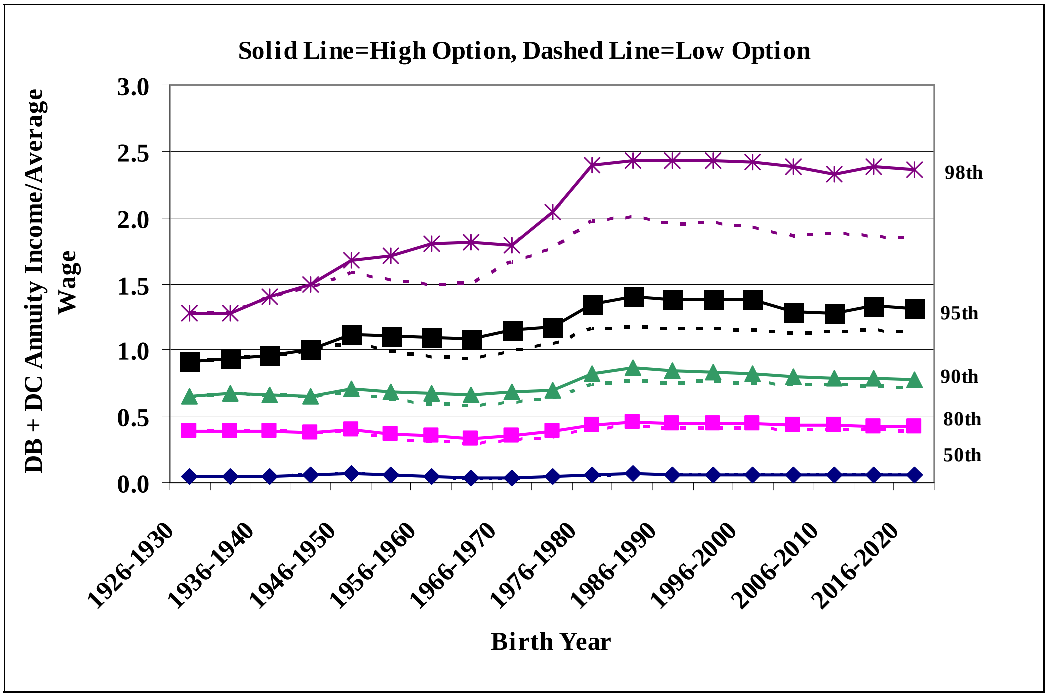
The projected family retirement account assets in MINT5 are fairly similar to retirement account assets reported on the Survey of Consumer Finance (SCF) and Health and Retirement Study (HRS) by cohort and age. Retirement account balances in MINT5 generally fall between the SCF values and HRS values across asset distribution. The SCF tabulations include the 1992, 1995, 1998, 2001, and 2004 panels. Despite pooling SCF panels, small sample size causes the SCF distributions to be very noisy by single year of age. What is labeled as HRS in these figures includes HRS respondents born between 1931 and 1941 for seven waves (1992 – 2004) plus war baby respondents born between 1942 and 1947 for four waves (1998-2004) and their spouses. All figures are based on the age of the husband in married couples and the age of the respondent for unmarried individuals.

Figure 8–6. Distribution of DC Annuity Income at Age 67 by Birth Year and DB Pension Option



Source: Urban Institute tabulations of MINT5. Values for Figure 8–6 are in Table A8–5.

Figure 8–7. Distribution of DB Pension Plus DC Annuity Income at Age 67 by Birth Year and DB Pension Option



Source: Urban Institute tabulations of MINT5. Values for Figure 8–7 are in Table A8–6.

As with the housing and wealth comparisons shown in chapter 3, projections of retirement account assets are highly influenced by the starting balances observed in the SIPP data. Retirement account balances accumulate over time both through employer and employee contributions and returns on assets. Comparisons of starting account balances between the SIPP and SCF show balances are markedly lower at younger ages on the 1990 to 1993 SIPP than on the 1996 SIPP panel. These differences diminish at older ages. MINT5 pools the 1990 to 1996 SIPP panels, and the lower starting balances in the 1990 to 1993 SIPP panels have greater weight in the pooled projections than the 1996 panel observations. The pooled MINT distributions tend to be lower than the SCF for later cohorts.

Figures 8–8 through 8–15 show the 60th percentile of family retirement account assets relative to the average wage by age and data source for different cohort groups. For the 1931 to 1935 cohorts, 60th percentile retirement account balances are very similar between MINT5, SCF, and HRS (Figure 8–8). The pattern by age is fairly flat with retirement account assets about 0.2 times the average wage between ages 55 and 70. MINT projects a slight increase in retirement account assets at older ages, despite the IRS required spend-down. This happens partly because of differential mortality (a larger share of wealthier individuals survives to older ages) and partly because families can meet some of the spend-down requirement by paying out from annual asset returns, leaving prior-year account balances largely unchanged.

Figure 8–15 shows the 60th percentile of family retirement account assets relative to the average wage for the 1951 to 1955 cohorts by age and data source (SCF and MINT5). This figure repeats the values shown in Figure 8–12, but it adds values for MINT5 projections based on the 1996 SIPP and those based on the 1990-1993 SIPP. Starting balances are markedly lower on the 1990-1993 SIPP panels than for the 1996 panel, and the 1996 panel observations closely align to the SCF values by age. Because DC account assets depend on both annual contributions and an annual rate of return on assets, projected asset accumulation by age is highly dependent on the starting balances. The Census Bureau made significant changes to the SIPP pension topical module between 1993 and 1996 SIPP panels. MINT5 also uses independent adjustments for starting retirement account balances for the 1990-1993 SIPP and 1996 SIPP observations. The 1996 SIPP panel values were adjusted to match the 1998 SCF retirement account distributions (Smith *et. al.* 2005). The 1990-1993 SIPP panels were adjusted to match the 1992 SCF retirement account distributions (Butrica *et. al.* 2004). There were significant increases in DC pensions during the early 1990s. The starting value adjustments were made to cross-sectional distributions. This adjustment increased reported values, but it did not turn zeros into positive amounts. We recommend that SSA revisit the adjustment procedure used for the 1990 to 1993 SIPP panels.

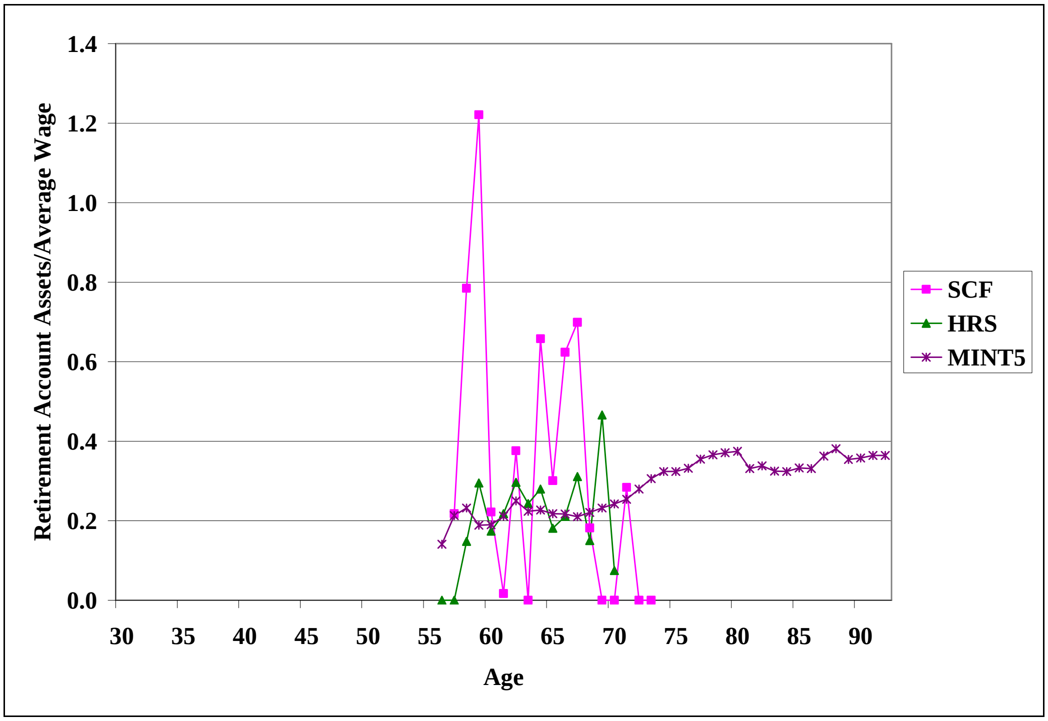
Figures 8–16 to 8–22 compare the 80th percentile of family retirement account assets relative to the average wage by age among MINT, SCF, and HRS for different cohort groups. Figure 8–16 shows the 1931 to 1935 cohorts. Figure 8–22 shows the 1961 to 1965 cohorts. For the 1931 to 1935 cohorts, 80th percentile retirement account balances are very similar between MINT5, SCF, and HRS (Figure 8–16). The pattern by age rises more on the HRS than in MINT. The data is too noisy on the SCF to discern any distinct age pattern. Comparisons of the 80th percentile for 1936 to 1940 cohorts are also very similar between MINT5, SCF, and HRS (Figure 8–17). SCF values tend to be higher than HRS values and the MINT values tend to fall in between. All three data sources show a rise in relative retirement account balances with age through age 70. After age 70, IRS requires individuals to withdraw assets from DC accounts, so projected retirement account balances fall after age 70. Comparisons of the 80th percentile for 1941 to 1945 cohorts are also very similar between MINT5, SCF, and HRS (Figure 8–18). As with the 1936 to 1940 cohorts, SCF values tend to be higher than HRS values and the MINT values tend to fall in between. As with projections at the 60th percentile, MINT tends to project lower retirement account balances at the 80th percentile compared to the SCF for the 1956 to 1965 cohorts. Again, this appears mainly to an understatement of starting balances at younger ages on the 1990 to 1993 SIPP data.

Figures 8–23 to 8–29 show the 90th percentile of family retirement account assets relative to the average wage by age and data source for different cohort groups. Figure 8–22 shows the 1931 to 1935 cohorts. Figure 8–29 shows the 1961 to 1965 cohorts. For the 1931 to 1935 cohorts, 90th percentile retirement account balances are very similar between MINT5, SCF, and HRS (Figure 8–23). Similar to the pattern at the 80th percentile, the pattern by age rises more on the HRS than in MINT. The data are too noisy on the SCF to discern any distinct age pattern. It does appear that MINT understates the growth in retirement account assets between ages 60 and 70. This partly reflects assumptions about portfolio allocation at older ages (100% bonds) and partly reflects projected earnings and contribution behavior at older ages.[14]

Comparisons of the 90th percentile for 1936 to 1940 cohorts are also very similar between MINT5, SCF, and HRS (Figure 8–24). SCF values tend to be higher than HRS values. The MINT values fall between the SCF and HRS between ages 50 and 60. MINT values then fall below both the HRS and SCF after age 61. This is partly reflects assumptions in portfolio allocation at older ages and partly reflects projected earnings and contribution behavior at older ages. Comparisons of the 1941 to 1945 cohorts (Figure 8–25) and 1946 to 1950 cohorts (Figure 8–26), however, show no discrepancy in the age pattern. SCF values are tend to be higher than HRS values and MINT tends to fall in between. MINT projects lower retirement account balances at the 90th percentile than the SCF for the 1956 to 1965 cohorts. Again, this appears mainly attributable to an understatement of starting balances at younger ages on the 1990 to 1993 SIPP data.

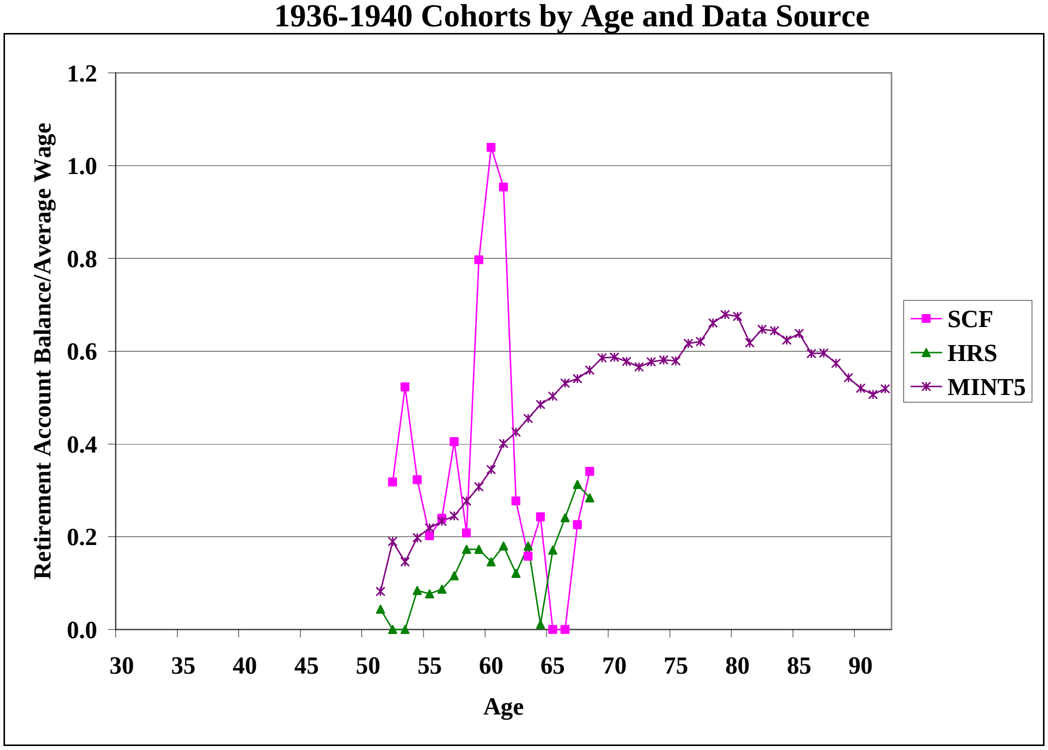
[14] MINT assumes that 100 percent of retirement account balances are kept in bonds after retirement. At retirement, MINT decreases assets based on the wealth spend-down model. This model projects the change in total assets including both assets in retirement accounts and non-pension financial assets. Essentially, families consume both the return on their assets and part of the principal. In the spend-down model, we increase the annual retirement account assets by the rate of return on bonds (3.3% real) and spend down taxable accounts first. The asset allocation assumption affects the tax calculation and the share of total assets allocated to retirement and non-retirement accounts. It does not affect the total projected assets.

Figure 8–8. 60th Percentile Retirement Account Balance/Average Wage 1931-1935 Cohorts by Age and Data Source



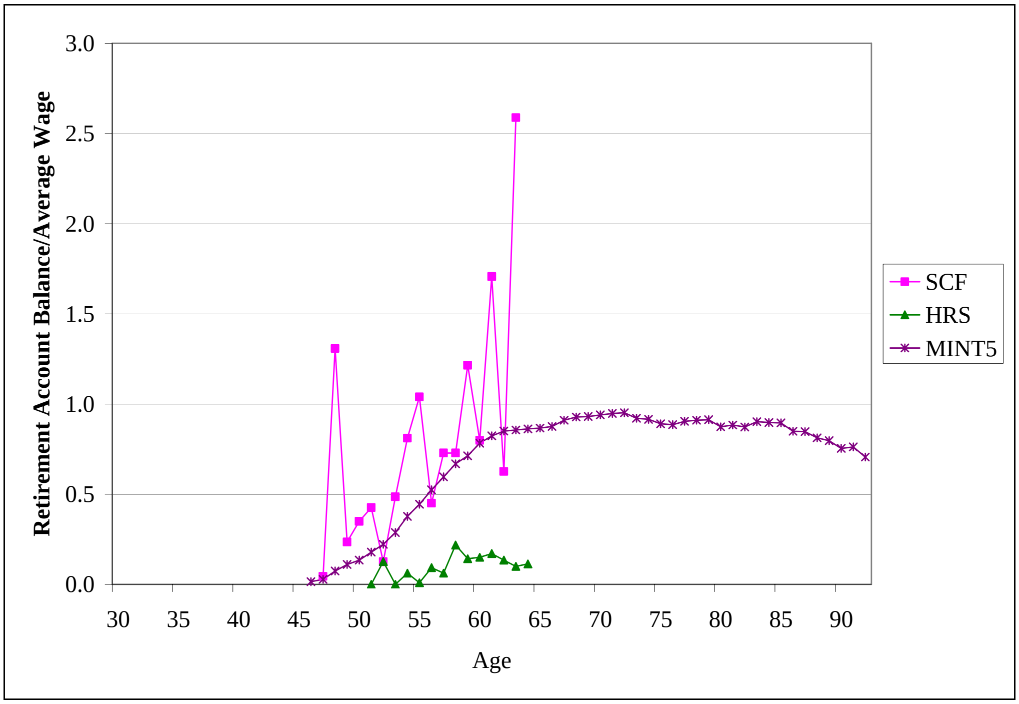
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–9. 60th Percentile Retirement Account Balance/Average Wage 1936-1940 Cohorts by Age and Data Source



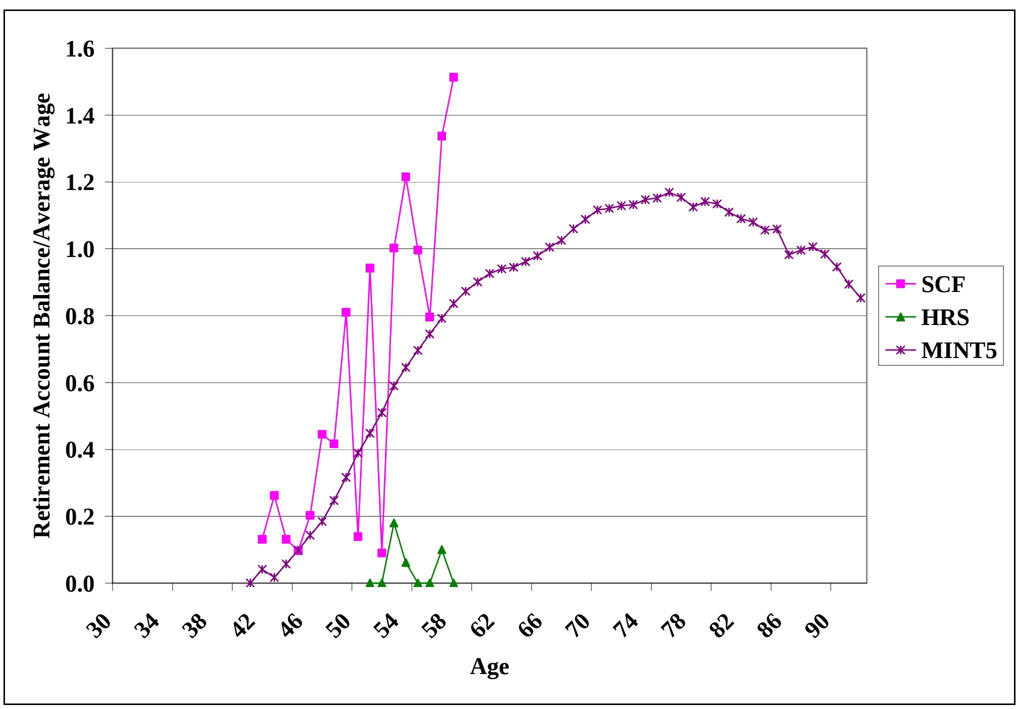
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–10. 60th Percentile Retirement Account Balance/Average Wage 1941-1945 Cohorts by Age and Data Source



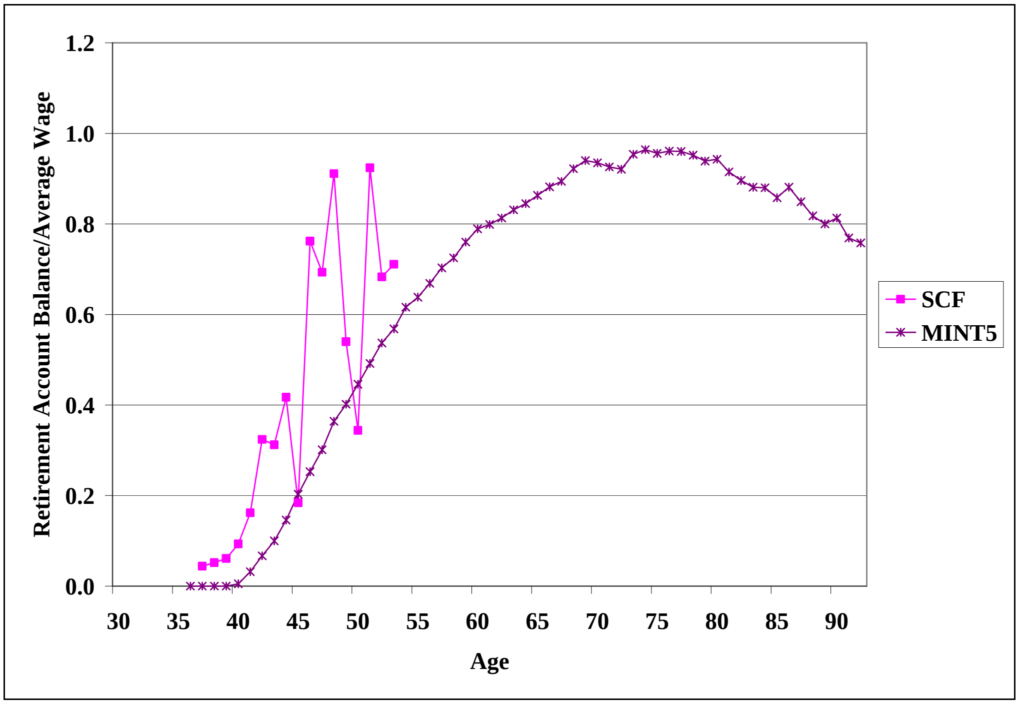
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–11. 60th Percentile Retirement Account Balance/Average Wage 1946-1950 Cohorts by Age and Data Source



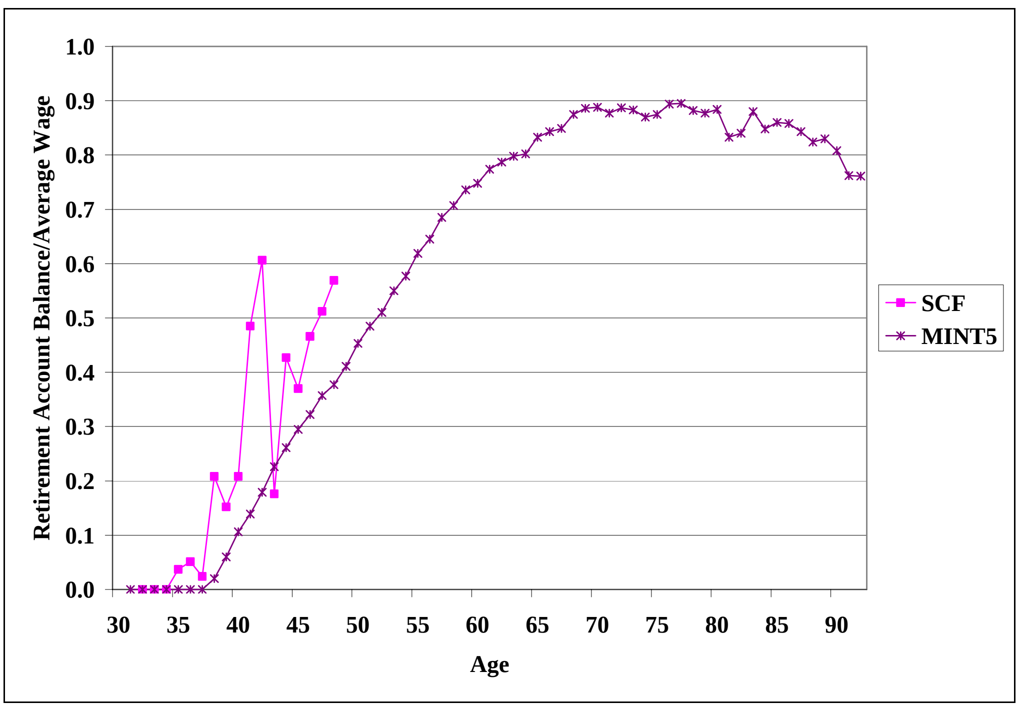
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–12. 60th Percentile Retirement Account Balance/Average Wage 1951-1955 Cohorts by Age and Data Source



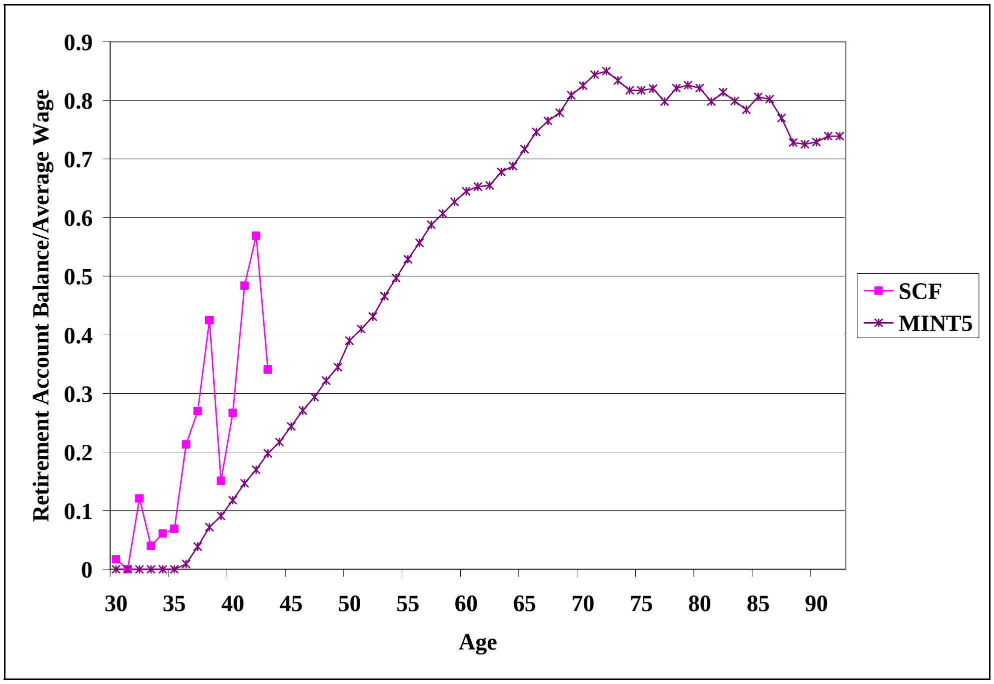
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–13. 60th Percentile Retirement Account Balance/Average Wage 1956-1960 Cohorts by Age and Data Source



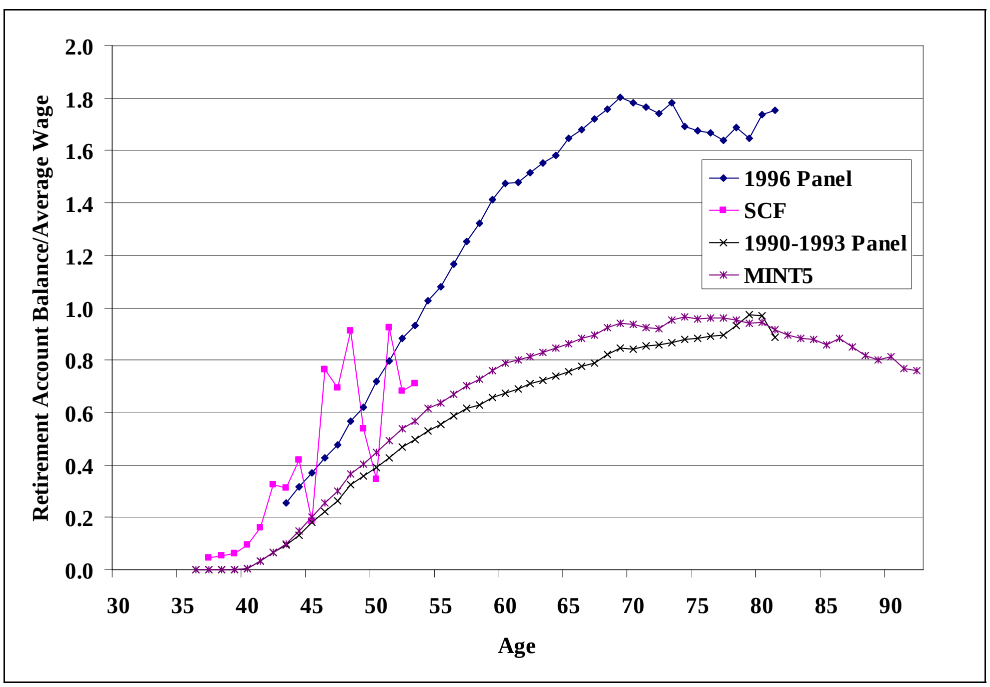
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–14. 60th Percentile Retirement Account Balance/Average Wage 1961-1965 Cohorts by Age and Data Source



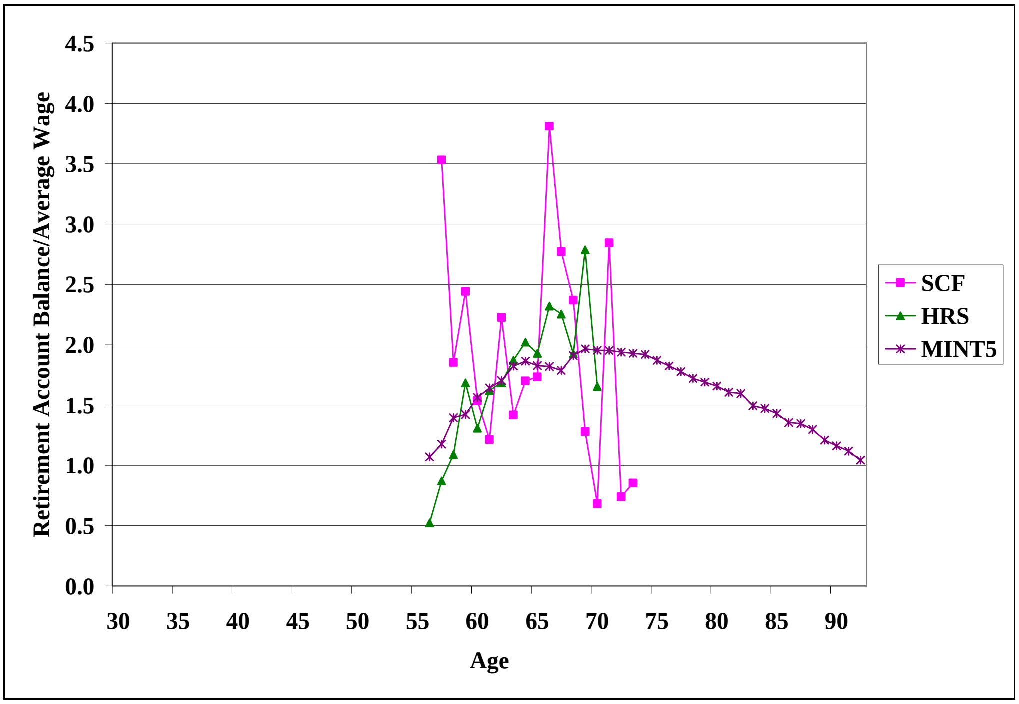
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–15. 60th Percentile Retirement Account Balance/Average Wage 1951-1955 Cohorts by Age and Data Source



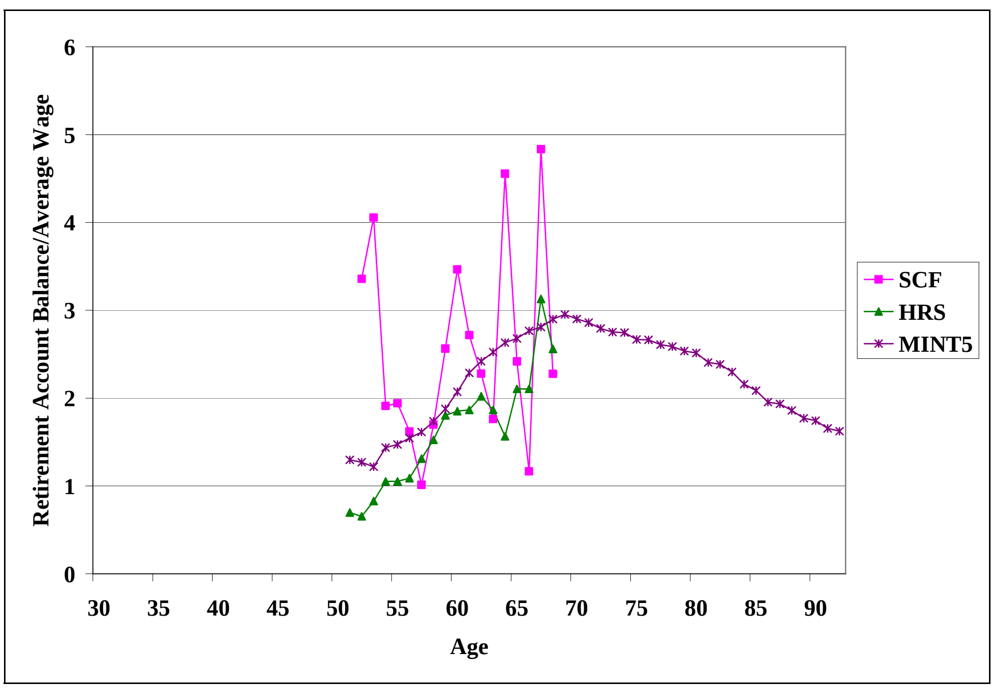
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–16. 80th Percentile Retirement Account Balance/Average Wage 1931-1935 Cohorts by Age and Data Source



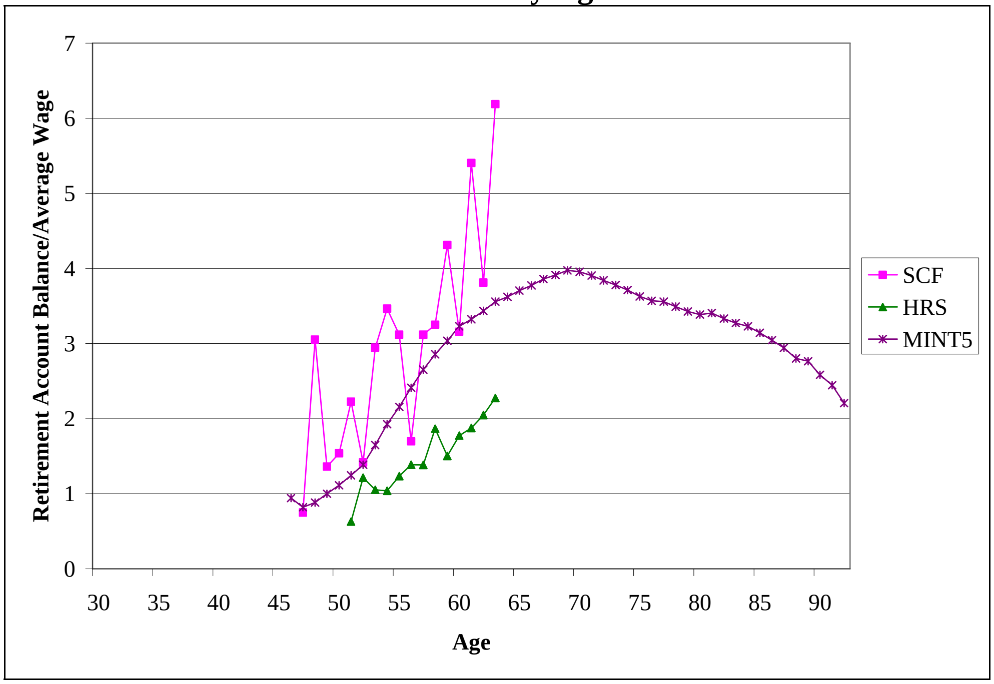
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–17. 80th Percentile Retirement Account Balance/Average Wage 1936-1940 Cohorts by Age and Data Source



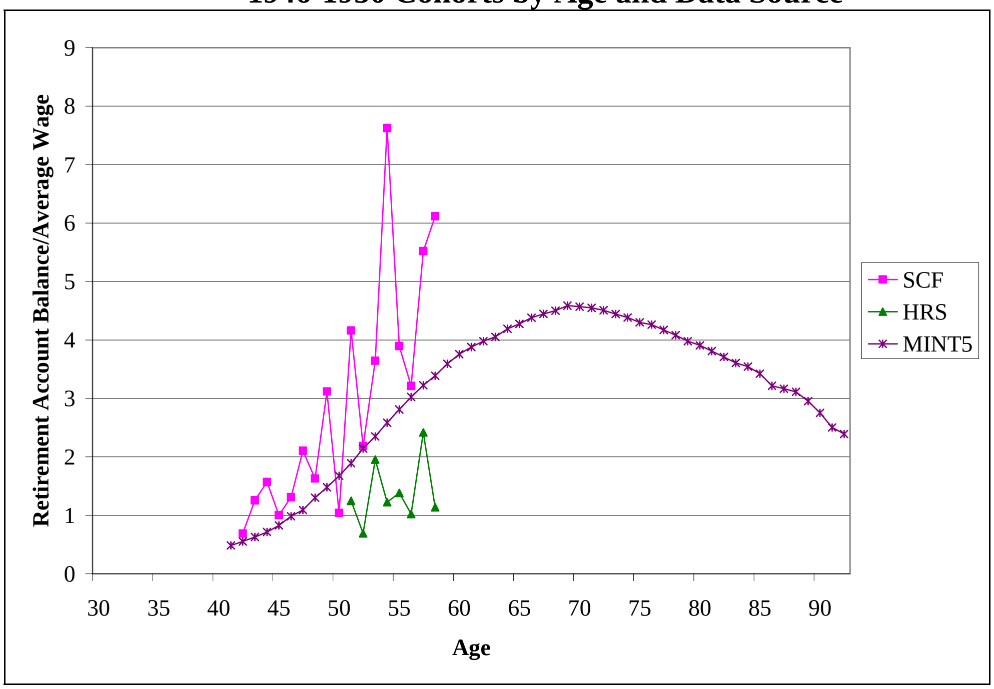
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–18. 80th Percentile Retirement Account Balance/Average Wage 1941-1945 Cohorts by Age and Data Source



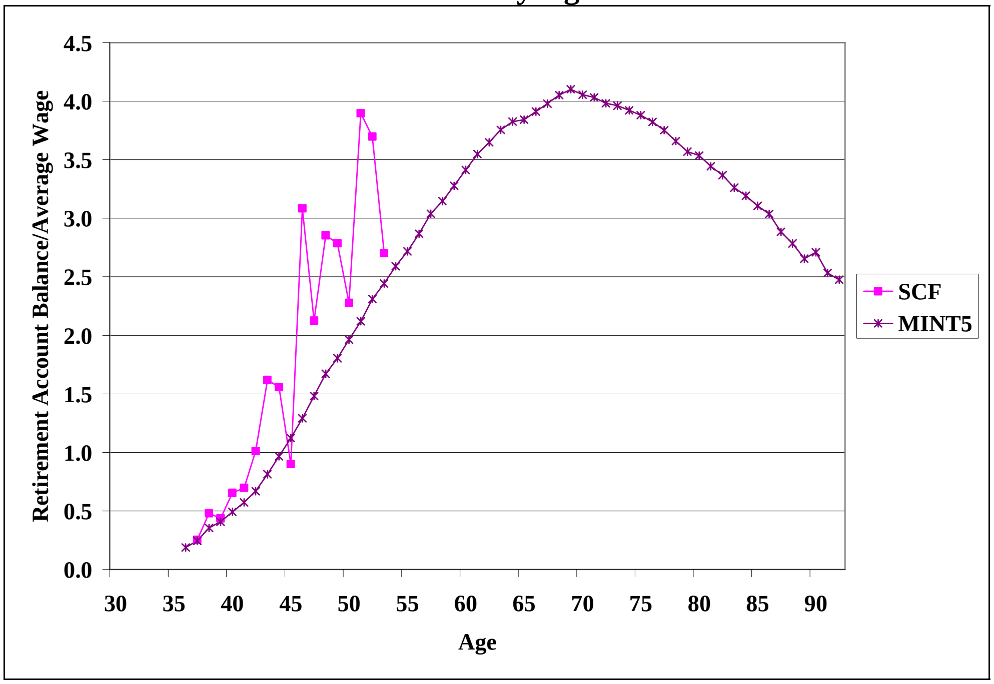
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–19. 80th Percentile Retirement Account Balance/Average Wage 1946-1950 Cohorts by Age and Data Source



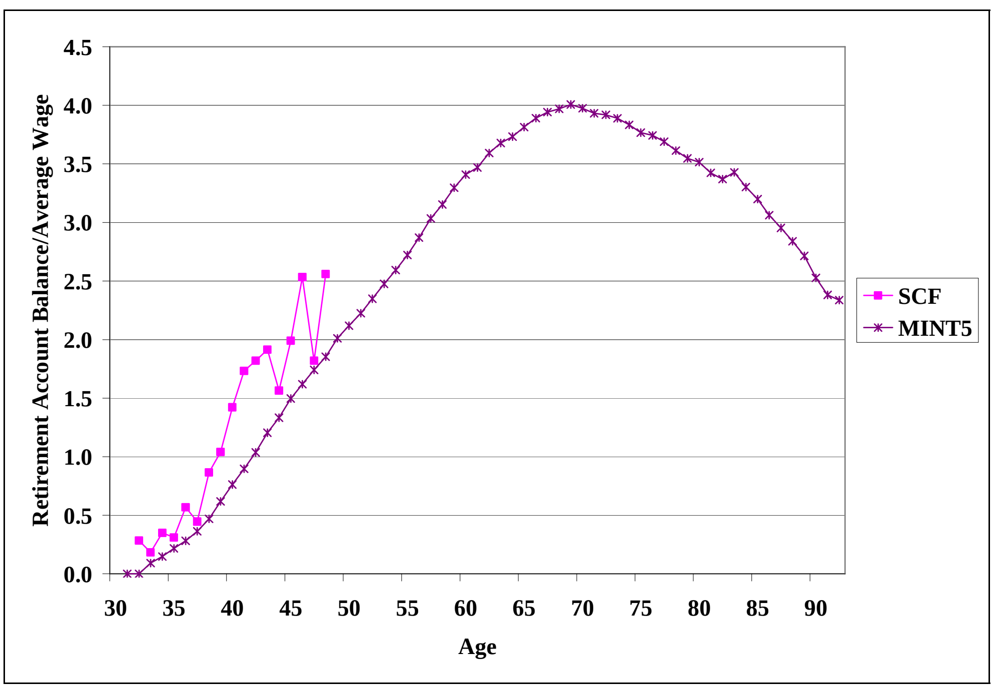
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–20. 80th Percentile Retirement Account Balance/Average Wage 1951-1955 Cohorts by Age and Data Source



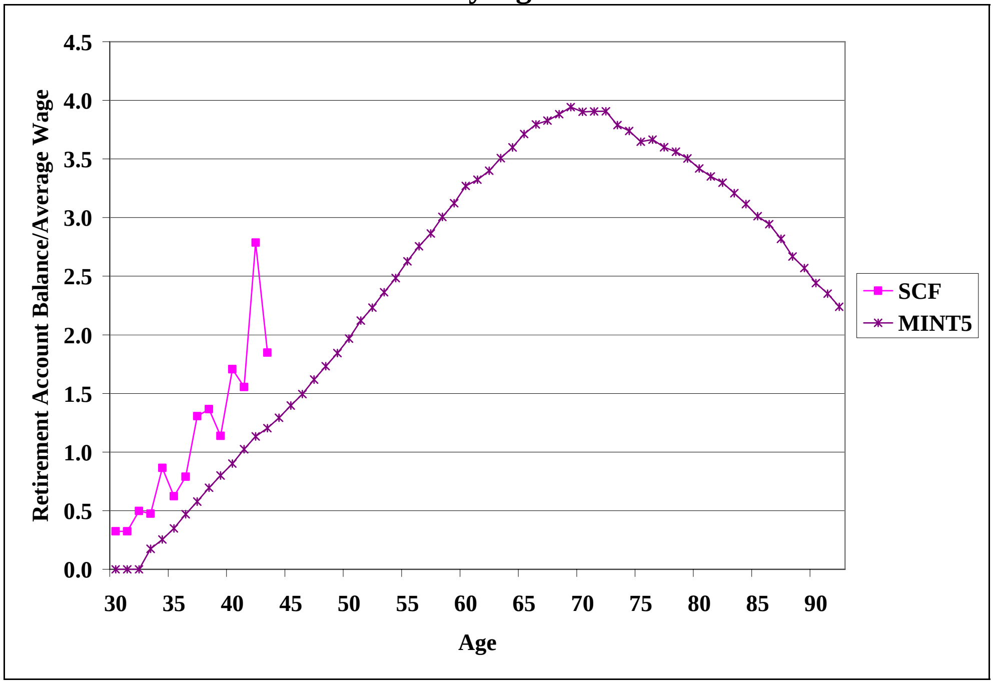
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–21. 80th Percentile Retirement Account Balance/Average Wage 1956-1960 Cohorts by Age and Data Source



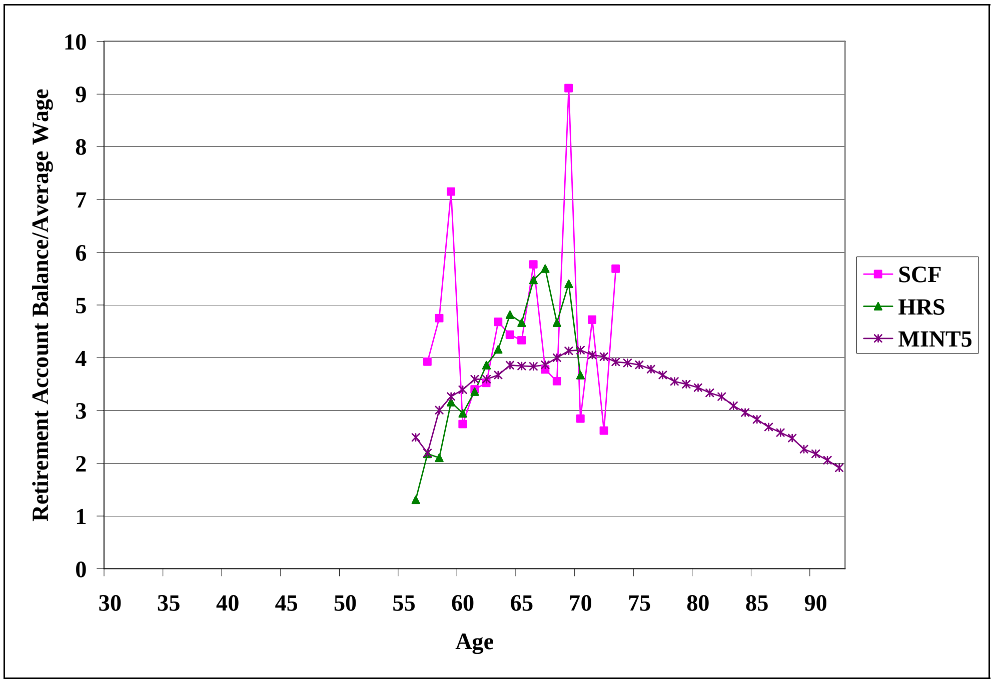
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–22. 80th Percentile Retirement Account Balance/Average Wage 1961-1965 Cohorts by Age and Data Source



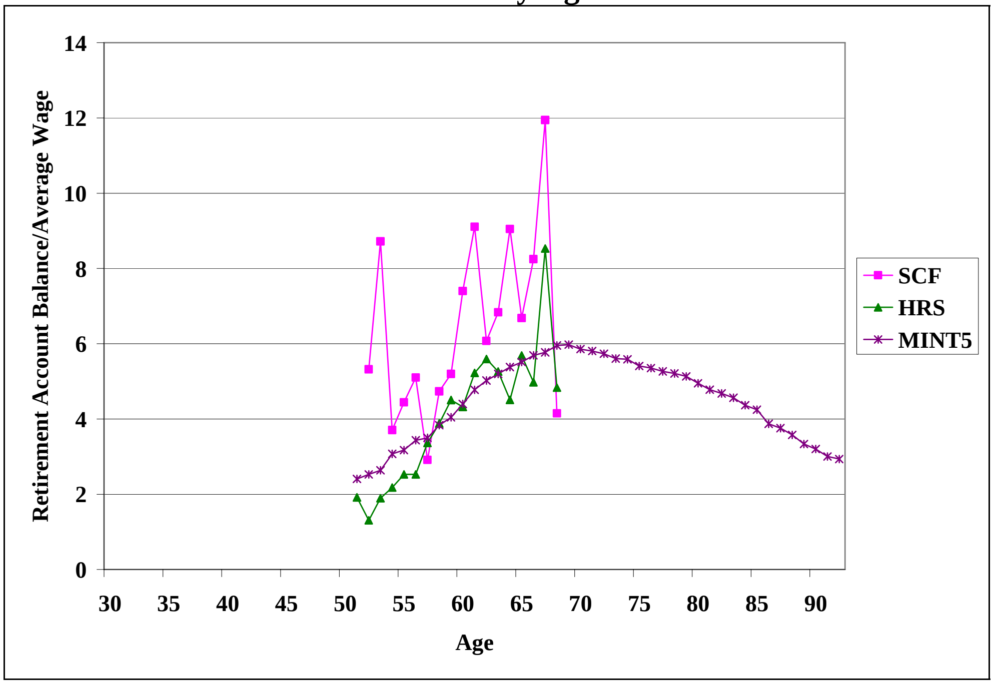
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–23. 90th Percentile Retirement Account Balance/Average Wage 1931-1935 Cohorts by Age and Data Source



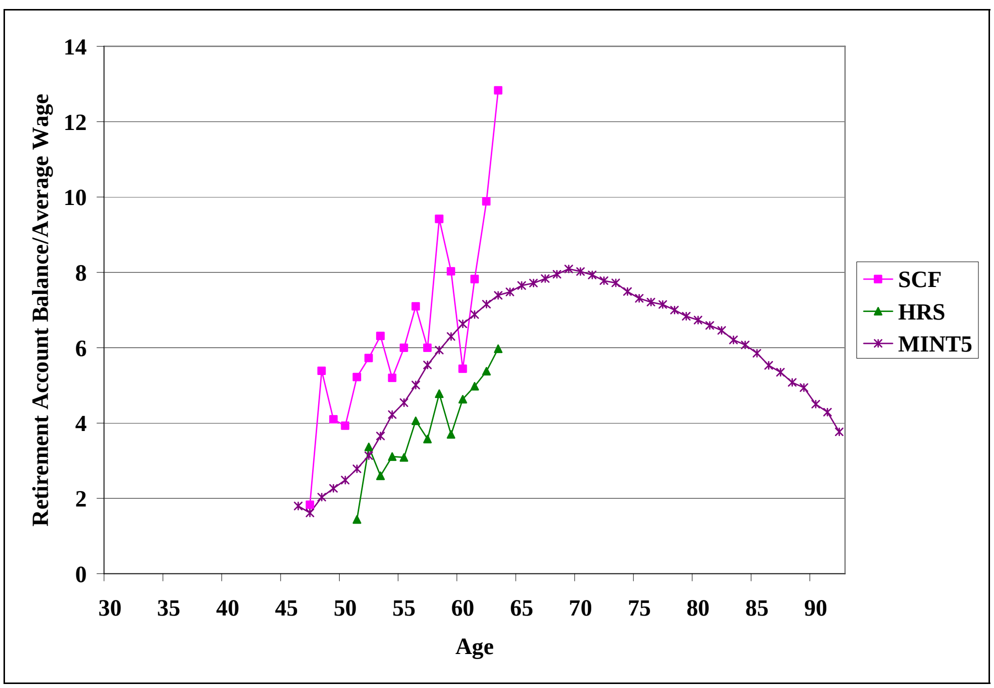
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–24. 90th Percentile Retirement Account Balance/Average Wage 1936-1940 Cohorts by Age and Data Source



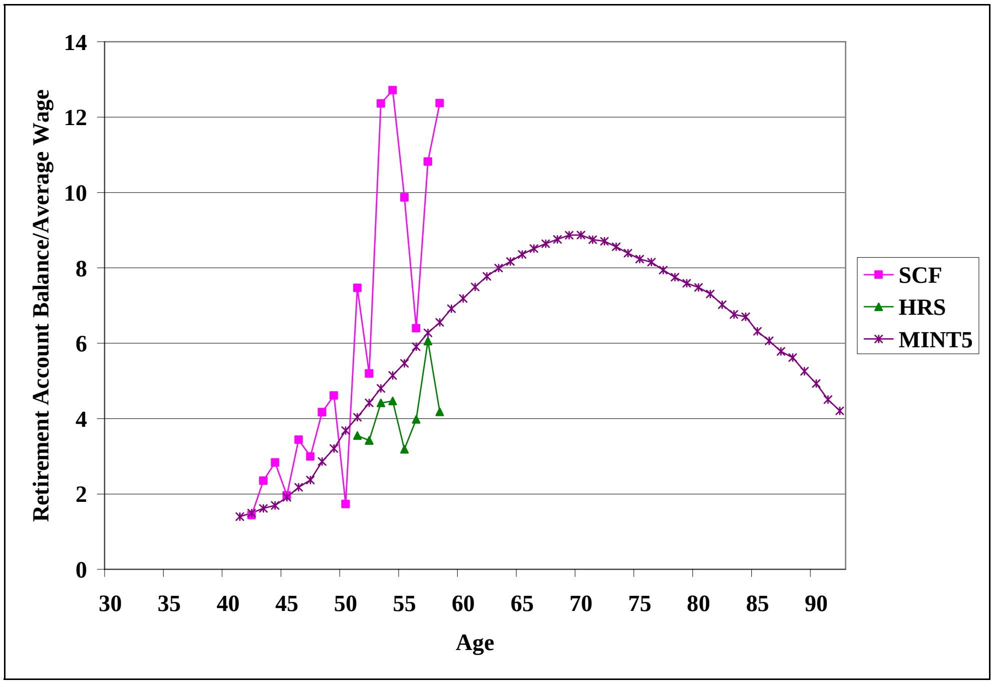
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–25. 90th Percentile Retirement Account Balance/Average Wage 1941-1945 Cohorts by Age and Data Source



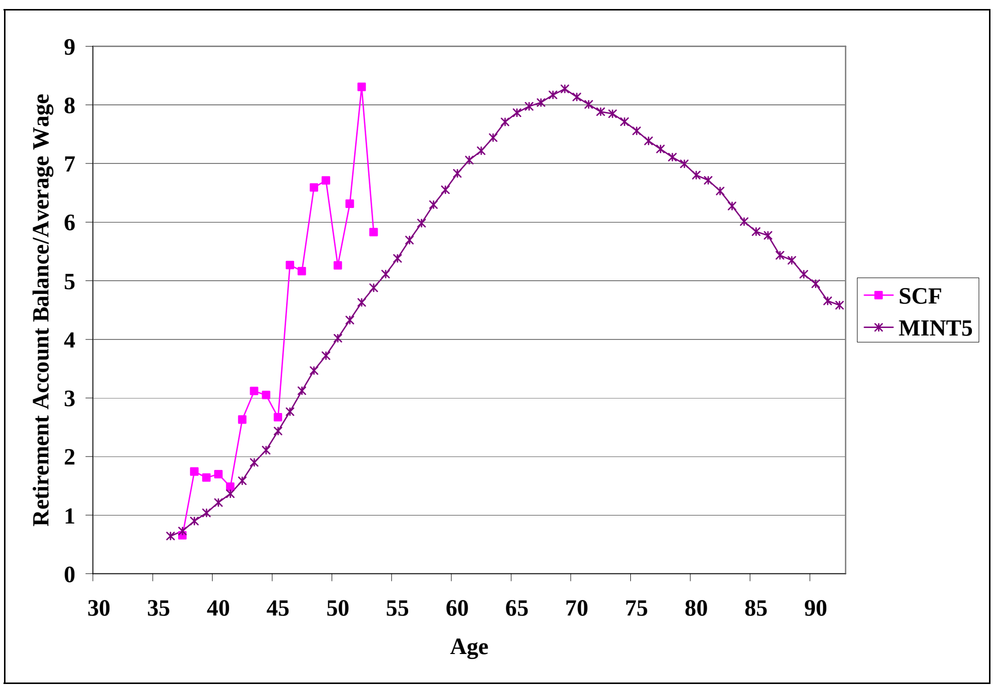
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–26. 90th Percentile Retirement Account Balance/Average Wage 1946-1950 Cohorts by Age and Data Source



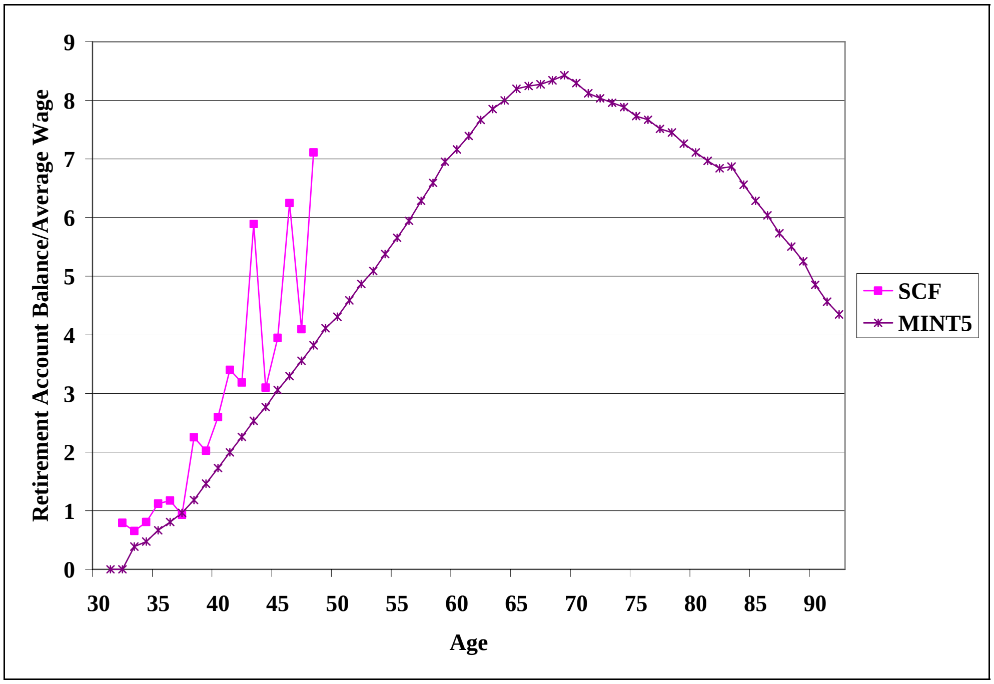
Source: Urban Institute tabulations of MINT5, 1992-2004 SCF, and 1992–2004 HRS.

Figure 8–27. 90th Percentile Retirement Account Balance/Average Wage 1951-1955 Cohorts by Age and Data Source



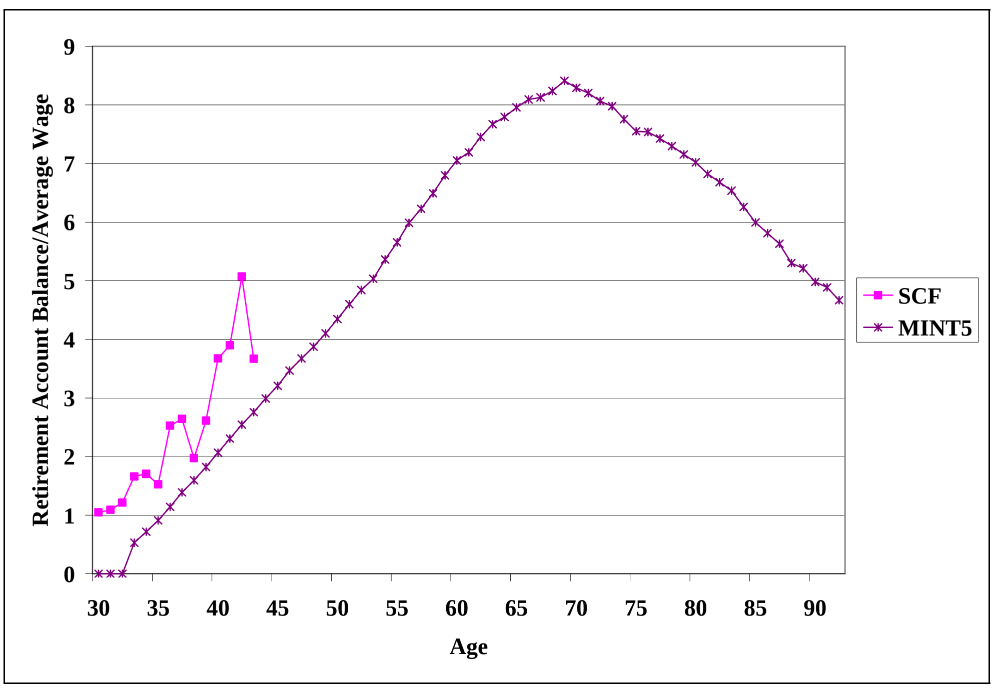
Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF.

Figure 8–28. 90th Percentile Retirement Account Balance/Average Wage 1956-1960 Cohorts by Age and Data Source



Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF

Figure 8–29. 90th Percentile Retirement Account Balance/Average Wage 1961-1965 Cohorts by Age and Data Source



Source: Urban Institute tabulations of MINT5 and 1992-2004 SCF

X. APPENDIX CHAPTER 8

Table A8–1. Adjusted and Unadjusted Ratio of DB and DC Annuity to Total Annuity Income for High and Low Options

Birth Year	High Option				Low Option			
	DB/Total		CD/Total		DB/Total		CD/Total	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
1926	0.9884	0.9884	0.0116	0.0116	0.9884	0.9884	0.0116	0.0116
1927	0.9788	0.9788	0.0212	0.0212	0.9788	0.9788	0.0212	0.0212
1928	0.9704	0.9704	0.0291	0.0291	0.9704	0.9704	0.0291	0.0291
1929	0.9579	0.9579	0.0421	0.0421	0.9579	0.9579	0.0421	0.0421
1930	0.9672	0.9672	0.0333	0.0333	0.9672	0.9672	0.0333	0.0333
1931	0.9250	0.9250	0.0744	0.0744	0.9250	0.9250	0.0744	0.0744
1932	0.9246	0.9246	0.0754	0.0754	0.9246	0.9246	0.0754	0.0754
1933	0.9098	0.9098	0.0896	0.0896	0.9098	0.9098	0.0896	0.0896
1934	0.8880	0.8880	0.1120	0.1120	0.8880	0.8880	0.1120	0.1120
1935	0.8629	0.8629	0.1376	0.1376	0.8629	0.8629	0.1376	0.1376
1936	0.8212	0.8212	0.1788	0.1788	0.8212	0.8212	0.1788	0.1788
1937	0.7485	0.7485	0.2510	0.2510	0.7485	0.7485	0.2510	0.2510
1938	0.7276	0.7276	0.2724	0.2724	0.7276	0.7276	0.2730	0.2730
1939	0.7013	0.7013	0.2987	0.2987	0.7013	0.7013	0.2993	0.2993
1940	0.6822	0.6822	0.3178	0.3178	0.6818	0.6818	0.3182	0.3182
1941	0.6073	0.6073	0.3927	0.3927	0.6066	0.6066	0.3934	0.3934
1942	0.6092	0.6092	0.3908	0.3908	0.6089	0.6089	0.3911	0.3911
1943	0.5913	0.5913	0.4087	0.4087	0.6145	0.6145	0.3855	0.3855
1944	0.5624	0.5624	0.4376	0.4376	0.5563	0.5563	0.4432	0.4432
1945	0.5455	0.5455	0.4545	0.4545	0.5381	0.5381	0.4619	0.4619
1946	0.5359	0.5359	0.4641	0.4641	0.5189	0.5189	0.4816	0.4816
1947	0.5369	0.5369	0.4631	0.4631	0.5128	0.5128	0.4867	0.4867
1948	0.5578	0.5578	0.4422	0.4422	0.5203	0.5203	0.4797	0.4797
1949	0.5207	0.5207	0.4793	0.4793	0.4823	0.4823	0.5177	0.5177
1950	0.4893	0.4893	0.5102	0.5102	0.4414	0.4414	0.5586	0.5586
1951	0.5246	0.5246	0.4754	0.4754	0.4603	0.4603	0.5401	0.5401
1952	0.4927	0.4927	0.5078	0.5078	0.4203	0.4203	0.5797	0.5797
1953	0.5751	0.5751	0.4253	0.4253	0.5133	0.5133	0.4867	0.4867
1954	0.4783	0.4783	0.5222	0.5222	0.3808	0.3808	0.6192	0.6192
1955	0.4813	0.4813	0.5182	0.5182	0.3788	0.3788	0.6217	0.6217
1956	0.4445	0.4445	0.5560	0.5560	0.3366	0.3366	0.6640	0.6640
1957	0.4693	0.4693	0.5307	0.5307	0.3395	0.3395	0.6599	0.6599
1958	0.4432	0.4432	0.5568	0.5568	0.2896	0.2896	0.7104	0.7104
1959	0.4378	0.4378	0.5617	0.5617	0.2775	0.2775	0.7225	0.7225
1960	0.4479	0.4479	0.5521	0.5521	0.2589	0.2589	0.7411	0.7411
1961	0.4313	0.4313	0.5687	0.5687	0.2485	0.2485	0.7515	0.7515
1962	0.4117	0.4117	0.5883	0.5883	0.2325	0.2325	0.7675	0.7675
1963	0.3931	0.3931	0.6064	0.6064	0.1959	0.1959	0.8041	0.8041
1964	0.4126	0.4126	0.5870	0.5870	0.2038	0.2038	0.7962	0.7962
1965	0.4271	0.4271	0.5729	0.5729	0.1923	0.1923	0.8077	0.8077

Table A8–1. Adjusted and Unadjusted Ratio of DB and DC Annuity to Total Annuity Income for High and Low Options

Birth Year	High Option				Low Option			
	DB/Total		CD/Total		DB/Total		CD/Total	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
1966	0.3358	0.3358	0.6642	0.6642	0.1547	0.1547	0.8458	0.8458
1967	0.3222	0.3222	0.6783	0.6783	0.1317	0.1317	0.8683	0.8683
1968	0.3531	0.3531	0.6469	0.6469	0.1318	0.1318	0.8687	0.8687
1969	0.3176	0.3176	0.6824	0.6824	0.1289	0.1289	0.8711	0.8711
1970	0.3433	0.3433	0.6567	0.6567	0.1251	0.1251	0.8749	0.8749
1971	0.3553	0.3553	0.6447	0.6447	0.1279	0.1279	0.8721	0.8721
1972	0.2650	0.2650	0.7345	0.7345	0.1107	0.1107	0.8893	0.8893
1973	0.3525	0.3097	0.6478	0.6903	0.1702	0.0960	0.8298	0.9040
1974	0.3382	0.3040	0.6618	0.6960	0.1900	0.0882	0.8100	0.9118
1975	0.3212	0.2985	0.6788	0.7015	0.1591	0.0809	0.8409	0.9191
1976	0.3480	0.2932	0.6520	0.7068	0.1800	0.0740	0.8200	0.9260
1977	0.3339	0.2881	0.6665	0.7119	0.1799	0.0677	0.8197	0.9323
1978	0.3257	0.2831	0.6743	0.7169	0.1710	0.0618	0.8294	0.9382
1979	0.3393	0.2783	0.6607	0.7217	0.1851	0.0563	0.8149	0.9437
1980	0.3222	0.2737	0.6778	0.7263	0.1761	0.0513	0.8239	0.9487
1981	0.3443	0.2692	0.6557	0.7308	0.1750	0.0466	0.8250	0.9534
1982	0.3185	0.2649	0.6815	0.7351	0.1686	0.0423	0.8314	0.9577
1983	0.3186	0.2608	0.6817	0.7392	0.1647	0.0383	0.8353	0.9617
1984	0.3428	0.2567	0.6572	0.7433	0.1834	0.0347	0.8166	0.9653
1985	0.3184	0.2529	0.6816	0.7471	0.1735	0.0313	0.8265	0.9687
1986	0.3298	0.2491	0.6706	0.7509	0.1700	0.0283	0.8300	0.9717
1987	0.3489	0.2455	0.6507	0.7545	0.1827	0.0255	0.8173	0.9745
1988	0.3250	0.2420	0.6750	0.7580	0.1700	0.0229	0.8296	0.9771
1989	0.3299	0.2386	0.6701	0.7614	0.1752	0.0206	0.8248	0.9794
1990	0.3414	0.2353	0.6586	0.7647	0.1694	0.0184	0.8302	0.9816
1991	0.3100	0.2322	0.6900	0.7678	0.1660	0.0165	0.8344	0.9835
1992	0.3283	0.2292	0.6717	0.7708	0.1808	0.0148	0.8192	0.9852
1993	0.3233	0.2292	0.6763	0.7708	0.1725	0.0148	0.8275	0.9852
1994	0.3221	0.2292	0.6779	0.7708	0.1736	0.0148	0.8264	0.9852
1995	0.3338	0.2292	0.6662	0.7708	0.1806	0.0148	0.8194	0.9852
1996	0.3292	0.2292	0.6708	0.7708	0.1671	0.0148	0.8329	0.9852
1997	0.3350	0.2292	0.6650	0.7708	0.1715	0.0148	0.8285	0.9852
1998	0.3347	0.2292	0.6653	0.7708	0.1875	0.0148	0.8125	0.9852
1999	0.3337	0.2292	0.6663	0.7708	0.1741	0.0148	0.8259	0.9852
2000	0.3213	0.2292	0.6787	0.7708	0.1760	0.0148	0.8244	0.9852
2001	0.3435	0.2292	0.6565	0.7708	0.1759	0.0148	0.8241	0.9852
2002	0.2998	0.2292	0.7002	0.7708	0.1679	0.0148	0.8321	0.9852
2003	0.3634	0.2292	0.6366	0.7708	0.1885	0.0148	0.8115	0.9852
2004	0.3133	0.2292	0.6863	0.7708	0.1676	0.0148	0.8324	0.9852
2005	0.3479	0.2292	0.6524	0.7708	0.1948	0.0148	0.8047	0.9852
2006	0.3211	0.2292	0.6789	0.7708	0.1678	0.0148	0.8322	0.9852
2007	0.3400	0.2292	0.6600	0.7708	0.1874	0.0148	0.8131	0.9852
2008	0.3031	0.2292	0.6972	0.7708	0.1650	0.0148	0.8346	0.9852

Table A8–1. Adjusted and Unadjusted Ratio of DB and DC Annuity to Total Annuity Income for High and Low Options

Birth Year	High Option				Low Option			
	DB/Total		CD/Total		DB/Total		CD/Total	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
2009	0.3241	0.2292	0.6759	0.7708	0.1725	0.0148	0.8275	0.9852
2010	0.3354	0.2292	0.6646	0.7708	0.1817	0.0148	0.8183	0.9852
2011	0.3294	0.2292	0.6706	0.7708	0.1785	0.0148	0.8215	0.9852
2012	0.3294	0.2292	0.6706	0.7708	0.1765	0.0148	0.8239	0.9852
2013	0.3209	0.2292	0.6791	0.7708	0.1705	0.0148	0.8295	0.9852
2014	0.3262	0.2292	0.6738	0.7708	0.1785	0.0148	0.8215	0.9852
2015	0.3313	0.2292	0.6687	0.7708	0.1791	0.0148	0.8209	0.9852
2016	0.3422	0.2292	0.6578	0.7708	0.1728	0.0148	0.8272	0.9852
2017	0.3337	0.2292	0.6663	0.7708	0.1795	0.0148	0.8205	0.9852
2018	0.3313	0.2292	0.6687	0.7708	0.1802	0.0148	0.8198	0.9852

Source: Urban Institute calculations from MINT5.

Table A8–2. Pension Coverage Rate at Age 67 by Birth Year, Sex, Average Indexed Earnings Quintile, and Pension Option

	High Option					Low Option				
Birth Year	**DB**	**DC**	**CB**	**Any**	**ANY DC**	**DB**	**DC**	**CB**	**Any**	**ANY DC**
1926-1930										
Female	0.316	0.037	0.001	0.490	0.298	0.316	0.037	0.001	0.490	0.298
Male	0.548	0.054	0.002	0.699	0.376	0.548	0.054	0.002	0.699	0.376
AIE Quintile										
1	0.122	0.007	0.000	0.275	0.182	0.122	0.007	0.000	0.275	0.182
2	0.290	0.029	0.001	0.449	0.259	0.290	0.029	0.001	0.449	0.259
3	0.479	0.048	0.002	0.626	0.309	0.479	0.048	0.002	0.626	0.309
4	0.571	0.062	0.003	0.714	0.360	0.571	0.062	0.003	0.714	0.360
5	0.657	0.080	0.002	0.872	0.563	0.657	0.080	0.002	0.872	0.563
All	0.422	0.045	0.002	0.586	0.334	0.422	0.045	0.002	0.586	0.334
1931-1935										
Female	0.293	0.102	0.008	0.515	0.355	0.293	0.102	0.008	0.515	0.355
Male	0.524	0.154	0.012	0.710	0.440	0.524	0.154	0.012	0.710	0.440
AIE Quintile										
1	0.106	0.014	0.001	0.270	0.187	0.106	0.014	0.001	0.270	0.187
2	0.249	0.062	0.006	0.459	0.298	0.249	0.062	0.006	0.459	0.298
3	0.473	0.143	0.011	0.677	0.401	0.473	0.143	0.011	0.677	0.401
4	0.552	0.162	0.010	0.745	0.426	0.552	0.162	0.010	0.745	0.426
5	0.623	0.251	0.021	0.877	0.660	0.623	0.251	0.021	0.877	0.660
All	0.400	0.126	0.010	0.605	0.394	0.400	0.126	0.010	0.605	0.394
1936-1940										
Female	0.266	0.195	0.021	0.532	0.405	0.266	0.195	0.021	0.532	0.405
Male	0.452	0.274	0.033	0.686	0.483	0.452	0.274	0.033	0.686	0.483
AIE Quintile										
1	0.078	0.034	0.002	0.250	0.189	0.078	0.034	0.002	0.250	0.189

Table A8–2. Pension Coverage Rate at Age 67 by Birth Year, Sex, Average Indexed Earnings Quintile, and Pension Option

	High Option					Low Option				
Birth Year	**DB**	**DC**	**CB**	**Any**	**ANY DC**	**DB**	**DC**	**CB**	**Any**	**ANY DC**
2	0.227	0.131	0.012	0.461	0.330	0.227	0.131	0.012	0.461	0.330
3	0.389	0.249	0.031	0.654	0.437	0.389	0.249	0.031	0.654	0.437
4	0.520	0.310	0.034	0.780	0.529	0.520	0.310	0.034	0.780	0.529
5	0.552	0.440	0.052	0.880	0.728	0.552	0.441	0.052	0.880	0.729
All	0.353	0.232	0.026	0.604	0.441	0.353	0.232	0.026	0.604	0.441
1941-1945										
Female	0.276	0.243	0.023	0.549	0.416	0.276	0.244	0.023	0.549	0.417
Male	0.431	0.339	0.036	0.698	0.511	0.431	0.340	0.036	0.698	0.512
AIE Quintile										
1	0.077	0.056	0.003	0.249	0.189	0.077	0.056	0.003	0.249	0.189
2	0.235	0.153	0.019	0.471	0.315	0.235	0.155	0.019	0.471	0.317
3	0.395	0.301	0.029	0.676	0.464	0.395	0.301	0.029	0.676	0.464
4	0.507	0.405	0.048	0.802	0.581	0.507	0.407	0.048	0.802	0.581
5	0.535	0.528	0.048	0.902	0.757	0.535	0.530	0.048	0.902	0.757
All	0.349	0.288	0.029	0.619	0.461	0.349	0.289	0.029	0.619	0.462
1946-1950										
Female	0.319	0.300	0.025	0.595	0.448	0.319	0.301	0.025	0.595	0.449
Male	0.412	0.367	0.036	0.685	0.507	0.412	0.370	0.036	0.685	0.510
AIE Quintile										
1	0.082	0.062	0.006	0.228	0.163	0.082	0.061	0.006	0.227	0.162
2	0.243	0.191	0.024	0.485	0.327	0.243	0.194	0.024	0.486	0.330
3	0.402	0.337	0.029	0.700	0.478	0.401	0.341	0.029	0.700	0.482
4	0.535	0.467	0.044	0.844	0.619	0.535	0.469	0.044	0.843	0.622
5	0.537	0.583	0.047	0.906	0.771	0.537	0.586	0.047	0.906	0.772
All	0.364	0.332	0.030	0.638	0.476	0.363	0.334	0.030	0.638	0.478
1951-1955										

Table A8–2. Pension Coverage Rate at Age 67 by Birth Year, Sex, Average Indexed Earnings Quintile, and Pension Option

	High Option					Low Option				
Birth Year	**DB**	**DC**	**CB**	**Any**	**ANY DC**	**DB**	**DC**	**CB**	**Any**	**ANY DC**
Female	0.305	0.321	0.025	0.579	0.434	0.304	0.326	0.025	0.579	0.438
Male	0.384	0.386	0.032	0.659	0.503	0.384	0.391	0.032	0.659	0.506
AIE Quintile										
1	0.099	0.073	0.007	0.223	0.145	0.099	0.074	0.007	0.224	0.147
2	0.226	0.206	0.023	0.461	0.309	0.226	0.213	0.023	0.462	0.315
3	0.382	0.368	0.031	0.694	0.487	0.382	0.375	0.031	0.694	0.492
4	0.484	0.499	0.039	0.813	0.623	0.484	0.504	0.039	0.813	0.628
5	0.526	0.620	0.042	0.903	0.776	0.525	0.623	0.042	0.903	0.778
All	0.342	0.352	0.028	0.617	0.467	0.342	0.357	0.028	0.617	0.471
1956-1960										
Female	0.297	0.342	0.027	0.560	0.425	0.297	0.374	0.027	0.562	0.453
Male	0.350	0.410	0.037	0.630	0.488	0.349	0.440	0.037	0.631	0.514
AIE Quintile										
1	0.120	0.076	0.010	0.233	0.136	0.119	0.088	0.010	0.235	0.147
2	0.224	0.221	0.021	0.440	0.294	0.224	0.255	0.021	0.441	0.325
3	0.342	0.395	0.030	0.638	0.477	0.341	0.427	0.029	0.639	0.504
4	0.437	0.514	0.042	0.780	0.599	0.436	0.557	0.043	0.781	0.635
5	0.491	0.665	0.056	0.878	0.771	0.490	0.699	0.055	0.879	0.799
All	0.323	0.374	0.032	0.594	0.455	0.322	0.405	0.032	0.595	0.482
1961-1965										
Female	0.278	0.367	0.027	0.551	0.420	0.274	0.423	0.027	0.553	0.470
Male	0.335	0.431	0.033	0.611	0.476	0.328	0.487	0.028	0.614	0.527
AIE Quintile										
1	0.128	0.093	0.008	0.240	0.136	0.124	0.110	0.007	0.242	0.152
2	0.232	0.263	0.019	0.449	0.310	0.227	0.314	0.019	0.452	0.356

Table A8–2. Pension Coverage Rate at Age 67 by Birth Year, Sex, Average Indexed Earnings Quintile, and Pension Option

	High Option					Low Option				
Birth Year	**DB**	**DC**	**CB**	**Any**	**ANY DC**	**DB**	**DC**	**CB**	**Any**	**ANY DC**
3	0.309	0.408	0.044	0.611	0.452	0.303	0.478	0.040	0.612	0.519
4	0.399	0.542	0.035	0.746	0.589	0.394	0.625	0.032	0.750	0.665
5	0.456	0.681	0.042	0.850	0.745	0.449	0.738	0.039	0.853	0.793
All	0.305	0.397	0.030	0.579	0.446	0.299	0.453	0.027	0.581	0.497
1966-1970										
Female	0.251	0.404	0.021	0.546	0.446	0.232	0.453	0.013	0.543	0.491
Male	0.314	0.483	0.034	0.630	0.523	0.295	0.525	0.026	0.629	0.559
AIE Quintile										
1	0.102	0.099	0.010	0.215	0.130	0.091	0.121	0.003	0.207	0.152
2	0.204	0.299	0.014	0.459	0.337	0.181	0.343	0.010	0.452	0.378
3	0.311	0.462	0.023	0.619	0.490	0.288	0.521	0.016	0.621	0.547
4	0.341	0.598	0.040	0.759	0.651	0.323	0.661	0.033	0.759	0.705
5	0.445	0.749	0.048	0.877	0.804	0.428	0.789	0.036	0.880	0.832
ALL	0.281	0.442	0.027	0.587	0.483	0.263	0.488	0.020	0.585	0.524

Source: Urban Institute tabulations of MINT5.

Notes: AIE is the average wage-indexed earnings from age 22 to age 62. Any coverage includes DB, DC, CB, IRA, and Keogh coverage. “Any DC” includes DC, IRA, and Keogh coverage.

Table A8–3. Distribution of Own DC Wealth Relative to the Average Wage at Age 67 by Birth Year and Pension Option

	High Option					Low Option				
Birth Year	50th Percentile	80th Percentile	90th Percentile	95th Percentile	98th Percentile	50th Percentile	80th Percentile	90th Percentile	95th Percentile	98th Percentile
1926-1930	0.000	0.666	1.595	2.884	4.638	0.000	0.666	1.595	2.884	4.638
1931-1935	0.000	1.036	2.375	4.345	6.771	0.000	1.036	2.375	4.345	6.771
1936-1940	0.000	1.633	3.809	6.652	10.396	0.000	1.633	3.809	6.652	10.397
1941-1945	0.000	2.259	5.070	8.604	13.799	0.000	2.263	5.079	8.613	13.827
1946-1950	0.000	2.649	5.942	9.599	15.780	0.000	2.678	5.999	9.671	15.934
1951-1955	0.000	2.570	5.964	9.914	16.348	0.000	2.645	6.096	10.103	16.784
1956-1960	0.000	2.523	5.992	10.252	16.821	0.000	2.713	6.318	10.625	17.746
1961-1965	0.000	2.601	6.012	10.711	17.635	0.006	3.025	6.692	11.476	18.872
1966-1970	0.027	3.069	6.737	11.635	19.530	0.077	3.559	7.611	12.559	21.151
1971-1975	0.169	3.493	7.583	12.772	21.472	0.314	4.118	8.190	13.809	23.071
1976-1980	0.333	4.382	8.804	14.509	25.581	0.586	5.152	9.409	15.654	26.806
1981-1985	0.418	4.815	9.277	15.033	26.017	0.722	5.395	9.897	15.976	27.246
1986-1990	0.448	4.785	9.298	15.450	26.434	0.717	5.322	9.944	16.002	27.355
1991-1995	0.458	4.612	9.387	15.599	26.559	0.700	5.324	10.070	16.072	27.659
1996-2000	0.465	4.649	9.360	15.510	26.350	0.702	5.355	9.879	15.906	26.963
2001-2005	0.456	4.549	9.161	14.814	25.792	0.701	5.290	9.817	15.744	26.221
2006-2010	0.468	4.489	9.164	14.922	25.921	0.725	5.299	9.875	15.731	26.612
2011-2015	0.447	4.439	9.110	14.998	25.644	0.699	5.263	9.748	15.740	26.171
2016-2020	0.454	4.339	9.104	14.897	25.231	0.682	5.218	9.572	15.666	25.733

Source: Urban Institute tabulations from MINT5.

Table A8–4. Distribution of Own DB Pension Income Relative to the Average Wage at Age 67 by Cohort and DB Pension Option

	High Option					Low Option				
Birth Year	50th Percentile	80th Percentile	90th Percentile	95th Percentile	98th Percentile	50th Percentile	80th Percentile	90th Percentile	95th Percentile	98th Percentile
1926-1930	0.000	0.325	0.573	0.822	1.162	0.000	0.325	0.573	0.822	1.162
1931-1935	0.000	0.293	0.562	0.784	1.078	0.000	0.293	0.562	0.784	1.078
1936-1940	0.000	0.223	0.448	0.673	0.982	0.000	0.223	0.447	0.672	0.982
1941-1945	0.000	0.177	0.357	0.537	0.834	0.000	0.175	0.350	0.524	0.815
1946-1950	0.000	0.175	0.354	0.549	0.880	0.000	0.164	0.326	0.486	0.750
1951-1955	0.000	0.142	0.316	0.510	0.876	0.000	0.119	0.249	0.380	0.573
1956-1960	0.000	0.114	0.289	0.488	0.889	0.000	0.080	0.185	0.294	0.448
1961-1965	0.000	0.086	0.256	0.443	0.876	0.000	0.046	0.124	0.220	0.367
1966-1970	0.000	0.067	0.230	0.421	0.775	0.000	0.023	0.088	0.163	0.286
1971-1975	0.000	0.062	0.216	0.389	0.753	0.000	0.019	0.063	0.126	0.202
1976-1980	0.000	0.072	0.216	0.379	0.801	0.000	0.018	0.050	0.086	0.142
1981-1985	0.000	0.073	0.213	0.378	0.760	0.000	0.012	0.033	0.056	0.094
1986-1990	0.000	0.067	0.192	0.342	0.688	0.000	0.007	0.019	0.033	0.056
1991-1995	0.000	0.061	0.183	0.329	0.647	0.000	0.005	0.013	0.022	0.037
1996-2000	0.000	0.061	0.182	0.328	0.646	0.000	0.005	0.012	0.020	0.034
2001-2005	0.000	0.062	0.176	0.317	0.623	0.000	0.005	0.012	0.020	0.034
2006-2010	0.000	0.063	0.176	0.317	0.618	0.000	0.005	0.012	0.020	0.034
2011-2015	0.000	0.063	0.177	0.320	0.627	0.000	0.005	0.012	0.019	0.033
2016-2020	0.000	0.060	0.173	0.312	0.640	0.000	0.004	0.011	0.019	0.033

Source: Urban Institute tabulations from MINT5.

Table A8–5. Distribution of DC Annuity Income Relative to the Average Wage at Age 67 by Birth Year and DB Pension Option

	High Option					Low Option				
Birth Year	**50th Percentile**	**80th Percentile**	**90th Percentile**	**95th Percentile**	**98th Percentile**	**50th Percentile**	**80th Percentile**	**90th Percentile**	**95th Percentile**	**98th Percentile**
1926-1930	0.000	0.054	0.126	0.229	0.371	0.000	0.054	0.126	0.229	0.371
1931-1935	0.000	0.082	0.188	0.335	0.520	0.000	0.082	0.188	0.335	0.520
1936-1940	0.000	0.129	0.295	0.507	0.786	0.000	0.129	0.295	0.507	0.786
1941-1945	0.000	0.174	0.384	0.644	1.029	0.000	0.174	0.384	0.645	1.030
1946-1950	0.000	0.201	0.441	0.709	1.166	0.000	0.202	0.444	0.717	1.176
1951-1955	0.000	0.193	0.442	0.726	1.201	0.000	0.199	0.452	0.741	1.221
1956-1960	0.000	0.188	0.441	0.747	1.214	0.000	0.202	0.464	0.777	1.258
1961-1965	0.000	0.192	0.438	0.781	1.255	0.000	0.224	0.484	0.823	1.334
1966-1970	0.002	0.225	0.479	0.844	1.404	0.006	0.264	0.538	0.905	1.520
1971-1975	0.013	0.257	0.536	0.901	1.538	0.024	0.295	0.589	0.981	1.635
1976-1980	0.026	0.324	0.628	1.020	1.783	0.044	0.373	0.693	1.105	1.877
1981-1985	0.033	0.353	0.663	1.066	1.841	0.053	0.404	0.740	1.137	1.926
1986-1990	0.035	0.351	0.662	1.065	1.853	0.053	0.403	0.739	1.135	1.931
1991-1995	0.037	0.344	0.664	1.096	1.859	0.054	0.400	0.745	1.147	1.949
1996-2000	0.037	0.345	0.662	1.092	1.834	0.054	0.401	0.736	1.133	1.920
2001-2005	0.036	0.340	0.650	1.053	1.799	0.054	0.398	0.723	1.117	1.847
2006-2010	0.037	0.338	0.648	1.053	1.800	0.054	0.398	0.724	1.119	1.874
2011-2015	0.036	0.331	0.645	1.080	1.795	0.054	0.393	0.721	1.128	1.854
2016-2020	0.037	0.327	0.643	1.056	1.772	0.053	0.382	0.713	1.116	1.817

Source: Urban Institute tabulations from MINT5.
Notes: Annual DC = DC assets / (annuity factor -11/24) at age 67.

Table A8–6. Distribution of the Sum of DB Income and DC Annuity Relative to the Average Wage at Age 67 by Birth Year and DB Pension Option

Birth Year	High Option					Low Option				
	50th Percentile	80th Percentile	90th Percentile	95th Percentile	98th Percentile	50th Percentile	80th Percentile	90th Percentile	95th Percentile	98th Percentile
1926-1930	0.047	0.386	0.650	0.918	1.272	0.047	0.386	0.650	0.918	1.272
1931-1935	0.049	0.392	0.675	0.940	1.277	0.049	0.392	0.675	0.940	1.277
1936-1940	0.051	0.386	0.664	0.956	1.405	0.051	0.386	0.664	0.955	1.404
1941-1945	0.062	0.380	0.651	1.005	1.497	0.062	0.377	0.649	0.992	1.475
1946-1950	0.067	0.402	0.707	1.114	1.672	0.066	0.385	0.680	1.061	1.583
1951-1955	0.054	0.368	0.685	1.107	1.708	0.052	0.335	0.622	0.990	1.529
1956-1960	0.040	0.352	0.676	1.093	1.798	0.039	0.307	0.594	0.943	1.492
1961-1965	0.030	0.334	0.659	1.087	1.810	0.027	0.298	0.579	0.936	1.507
1966-1970	0.032	0.357	0.679	1.149	1.791	0.027	0.315	0.602	0.996	1.662
1971-1975	0.045	0.384	0.701	1.172	2.040	0.040	0.341	0.638	1.048	1.769
1976-1980	0.057	0.439	0.818	1.343	2.398	0.051	0.408	0.741	1.158	1.975
1981-1985	0.063	0.454	0.870	1.402	2.430	0.058	0.418	0.764	1.173	2.005
1986-1990	0.060	0.448	0.842	1.376	2.428	0.056	0.410	0.757	1.161	1.948
1991-1995	0.058	0.442	0.831	1.377	2.426	0.056	0.406	0.759	1.164	1.959
1996-2000	0.058	0.441	0.821	1.376	2.415	0.056	0.408	0.748	1.156	1.927
2001-2005	0.059	0.435	0.803	1.286	2.385	0.055	0.404	0.740	1.134	1.864
2006-2010	0.060	0.435	0.787	1.277	2.324	0.056	0.404	0.739	1.135	1.879
2011-2015	0.058	0.426	0.786	1.332	2.384	0.056	0.401	0.735	1.147	1.862
2016-2020	0.057	0.417	0.778	1.315	2.361	0.055	0.386	0.722	1.131	1.839

Source: Urban Institute tabulations from MINT5.

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CHAPTER 9

SUMMARY OF MODEL RESULTS

I. OVERVIEW

This chapter brings together all of the components of the MINT5 projections. It presents similar tabulations as those included in chapters 9 and 10 of Toder *et. al.* (2002) for MINT3. It discusses the projections produced by several of the important modules of MINT5, including the work and benefit claiming behavior of the aged, average wealth, and pension coverage. It then summarizes the results of the income projections, beginning with the status of the respective birth cohorts first as they reach age 62 and then as they reach age 67. The projections at age 67 also include the living arrangements of the people living to age 67 and their SSI claiming behavior. This is followed by an examination of the average incomes among the members of the respective cohorts still living in 2020 and 2060. An appendix to this chapter contains tables showing the projection results in greater detail.

MINT5 projects annual income and wealth as a ratio to the economy-wide average wage. The average wage figure used in the development of the model and the projection of future incomes is the average used to construct the Social Security wage index series. Projections reported here are based on the economic assumptions of the Office of the Chief Actuary (OCACT) in the 2006 OASDI Trustees' Report. MINT5 also calibrates the forecasts of disability prevalence and Social-Security-area mortality to the 2006 OCACT assumptions.

MINT5 uses a cloning method to generate projections for individuals born between 1973 and 2018. It was developed as a quick means of generating projections suitable for analyzing Social Security reform options that included personal accounts both in the near term and when fully implemented. MINT5 uses population projections from the Social Security Administration's Polisim model to generate a target population at age 38 by sex, race, hispanicity, education, marital status, immigration age, and immigration source region. MINT5 statistically matches fully projected MINT records for individuals born between 1960 and 1964 to the Polisim target population. The Polisim projections capture the trends in marriage, education, immigration, and racial composition. MINT then generates earnings, assets, and benefit projections for this sample population.

The projections for individuals born between 1930 and 1972 represent the target MINT cohorts. Individuals born after 1972 represent cloning in MINT extension. The analytical work in MINT says much less about what happens after the 1970s cohorts than before.

MINT5 improved on the projection methods implemented for MINT4 (Smith *et. al*. 2005) and made some additional adjustments based on external targets or other off-model assumptions about trends in some variables. It includes more detailed adjustments to match OCACT projections of population size and disability rates. It adjusts death dates for expected increases in life expectancy. It includes adjustments to pension benefits and retirement accounts based on informed judgments about possible future shifts in the composition of employer pensions from DB to DC plans

Projected Social Security benefits in MINT5 are based on applying benefit formulas in current law to MINT's projections of lifetime earnings of workers and their current or previous spouses. MINT5 makes no adjustments to these benefit formulas to account for the projected future shortfall in the OASDI trust funds. This was not a problem in MINT3 or MINT4 because the last projection year fell before the date at which the trust fund is projected to be depleted (2041 in the 2007 Trustees' Report). In MINT5, we project Social Security benefits after this point assuming that they remain as scheduled (as opposed to as payable). Readers should be mindful of this simplifying assumption and interpret the projections of Social Security benefits after 2041, and thus of total family incomes, as upper bound estimates.

II. DEMOGRAPHICS

MINT5 projects that future retirement cohorts will be better educated, contain a higher percentage of African-Americans, Hispanic Americans, and other minority groups, and have proportionately more divorced and never married people than those turning 62 in the mid-1990s. These trends reflect the differences among birth cohorts in the initial SIPP population and the impact of the MINT5 projections of mortality and changes in marital status. They are summarized in Table 9–1.

Educational attainment improves dramatically among individuals born between 1930 and 1960, and then remains fairly stable for individuals born after 1960. The proportion of 62-year-olds with less than a high school diploma declines from 24 percent among the earliest cohorts (those born between 1930 and 1939) to 11 percent for those born twenty years later. The share of high school dropouts then increases to about 14 percent for 62-year-olds born between 1970 and 1979, reflecting an increase in low-educated immigrants in the 1990s. The share of 62-year-olds with a college degree increases from 19 percent among those born in the 1930s to 28 percent for those born 20 years later. The proportion of 62-year-olds who are college graduates continues to increase for later cohorts, increasing to 36 percent for those born between 2010 and 2018.

The non-Hispanic White proportion of the population declines steadily, from 81 percent of 62-year-olds born in the 1930s to 50 percent for those born between 2010 and 2018. The proportion that is African-American increases from 9 percent to 12 percent and Hispanic-Americans increase from 7 percent to 27 percent over the projection period. Asian-Americans and Native-Americans also account for a larger portion of the later retirement cohorts, increasing from 4 percent to 11 percent between the earliest and latest cohort groups. The proportion that is foreign born increases from 11 percent for those born in the 1930s to 26 percent for those born in the 1970s. The foreign born share decreases to 19 percent for those born in the 2010s.[1]

Table 9–1. Percent of Individuals at Age 62, by Individual Characteristics and Year of Birth

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
By Educational Attainment					
High School Dropout	24	11	14	13	13
High School Graduate	57	60	53	51	51
College Graduate	19	28	34	36	36
By Race/Ethnicity					
White, Non-Hispanic	81	73	60	55	50
African-American	9	10	11	12	12
Hispanic	7	11	20	23	27
Other	4	6	9	10	11
By Gender					
Female	53	52	51	50	50
Male	47	48	49	50	50
By Marital Status					
Never Married	4	7	11	12	12
Married	74	68	63	64	64
Widowed	9	6	6	5	5
Divorced	12	19	19	19	19
Immigration Status					
Native Born	89	84	74	79	81
Foreign Born	11	16	26	21	19

Source: The Urban Institute tabulations of MINT5.

A combination of marriage and mortality trends causes a noticeable shift in the family composition of future retirees. Future retirees will have proportionately fewer married and widowed persons and proportionately more who have never married or are divorced. MINT5 projects that the proportion of 62-year-olds that is married will fall from 74 percent for those born in the 1930s to 63 percent for those born in the 1970s. Also, improvements in mortality will result in fewer widow(er)s at age 62, down from 9 percent of those born in the 1930s to 5 percent of those born in the 2010s. These declines are offset by increases in the proportion that are never married and divorced. The

[1] MINT uses 2006 OCACT assumptions on net immigration. OCACT projects constant net immigration after 2010. Under these assumptions, immigrants eventually become a smaller share of the United States population.

proportion of 62-year-olds that is never married more than doubles from 4 percent of the earliest cohorts to 12 percent of the latest cohorts. The proportion that is divorced will increase from 12 percent of 62-year-olds born in the 1930s to 19 percent of those born after 1950.[2]

III. HEALTH AND DISABILITY

MINT5 projects small improvements in health status at both age 62 and age 67 between those born in the 1930s and those born in the 1950s (see Table 9–2). It then worsens slightly for those born in the 1970s. Men's health status remains stable for later cohorts, but women's health status at age 67 continues to decline at age 67 for later cohorts.

Table 9–2. Health and Disability Status

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
Percent in Poor Health[a]					
At age 62:					
Female	30	28	28	28	29
Male	23	22	23	23	22
At age 67:					
Female	33	29	30	31	32
Male	26	23	25	25	25
Percent receiving Disability Insurance Benefits at Age 62 (including SSI concurrents):					
Total:	11	12	12	12	13
Female	8	11	11	11	11
Male	14	13	13	14	15
White, Non-Hispanic	10	11	11	11	11
African-American	17	19	17	18	19
Hispanic	14	12	12	14	14

Source: The Urban Institute projections from MINT5.
a/ Percent in fair or poor health.

Among women, the percent reporting poor health at age 62 is projected to decline from 30 percent for those born in the 1930s to 28 percent for those born in the 1950s.

[2] Appendix Table A9–1a shows detailed breakdown of population characteristics at age 62 by cohort, education, race and ethnicity, gender, and marital status. Appendix Table A9–1b shows the same results but at age 67.

The decline at age 67 between those two cohort groups is even larger, declining from 33 to 29 percent. In contrast, health status among women worsens slightly for those born after 1959 with the percentage of 67-year-old women in poor health increasing to 32 percent for those born between 2010 and 2018. Among men, the percent reporting poor health is projected to decline for those born in the 1930s to those born in the 1950s from 23 percent to 22 percent at age 62 and from 26 percent to 23 percent at age 67. The percentage then rises for later birth cohorts, increasing to 25 percent among 67-year-old men born in the 1970s. The improvements in health between those the 1930s group and the 1950s group reflect, in part, increases in educational attainment, while the decrease in health for later cohorts reflect an increase in the share of minorities and high school dropouts among the later groups.

In MINT5, trends in the incidence of claiming Disability Insurance (DI) are adjusted to correspond with the projections in the 2006 Trustees' Report for the 1926 to 1972 birth cohorts. There is no calibration for those born after 1972. MINT projects a gradual increase in disability prevalence among both men and women at age 62 in the base MINT cohorts. The model projects stable disability prevalence for women and a modestly increasing prevalence for men in the extended cohorts. MINT disability prevalence is about one percentage point too low for 62-year-old men and women born between 2000 and 2018 compared to OCACT.

Throughout the period, African-Americans maintain rates of disability that are higher than rates for both Hispanics and non-Hispanic Whites, but the differential narrows. Hispanics also have higher disability rates than non-Hispanic Whites, but the gap narrows for 62-year-olds born between 1950 and 1979 before increasing again for 62-year-olds Hispanics born after 1990.[3]

IV. RETIREMENT PATTERNS

MINT5 projects the proportion of men who are retired from the labor force at ages 62 and 65 to increase between those born in the 1930s and 1970s, but then decrease slightly for later birth cohorts. The proportion of women who are retired at age 62 also initially rises, but then declines for later cohorts (see Table 9–3). The change in retirement rates by cohort should be treated with caution, however, as much of the change is a result of the definitional change rather than a behavioral change. (MINT5 uses two definitions of retirement. For early cohorts, retirement is based on a 50 percent or more decrease in earnings observed in the historic earnings data. For later cohorts, retirement is based on a drop in hours below 20 hours per week observed in the SIPP data, and the projections use a model based on the drop in hours definition.) Labor force participation and Social Security take-up rates (described below) are measured consistently across cohorts, making them better measures of retirement trends.

[3] Appendix Table A9–2a shows the percent of men and women expected to be in fair or poor health by age, gender and cohort. Appendix Table A9–2b shows the percent of individuals expected to receive DI or SSI at age 62 by gender, race, and cohort.

Table 9–3. Percent of Each Cohort Who Have Retired from Work by Age

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
By Age 62					
Total	58	70	67	66	66
Female	65	75	71	72	72
Male	50	64	62	59	59
By Age 65					
Total	76	82	80	80	81
Female	80	87	84	85	85
Male	72	77	76	76	76

Notes: Retirement is defined as working 20 hours or less or a 50 percent earnings drop. Persons not in the labor force at age 50 are considered retired. Disabled individuals are excluded from table.
Source: The Urban Institute projections from MINT5.

Aggregate Social Security benefit take-up rates are projected to decline slightly over time at age 62 but increase slightly at 65 (see Table 9–4). There are noticeable shifts in take-up rates at the bottom and top AIME quintiles. For workers in the lowest earnings quintile, take-up rates are expected to increase from 63 percent for those born in the 1930s to 70 percent for those born in the 1950s, and then decline to 67 percent for those born in the 2010s. In contrast, take-up rates at age 62 for the highest earnings quintile are projected to decrease over the 88-year period by 13 percentage points (from 49 percent for those born in the 1930s to 36 percent for those born in the 2010s. The middle quintile is expected to see a slight increase in take-up rates. The increase in take-up rates among the lowest earners occurs despite the increase in actuarial reduction factors associated with the increase in the normal retirement age. One can attribute the higher take-up rates to greater Social Security coverage among all workers and increased Social Security eligibility among women based on their own earnings, which allows them more independence in the take-up decision relative to women without earnings who have to wait for their husband to take-up Social Security before collecting a benefit.[4]

[4] Appendix Table A9–3a shows more detailed projections of retirement age by gender and cohort. Appendix Table A9–3b shows more detailed projections of Social Security benefit take-up age by gender and cohort. Appendix Table A9–3c shows more detailed projections of Social Security take-up by AIME quintile and cohort.

Table 9–4. Percent of Each Cohort Who Have Taken Up Social Security Benefits by Age

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
By Age 62					
Total	58	57	56	55	55
Female	63	63	61	61	62
Male	52	51	51	49	48
AIME Quintile					
Bottom	63	70	65	66	67
Second	67	70	65	67	69
Third	56	60	63	61	61
Fourth	55	51	48	44	44
Top	49	37	39	38	36
By Age 65					
Total	88	90	88	88	89
Female	89	93	91	92	92
Male	88	86	86	85	86
AIME Quintile					
Bottom	82	89	87	89	89
Second	91	96	93	93	95
Third	89	93	94	94	94
Fourth	91	90	86	86	87
Top	89	81	82	80	80

Source: The Urban Institute projections from MINT5.

Total labor force participation at age 62 generally rises between cohorts born in the 1930s to those born in the 2010's; however, the aggregate trend masks differences in men's and women's behavior. Female participation at age 62 rises with each successive cohort from 1930 to 2018. Male participation at age 62 initially falls for men born between 1930 and 1970. Male participation is then projected to return to earlier levels for men born in 2018. Predicted labor force participation at age 65 declines for both men and women born between 1930 and 1979. The reduction is greater for men than for women. Labor force participation at age 65 then increases slightly for men and women born after 1979. These results are summarized in Table 9–5.

Social Security beneficiaries often remain in the labor force even after beginning to collect their benefits. In fact, over half of beneficiaries at age 62 remain active in the labor force for all retirement groups. This number drops to slightly below half for beneficiaries at age 65. The proportion of Social Security female beneficiaries who remain in the labor force at age 62 is projected to increase from 44 percent for those born in the 1930s to 50 percent for those born in the 2010s, while male beneficiary participation is projected to fall from 64 percent for those born in the 1930s to 51 percent for men born in the 1950s. Male beneficiary labor force participation then rises to 57 percent for men born in the 2010s. The labor force participation rate falls for 65-year-old beneficiaries born from 1930 to 1979, before it increases through beneficiaries born in 2018. Again, the aggregate trend masks differences by sex. Beneficiary participation is higher for men than for women, but male participation falls more than female participation. The gap widens after the 1979 cohort, however, as male participation increases slightly more than female participation.[5]

Table 9–5. Percentage of Workers with Positive Earnings[a] by Age

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
By Age 62					
Total	63	66	65	68	68
Female	53	61	61	62	62
Male	75	71	70	74	75
All Beneficiaries	52	50	51	54	53
Female Beneficiary	44	49	50	51	50
Male Beneficiary	64	51	54	58	57
By Age 65					
Total	46	42	41	44	44
Female	39	38	38	40	39
Male	55	47	44	48	49
All Beneficiaries	46	38	37	39	40
Female Beneficiary	39	35	36	37	37
Male Beneficiary	54	41	39	42	43
By Age 67					
Total	35	30	28	29	29
Female	29	27	25	25	24
Male	42	33	31	33	34
All Beneficiaries	35	29	27	28	28
Female Beneficiary	28	26	24	24	24
Male Beneficiary	42	32	29	31	32

Source: The Urban Institute projections from MINT5.
a/ Table is limited to non-institutionalized workers (have earnings after age 50) who never get DI benefits. Total includes both Social Security beneficiaries and nonbeneficiaries. Beneficiaries include only old age and survivor beneficiaries.

[5] Appendix Tables A9–4a and A9–4b show more detailed projections of labor force participation. Table A9–4a includes individuals who never work from age 50 and older; Table A9–4b excludes them. Table A9–4c shows the employment status and earnings by benefit type (DI, OASI, none) at age 62.

V. PENSION COVERAGE

Table 9–6 summarizes pension coverage projections at age 62 by year of birth and coverage type. MINT5 projects that pension coverage (including IRAs) at age 62 will increase from 58 to 61 percent between individuals born in the 1930s and those born in the 2010s. The increase is largely due to significant increases in the female coverage rate, but male coverage also increases over time. Among 62-year old women, job-based pension coverage (DB, DC, and CB) increases from 34 percent for women born in the 1930s to 52 percent for women born in the 1950s. Men's coverage is higher than women's, but it increases less--rising 57 percent for men born in the 1930s to 60 percent for men born in the 1950s and 62 percent for later cohorts.

As job-based pension (DB, DC, and CB) coverage increases over time, the mix in pension type will shift away from defined benefit pensions to defined contribution and cash balance pensions. MINT5 projects that overall employment pension coverage rates (DB, DC, and CB) for 62-year-olds will increase from 45 percent for individuals born in the 1930s to 57 percent for those born in the 2010s. DB coverage rates will decrease from 43 percent for the 1930s cohorts to 30 percent for the 1970s cohorts, while DC coverage rates increase from 5 percent to 45 percent across the same period. Less than one percent of 62-year-olds born in the 1930s are projected to be covered by a cash balance plan. (CB plans began to emerge only in the 1990s and usually included transition provisions that kept older workers in the DB plan.) Conversions have recently ceased and only 3 percent of 62-year-olds born after 1950 are projected to be covered by a CB plan. The rate of dual coverage (have both DB and DC pension plans) is projected to increase from 2 percent of 62-year-olds born in the 1930s to 25 percent of 62-year-olds born in the 1950s. The rise in dual coverage reflects, in part, the increase in job changes among later cohorts compared to earlier cohorts, which increases the probability of having multiple pension types, and the increase in employers that provided dual coverage. Also, all modeled DB plan freezes were accompanied with either a new or enhanced DC plan.

MINT5 does not project any new IRA accounts beyond those observed on the base SIPP data, nor does it project IRA roll-overs from DC accounts. As a result, IRA coverage rates decline for later cohorts and DC coverage rates probably increase more than they otherwise would, with the net effect on coverage rates unclear for later cohorts.

MINT5 overstates the share of workers covered by a DB plan for cohorts born after 1972 that work in firms that froze their DB plan. The cloning method used to project cohorts born from 1973 to 2018 retains the age-specific characteristics of the donor records, including pension coverage. The probability of being covered by a DB pension in the firms that freeze plans, however, depends on the year the worker joined the firm; workers joining those firms after the freeze would not have DB coverage. The year that DB coverage in these firms disappears for new workers will be at increasingly younger ages for later cohorts and eventually no worker in a cohort will get a DB pension at these firms. (Some employers, especially in the public sector, will continue to offer DB coverage to new workers.) MINT5 adjusts the pension dollars from DB to DC for individuals born after 1972, but does not adjust the DB pension coverage. See chapter 8 for more details.

Pension coverage is higher for high earners than for low earners, and relative coverage rates within lifetime earning quintiles are projected to change over time. MINT5 projects that job-based coverage rates among low earners will increase slightly between the 1930s cohorts and the 1970s cohorts (from 13 percent to 20 percent for the bottom earnings quintile) and then fall slightly (to 15 percent) for the 2010s cohorts. Coverage in the top earnings group, in contrast, will increase significantly between 1930s and 2010s cohorts (from 68 percent to 86 percent) with the biggest gains occurring between the 1930s and 1950s cohorts.[6]

Table 9–6. Pension Coverage at Age 62

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
All Individuals at Age 62					
Any coverage (DB, DC, CB, or IRA)	58%	60%	60%	61%	61%
DB, DC, or CB coverage	45	53	56	57	57
DB coverage	43	33	30	31	32
DC coverage	5	35	45	45	45
CB coverage	0	3	3	3	3
IRA coverage	30	18	10	12	11
DB, DC, or CB					
Total	45	53	56	57	57
Female	34	49	52	51	51
Male	57	57	60	62	62
Bottom AIME Quintile	13	15	20	16	15
Second AIME Quintile	30	37	43	42	42
Third AIME Quintile	50	58	62	60	60
Fourth AIME Quintile	59	73	74	80	79
Top AIME Quintile	68	80	84	85	86

Source: The Urban Institute projections from MINT5.

VI. RETIREMENT WEALTH

MINT5 projects that future retirement cohorts will enjoy greater retirement wealth relative to the average wage than earlier retirement cohorts have had, with wealth peaking

[6] Appendix Table A9–5a shows pension coverage at age 62 by pension type, gender, and cohort. Appendix Table A9–5b shows the pension coverage at age 62 by AIME quintile and cohort.

for the 62-year-olds born in the 1990s and falling slightly thereafter (see Table 9–7). The increase comes from substantial growth of both assets in defined contribution pension plans, including IRAs, and financial wealth held outside of pension plans. The top five percent of the wealth distribution among all cohorts has a large share of both forms of wealth. Over time, DC account balances comprise a rising fraction of total financial wealth. DC account balances are a much higher share of financial wealth for the bottom 95 percent of the population than for the top 5 percent. Home ownership rates increase slightly for both singles and married couples. Home ownership rates increase for singles between singles born in the 1930s to singles born in the 1950s, but then single home ownership falls for subsequent cohorts. As singles become a larger share of 62-year-olds, singles have a greater influence on the aggregate home ownership trend. Total home ownership rates increase for 62-year-olds born in the 1930s to those born in the 1950s, and then fall for subsequent cohorts born after the 1950s because single households, who have lower homeownership rates, become a larger share of the population.

MINT5 projects that per capita home equity (relative to the average wage) at age 62 will fall over time. The aggregate trend masks differences in changes in average home equity between married and single 62-year-olds who are homeowners. Relative per capita home equity among single home owners is projected to increase from 3.1 times the average wage for 62-year-olds born in the 1930s to 3.8 times the average wage for 62-year-old born in the 1990s. Over the same period, the per capita home equity for married homeowners is projected to fall from 1.9 times the average wage to 1.7 times the average wage.

Sixty-two-year-olds born in the 1930s had, on average, financial assets equal to 6.4 times the average wage. The average rises to 10.8 times the average wage for 62-year-olds born in the 1990s and then falls to 10.5 times for those born in the 2010s. The wealthiest households own a large share of the total assets of each cohort. This is illustrated in the second set of financial wealth numbers in Table 9–7, which repeat the earlier calculations but exclude from each cohort the wealthiest five percent of individuals. When the wealthiest five percent are excluded, average total assets decrease by about 50 percent and the growth of DC pension plans becomes relatively more important as a source of growth of financial wealth in general. Excluding the top 5 percent of wealth holders, DC plans grow from about 20 percent of total financial wealth among 62-year-olds born in the 1930s to 48 percent for those born in the 2010s.[7]

[7] Appendix Tables A9–6a through A9–6d show more detailed wealth breakdowns by age and cohort. Tables A9–6a and A9–6c include all wealth holders. Tables A9–6b and A9–6d exclude the top five percent of wealth holders to eliminate outliers.

Table 9–7. Mean Wealth of Retirement Cohorts at Age 62
(Ratio of Wealth to the Economy-Wide Average Wage)

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
Financial Assets (per capita)					
Entire Sample (mean)					
Total	6.4	9.9	9.7	10.8	10.5
Defined Contribution Plans (including DC, CB, IRAs, and keogh)	0.7	1.6	2.3	2.7	2.6
Non-pension Financial Wealth	5.7	8.2	7.4	8.1	7.9
Bottom 95% of wealth distribution (mean)					
Total	3.1	4.1	4.5	5.0	4.8
Defined Contribution Plans (including IRAs)	0.6	1.4	1.9	2.3	2.3
Non-pension Financial Wealth	2.4	2.8	2.6	2.7	2.5
Housing Wealth (per capita)					
All Units					
Portion with Positive Housing Wealth	80%	83%	80%	80%	80%
Mean Wealth	1.7	1.7	1.4	1.5	1.5
Mean Wealth of Those Having Wealth	2.1	2.1	1.8	1.9	1.9
Married Persons					
Portion with Positive Housing Wealth	88%	91%	91%	92%	92%
Mean Wealth	1.7	1.7	1.4	1.5	1.5
Mean Wealth of Those Having Wealth	1.9	1.9	1.6	1.7	1.6
Single Individuals					
Portion with Positive Housing Wealth	56%	67%	61%	59%	59%
Mean Wealth	1.8	2.2	2.1	2.2	2.2
Mean Wealth of Those Having Wealth	3.1	3.3	3.3	3.8	3.7

Source: The Urban Institute projections from MINT5.
Notes: Asset and equity values are per capita amounts. Husbands and wives split total couple assets.

Table 9–8 shows the distribution of different forms of wealth among wealth groups. Only slightly more than half of individuals born in the 1930s are projected to have had any DC pension plan balance when they reached age 62. DC plan balances are concentrated among the top quintile of the wealth distribution. Among 62-year-olds born in the 1930s, the individual at the 95th percentile held over 3 times the DC assets held by the individual at the 80th percentile and 4.8 times the cohort average. Because of increasing DC coverage rates, the concentration decreases slightly over time. Among those born in the 1990s, about 71 percent of families at age 62 will have a retirement account and the individual at the 95th percentile will hold 2.7 times the amount held by the individual at the 80th percentile and 4.3 times the cohort average.

Table 9–8. Mean Per Capita Wealth at Age 62 at Different Points in the Wealth Distribution
(Ratio of Wealth to the Economy-Wide Average Wage)
(Percentiles apply to each form of wealth)

	Mean Wealth	20th Percentile	50th Percentile	80th Percentile	90th Percentile	95th Percentile
Born 1930-1939						
DC pension wealth	0.73	0.00	0.02	1.15	2.31	3.51
Non pension wealth	5.68	0.07	0.98	5.16	10.49	20.65
Total financial wealth	6.41	0.11	1.41	6.60	12.60	23.93
Housing wealth	1.70	0.02	1.16	2.74	3.98	5.56
Born 1950-1959						
DC pension wealth	1.52	0.00	0.23	2.33	4.54	7.16
Non pension wealth	8.24	0.12	0.93	5.15	12.92	27.49
Total financial wealth	9.86	0.28	1.92	8.24	17.24	32.65
Housing wealth	1.88	0.14	0.88	2.66	4.52	6.88
Born 1970-1979						
DC pension wealth	2.15	0.00	0.50	3.36	6.12	9.74
Non pension wealth	7.43	0.10	0.86	4.56	12.22	25.53
Total financial wealth	9.71	0.38	2.21	8.93	18.47	34.51
Housing wealth	1.66	0.03	0.69	2.23	3.94	6.53
Born 1990-1999						
DC pension wealth	2.51	0.00	0.80	3.99	7.16	10.84
Non pension wealth	8.14	0.10	0.82	4.60	13.36	28.94
Total financial wealth	10.83	0.44	2.50	9.97	20.88	38.91
Housing wealth	1.77	0.00	0.71	2.36	4.46	6.86
Born 2010-2018						
DC pension wealth	2.43	0.00	0.74	3.92	6.76	10.70
Non pension wealth	7.89	0.10	0.79	4.24	12.52	27.96
Total financial wealth	10.50	0.42	2.39	9.24	20.13	36.42
Housing wealth	1.74	0.01	0.67	2.31	4.41	6.75

Source: The Urban Institute projections from MINT5.
Notes: DC wealth includes DC, IRA, and Keogh balances.

While DC wealth becomes less concentrated over time, both housing wealth and non-pension financial wealth become more unequally distributed over time. Among the 62-year-olds born in the 1930s, the individual in the 95th percentile has 4.0 times more non-pension financial wealth than the individual at the 80th percentile. Among the 62-year-olds born in the 2010s, this ratio increases to 6.6. The ratio of the 95th percentile to the 80th percentile for home equity is projected to rise from 2.0 for the 1930s cohorts to 2.9 for the 2010s cohorts.[8]

[8] Appendix Table A9–7 shows wealth distributions for all retirement cohorts.

VII. INCOME AT AGE 62

MINT5 projects that average per capita income at age 62 will rise from 102 percent of the average wage for 62-year-olds born in the 1930s to 110 percent of the average wage for those born in the 2010s, but it does not rise smoothly by cohort. MINT5 projects that average relative per capita income at age 62 will rise between those born in the 1930s and those born in the 1950s and then fall for cohorts born in the 1970s, before it rises again for those born in the 2010s (see Table 9–9). In order to insulate the income trends from the effect of changes among a few outliners, these calculations exclude the records of the five percent of the sample in each cohort that had the highest per capita income from assets.

Increases in per capita income relative to the average wage between those born in the 1930s and the 1950s are the result of increases in income from financial assets (including non-pension assets, DC, IRA, Keogh, and cash balance assets) and earnings. These increases are partially offset by a significant decrease in relative income from defined benefit pensions and a modest decrease in relative Social Security benefits. MINT5 projects that average income from financial assets will rise from 17 percent of the average wage among 62-year-olds born in the 1930s to 26 percent of the average wage among those born in the 1990s. It is important to keep in mind that only about half of individuals have retired and taken up Social Security at age 62.[9] The relative values of earnings, Social Security, and pension income reflect the mixed employment status of 62-year-olds.

The decline in per capita income relative to the average wage at age 62 for individuals born in the 1970s compared to those born in the 1930s results from a decline in DB pensions and earned income. Average per capita earnings is projected to decline by 12 percent, from 67 percent of the average wage in the 1950s cohorts to 59 percent of the average wage in 1970s cohorts. This reflects a decline in projected employment rates and earnings at age 62 for 1970s cohorts compared to 1950s cohorts. Relative defined benefit pension and Social Security income continue to fall over the same time period. Social Security beneficiaries born after 1937 face larger benefit reduction factors compared to those born before 1937 for early benefit take up as the normal retirement age increases from age 65 to age 67. Income from housing assets remains steady and income from financial wealth (including both pension and non-pension assets) increases over time.[10]

[9] Readers should also bear in mind that Social Security benefits are not constrained to the level payable under current law in these analyses.

[10] We convert the stock of financial assets into income by calculating the annuity the individual or couple could purchase from 80 percent of these assets using the multivariate annuity factors described in chapter 3. MINT does not annuitize the assets. The annuity calculation allows us to compare cohorts with different shares of annuitized and non-annuitized assets. This is especially important given the growth in DC pensions over time. The reduction factor we apply in measuring income is meant to approximate an adjustment for the risk of living beyond one's life expectancy.

Table 9–9. Per Capita Income at Age 62 by Year of Birth (Ratio of Income to the Economy-Wide Average Wage)[a]

	Year of Birth				
	1930-39	**1950-59**	**1970-79**	**1990-99**	**2010-18**
All Individuals	1.02	1.15	1.05	1.13	1.10
By Source:					
Social Security Benefits	0.16	0.15	0.14	0.14	0.14
Financial Assets	0.17	0.21	0.23	0.26	0.25
Defined Benefit Income	0.12	0.07	0.05	0.04	0.04
Earned Income	0.52	0.67	0.59	0.64	0.63
Imputed Rental Income	0.05	0.05	0.05	0.05	0.05
By Gender:					
Female	0.95	1.10	0.98	1.04	1.00
Male	1.10	1.21	1.12	1.22	1.20
By Marital Status:					
Never Married	0.82	1.30	0.94	0.93	0.89
Married	1.07	1.16	1.08	1.16	1.13
Widowed	0.86	1.01	0.97	1.08	1.08
Divorced	0.94	1.13	1.06	1.17	1.14
By Race/Ethnicity:					
White, Non-Hispanic	1.09	1.29	1.21	1.32	1.31
African-American	0.75	0.81	0.83	0.91	0.91
Hispanic	0.67	0.70	0.69	0.79	0.79
By Education Level:					
High School Dropout	0.59	0.48	0.45	0.43	0.43
High School Graduate	1.00	0.97	0.82	0.87	0.85
College Graduate	1.71	1.89	1.72	1.82	1.79
By Per Capita Income Quintile:					
Bottom	0.25	0.22	0.19	0.19	0.19
Second	0.56	0.53	0.48	0.50	0.48
Third	0.87	0.90	0.79	0.85	0.82
Fourth	1.27	1.48	1.33	1.46	1.42
Top	2.52	3.13	2.94	3.17	3.10

Source: The Urban Institute projections from MINT5.

a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.

The trends by marital status generally mirror the aggregate trends. The significant increase in income of singles born in the 1950s reflects an outlier earner in that group.[11] Projected relative per capita income between the 1930s cohorts and the 2010s cohorts increases more for divorced and widowed 62-year-olds than it does for married couples. Married 62-year-olds on average still have higher per capita income than do unmarred 62-year-olds, but the gap narrows and, for those born in the 2010s, average per capita income of divorced 62-year-olds exceeds the per capita income of the 62-year-old married population. Never married 62-year-olds gain relative to married 62-year-olds between the 1930s cohorts and the 2010s cohorts, but the gain is very small.

Trends in per capita income at age 62 by race and ethnicity also mirror aggregate trends. Per capita income of non-Hispanic Whites is higher than income of African-Americans and Hispanics and the gap remains fairly constant across cohorts as income of all ethnic groups at 62 increases across cohorts.

While average relative per capita total income at age 62 fluctuates across cohorts, this fluctuation is dominated by the projections of income of college-educated 62-year-olds. Average relative per capita income of high school graduates and high school dropouts declines from the 1930s cohorts to the 2010s cohorts, with the biggest declines occurring between the 1930s and 1970s cohorts. Average per capita income of 62-year-old college graduates rises, falls, and rises again across cohorts. This fluctuation is dominated by their earnings, which continue to be a major source of income of 62-year-olds. The gap between the college-educated and less educated increases over time, but this partly reflects the declining share of those without a college education, who will represent a relatively lower part of the education distribution.

Relative per capita income at age 62 increases for those with high incomes, but it decreases for those with low incomes across cohorts. The relative projected per capita income of 62-year-old in the bottom fifth of the income distribution is 23 percent lower for those born in the 2010s than for similar earners born in the 1930s, falling from 0.25 times the average wage for the 1930s cohorts to 0.19 times the average wage for the 2010s cohort. The opposite is true at the top end of the income distribution. Relative projected per capita income of 62-year-olds in the top fifth of the income distribution is 23 percent higher for those born in the 2010s than for similar individuals born in the 1930s. The bottom three quintiles of the income distribution all see relative declines in per capita income at age 62 between the 1930s and 2010s cohorts while the top two quintiles see relative increases in per capita income.

MINT5 projects that average after tax per capita income at age 62 will rise from 85 percent of the average wage for 62-year-olds born in the 1930s to 90 percent of the average wage for those born in the 2010s, but it does not rise smoothly by cohort. MINT5 projects that average relative after tax per capita income at age 62 will rise between those born in the 1930s and those born in the 1950s and then fall for cohorts

[11] Detailed cross tabulations by cohort and income source for each gender, marital status, ethnic group, education level, and AIME quintile at age 62 are shown in Appendix Tables A9–9a to A9–9f.

born in the 1970s, before it rises again for those born in the 2010s (see Table 9–10). Total tax relative to the average wage will increase from 17 percent for 62-year-olds born in the 1930s to 21 percent for those born in the 2010s. Federal income taxes will become a larger share of total tax over time, rising from 67 percent for those born in the 1930s to 72 percent for those born in the 2010s.

Table 9–10. Average Before and After Tax Per Capita Income and Share of Total Tax by Type at Age 62 by Year of Birth (Ratio of Income to the Economy-Wide Average Wage)[a]

	Year of Birth				
	1930-39	**1950-59**	**1970-79**	**1990-99**	**2010-18**
After Tax Per Capita Income	0.85	0.93	0.86	0.92	0.90
Before Tax Per Capita Income	1.02	1.15	1.05	1.13	1.10
Total Tax	0.17	0.23	0.19	0.21	0.21
Federal Income Tax	0.11	0.16	0.13	0.15	0.15
State Income Tax	0.02	0.03	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04
Federal Income Tax/Total Tax	0.67	0.69	0.69	0.71	0.72
State Tax/Total Tax	0.14	0.12	0.10	0.09	0.08
Payroll/Total Tax	0.19	0.19	0.20	0.20	0.20

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.

The average income tax rate (total tax/total income) is projected to increase from 16 percent for 62-year-olds born in the 1930s to 20 percent for those born in the 1950s (see Table 9–11). The increase in average tax rates for those born in the 1950s is due both an increase in total per capita income and the expiration of the tax provisions enacted in the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA). Federal income taxes as a share of total taxes continue to rise for later cohorts as the non-indexing of the Social Security thresholds cause a larger share of Social Security to be taxed among later cohorts than earlier cohorts (see chapter 4 for more details). [12]

Average income tax rates are generally higher for men than for women. They are higher for married couples than for singles. They are higher for more educated than for less educated and for 62-year-olds in the higher income groups than the lower income groups. Average tax rates increase over time for 62-year-olds in the middle of the income distribution, but not for those in the top or bottom of the income distribution. This is due to the non-indexing of Social Security tax thresholds over time. Sixty-two-

[12] Detailed cross tabulations of average taxes and after tax income by cohort and income source for each gender, marital status, ethnic group, education level, and AIME quintile at age 62 are shown in Appendix Tables A9–10a to A9–10f.

year-olds in the bottom of the income distribution have little other income and do not pay income taxes on their Social Security income. Sixty-two-year-olds in the top of the income distribution have a relatively small share of their total income derived from Social Security. Even though they have more of their Social Security taxed over time, their average tax rate is dominated by the tax on non-social security income.

Table 9–11 Average Income Tax Rate at Age 62 by Year of Birth[a]

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
All Individuals	0.16	0.20	0.18	0.19	0.19
By Gender:					
Females	0.15	0.19	0.18	0.18	0.19
Males	0.17	0.19	0.19	0.19	0.19
By Marital Status:					
Never Married	0.13	0.23	0.18	0.17	0.17
Married	0.17	0.20	0.19	0.19	0.19
Widowed	0.13	0.15	0.14	0.13	0.13
Divorced	0.15	0.18	0.18	0.19	0.18
By Race/Ethnicity:					
White, Non-Hispanic	0.17	0.20	0.19	0.19	0.19
African-American	0.16	0.18	0.17	0.17	0.17
Hispanic	0.15	0.16	0.17	0.18	0.17
By Education Level:					
High School Dropout	0.11	0.13	0.13	0.15	0.15
High School Graduate	0.15	0.18	0.15	0.15	0.15
College Graduate	0.22	0.22	0.21	0.21	0.21
By Per Capita Income Quintile:					
Bottom	0.04	0.04	0.04	0.05	0.05
Second	0.07	0.09	0.08	0.09	0.09
Third	0.11	0.14	0.13	0.14	0.13
Fourth	0.14	0.19	0.17	0.17	0.17
Top	0.25	0.26	0.25	0.25	0.25

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.

VIII. INCOME AT AGE 67

Average per capita income for each cohort and most subgroups are lower at age 67 than at age 62, largely because of sharply reduced levels of earnings that are only partially offset by higher average Social Security benefits and slightly higher income from most other sources (Table 9–12). Average per capita income among 67-year-olds born in the 1930s is 88 percent of the average wage and falls to 82 percent of the average wage for those born in the 2010s. As with per capita income at age 62, the trend is not smooth. It falls to 80 percent of the average wage for those born in the 1970s, but rises again to 84 percent for those born in the 1990s. In order to insulate the income trends from the effect of changes among a few outliers, these calculations exclude the records of the five percent of the sample in each cohort that had the highest per capita income.

The decline in per capita income at age 67 between the 1930s and 1970s cohorts is largely due to a reduction in earnings among older workers. Employment rates at age 67 are projected to fall from 42 percent of 67-year-olds born in the 1930s to 34 percent of those born in the 2010s. Per capita earnings fall from 22 percent of the average wage to 18 percent of the average wage over the same period. It is unclear exactly why this is happening, and further examination of details of projections with the retirement model is needed.

The decline in per capita Social Security benefits over time seen at age 62 is not present at age 67. [13] Individuals with lower lifetime earnings are more likely to take up benefits at younger ages than higher earning individuals, making the age 62 beneficiary population comprised of relatively more lower-earners with lower average Social Security benefits than beneficiaries at older ages. MINT projects that a smaller share of workers will take up benefits at age 62 over time, but those that do (reported in Table 9-9) get lower average benefits over time. At age 67, a smaller share of beneficiaries is getting reduced benefits than at age 62. Also, more 67-year-olds get a Social Security benefits than at age 62. The combined effect of more beneficiaries and a larger share getting reduced benefits result in larger per capita Social Security benefits at age 67 compared to age 62.[14]

[13] Again, readers should bear in mind that Social Security benefits may be overstatements in later cohorts due to the system's long-term financing problems.

[14] Differences between the historic and projected employment rates are considerably smaller at younger ages.

Table 9–12. Per Capita Income at Age 67 by Year of Birth (Ratio of Income to the Economy-Wide Average Wage)[a]

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
All Individuals	0.88	0.87	0.80	0.84	0.82
By Source:					
Social Security Benefits	0.25	0.27	0.25	0.26	0.26
Financial Assets	0.21	0.25	0.27	0.30	0.28
Defined Benefit Income	0.14	0.09	0.07	0.05	0.05
Earned Income	0.22	0.20	0.17	0.18	0.18
Imputed Rental Income	0.05	0.05	0.05	0.05	0.05
By Gender:					
Female	0.82	0.83	0.76	0.79	0.76
Male	0.95	0.91	0.84	0.90	0.88
By Marital Status:					
Never Married	0.71	0.76	0.67	0.66	0.65
Married	0.91	0.90	0.83	0.89	0.86
Widowed	0.78	0.81	0.78	0.84	0.82
Divorced	0.84	0.84	0.77	0.81	0.78
By Race/Ethnicity:					
White, Non-Hispanic	0.94	0.97	0.91	0.98	0.96
African-American	0.62	0.60	0.64	0.67	0.66
Hispanic	0.57	0.51	0.53	0.57	0.59
By Education Level:					
High School Dropout	0.51	0.38	0.34	0.31	0.32
High School Graduate	0.85	0.75	0.65	0.68	0.66
College Graduate	1.48	1.36	1.24	1.29	1.26
By Per Capita Income Quintile:					
Bottom	0.23	0.22	0.19	0.19	0.18
Second	0.49	0.44	0.39	0.39	0.39
Third	0.74	0.68	0.61	0.63	0.61
Fourth	1.09	1.10	1.00	1.07	1.04
Top	2.15	2.24	2.15	2.30	2.22

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.

Men have higher per capita income than women at age 67. Men born in the 1930s have about 15 percent higher per capita income than women born in the 1930s (95 versus 82 percent of the average wage). The gap between men's and women's earnings falls to 10 percent for cohorts born in the 1950s (91 versus 83 percent of the average wage). The gap widens to 16 percent for cohort born in the 2010s. Because married couples share their spouse's resources in the per capita income measure, these differences are due to differences among unmarried 67-year-olds and differences in the ages of husbands and wives.[15]

Most of the differences among cohorts and subgroups that were observed at age 62 can also be observed at age 67. College-educated 67-year-olds have higher relative per capita income than lesser-educated 67-year-olds and the gap increases over time. College-educated 67-year-olds born in the 1930s are projected to have 2.9 times higher per capita income than high school dropouts and 1.7 times higher per capita income than high school graduates. College-educated 67-year-olds born in the 1990s are projected to have 4.1 times higher per capita income than high school dropouts and 1.9 times higher per capita income than high school graduates. Again, this increased gap partly represents changes in the shares of 67 year olds in each group; dropouts in later cohorts represent a smaller and relatively less educated segment of the population than in earlier cohorts.

Relative per capita income at age 67 increases for those with high relative per capita incomes, but it decreases for those with low relative incomes in later cohorts. The relative projected per capita income of 67-year-olds in the bottom fifth of the income distribution is 20 percent lower for those born in the 2010s than for similar 67-year-olds born in the 1930s. Relative per capita income falls from 0.23 times the average wage for the 1930s cohorts to 0.18 times the average wage for the 2010s cohort. The opposite is true at the top end of the income distribution. Relative projected per capita income of 67-year-old in the top fifth of the income distribution is 3 percent higher for those born in the 2010s than for similar 67-year-olds born in the 1930s. All but those in the top fifth of income distribution see a drop in relative per capita income at age 67 between the 1930s and 2010s cohorts.

Within cohort groups, the gap in per capita income between those in the top fifth and bottom fifth of the income distribution also increases over time. The top income group born in 1930s had 9.3 times the per capita income of the bottom fifth. This ratio is projected to increase to 12.1 for 67-year-olds born in the 2010s.

MINT5 projects that average after tax per capita income at age 67 will fall from 76 percent of the average wage for 67-year-olds born in the 1930s to 69 percent of the average wage for those born in the 2010s, but it does not rise smoothly by cohort. MINT5 projects that average relative after tax per capita income at age 67 will fall between those born in the 1930s and those born in the 1970s and then rise for cohorts born in the 1990s, before it falls again for those born in the 2010s (see Table 9–13).

[15] Detailed cross tabulations by cohort and income source for each marital status, ethnic group, and AIME quintile at age 67 are shown in Appendix Tables A9–12a through A9–12f.

Table 9–13 Average Before and After Tax Per Capita Income and Share of Total Tax by Type at Age 67 by Year of Birth

(Ratio of Income to the Economy-Wide Average Wage)[a]

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
After Tax Per Capita Income	0.76	0.71	0.67	0.71	0.69
Before Tax Per Capita Income	0.88	0.87	0.80	0.84	0.82
Total Tax	0.12	0.15	0.13	0.14	0.13
Federal Income Tax	0.09	0.12	0.10	0.11	0.11
State Income Tax	0.02	0.02	0.01	0.01	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.18	0.16	0.16	0.16
Federal Tax/Total Tax	0.75	0.81	0.82	0.82	0.83
State Tax/Total Tax	0.14	0.10	0.09	0.08	0.07
Payroll/Total Tax	0.11	0.09	0.09	0.10	0.10

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.

Total tax relative to the average wage will increase from 12 percent for 67-year-olds born in the 1930s to 15 percent for those born in the 1950s. It then fluctuates between 13 and 14 percent for those born after the 1950s. Federal income taxes will become a larger share of total tax over time, rising from 75 percent for those born in the 1930s to 83 percent for those born in the 2010s. These patterns reflect changes in employment and earnings, changes in tax policy, and the non-indexing of Social Security over time.[16]

The average income tax rate (total tax/total income) is projected to increase from 14 percent for 67-year-olds born in the 1930s to 18 percent for those born in the 1950s (see Table 9.14). Average tax rates then fall to 16 percent for 67-year-olds born after the 1950s. These trends reflect the projections of per capita income and changes in tax policy at age 67 over time.

Average tax rate patterns at age 67 follow the general patterns as at age 62. Average tax rates are generally higher for men than for women. They are higher for married couples than for singles. They are higher for more educated than for less educated and for 67-year-olds in the higher income groups than the lower income groups. Average tax rates increase over time for 67-year-olds in the middle of the income distribution, but not for those in the top or bottom of the income distribution.

[16] Detailed cross tabulations of average taxes and after tax income by cohort and income source for each gender, marital status, ethnic group, education level, and AIME quintile at age 67 are shown in Appendix Tables A9–13a to A9–13f.

Table 9–14 Average Income Tax Rate at Age 67 by Year of Birth[a]

	Year of Birth				
	1930-39	1950-59	1970-79	1990-99	2010-18
All Individuals	0.14	0.18	0.16	0.16	0.16
By Gender:					
Females	0.12	0.16	0.15	0.15	0.15
Males	0.16	0.20	0.17	0.17	0.17
By Marital Status:					
Never Married	0.13	0.14	0.11	0.11	0.11
Married	0.15	0.19	0.17	0.17	0.17
Widowed	0.11	0.18	0.14	0.15	0.15
Divorced	0.14	0.17	0.14	0.14	0.14
By Race/Ethnicity:					
White, Non-Hispanic	0.16	0.22	0.20	0.21	0.21
African-American	0.14	0.18	0.15	0.17	0.17
Hispanic	0.13	0.17	0.13	0.14	0.14
By Education Level:					
High School Dropout	0.08	0.10	0.09	0.08	0.08
High School Graduate	0.11	0.14	0.12	0.12	0.12
College Graduate	0.21	0.23	0.20	0.20	0.20
By Per Capita Income Quintile:					
Bottom	0.02	0.04	0.04	0.04	0.04
Second	0.06	0.08	0.08	0.07	0.07
Third	0.07	0.11	0.11	0.11	0.11
Fourth	0.10	0.15	0.12	0.14	0.14
Top	0.24	0.27	0.23	0.23	0.23

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.

IX. LIVING ARRANGEMENTS AND SSI BENEFITS

Living arrangements and SSI benefits at age 67 are summarized in Table 9–15. MINT5 projects that about 86 percent of individuals in all MINTEX cohorts will live independently at age 67. High school dropouts, Hispanics, and never married individuals are much less likely to live independently than other individuals, with less than 80 percent of each of these respective groups living on their own. Men are more slightly likely to live independently than are women, and among both men and women, married couples are the most likely to be independent, while never married persons are the least likely.

Table 9–15. Living Arrangements and SSI Recipiency at Age 67

	% Living Independently (All)	% Eligible for SSI	SSI Take Up Rate	Average SSI Benefit[a]	% Living Independently (SSI Recipients)
All	86	2.1	73	0.09	72
By Education Attainment					
High School Dropout	75	8.3	81	0.09	68
High School Graduate	86	1.7	65	0.08	76
College Graduate	90	0.3	67	0.12	79
By Race/Ethnicity					
White, Non-Hispanic	89	1.0	72	0.09	77
African-American	83	4.0	75	0.08	79
Hispanic	79	4.3	72	0.08	69
Other	76	3.5	78	0.12	58
By Gender/Marital Status					
Female:	84	2.6	76	0.09	71
Never Married	74	6.4	74	0.10	68
Married	87	1.5	68	0.09	73
Widowed	79	4.7	83	0.10	65
Divorced	84	2.7	81	0.09	79
Male:	87	1.6	69	0.08	73
Never Married	72	5.0	77	0.09	49
Married	89	0.9	72	0.08	83
Widowed	86	6.0	47	0.06	96
Divorced	90	1.4	69	0.10	81
Year of Birth					
1926-29	84	5.5	100	0.12	72
1930-39	85	4.6	93	0.10	70
1940-49	87	3.7	71	0.11	71
1950-59	86	3.1	69	0.10	74
1960-69	86	2.6	71	0.09	75
1970-79	86	2.2	64	0.08	72
1980-89	85	1.5	63	0.07	70
1990-99	86	1.1	71	0.06	64
2000-09	86	1.0	65	0.06	75
2010-18	86	0.8	71	0.05	74

Source: The Urban Institute projections from MINT5.
a/ Ratio of mean SSI benefit to average wage.

MINT5 projects that about 5.5 percent of the 67-year-olds born in the late 1920s were eligible for SSI. This percentage declines with successive cohort groups, because SSI program parameters are either not indexed or indexed only to changes in prices.[17] For 67-year-olds born in the 2010, only 0.8 percent will be eligible for SSI. High school dropouts and never married persons are more likely to be eligible for SSI than other groups. Hispanic and African-American individuals are also more likely to be eligible for SSI than are non-Hispanic White individuals.

Of those that are eligible for SSI at age 67, 73 percent are expected to take up their benefit. Non-Hispanic Whites have lower take up rates than African-Americans and males have lower take up rates than females.

Among those drawing benefits, average SSI benefit at age 67 is 0.09 times the average wage ($3600 in 2007 dollars), and benefits vary little among subgroups. Benefits, however, decline over time due to the combination of stable or declining real benefits and growing real wages from 0.12 times the average wage for 67-year-olds born in the late 1920s to 0.05 times the average wage for those born in the 2010s.

X. INCOME IN 2020

MINT5 tracks the annual income of people born from 1926 to 2018 from age 62 for as long as they are projected to live and reside in the United States, simulating the spend down of their accumulated assets, their changes in marital status – particularly changes resulting from the death of a spouse, changes in labor force behavior and earnings, and the cost of living adjustments in their private and public pension plans.[18] Table 9–16 presents a snapshot of the population age 62 through 89 in the year 2020.[19] Many of the patterns seen in this table were also visible in the analysis of incomes at age 62 or age 67.

Per capita income of the aged population in 2020, not including co-resident income, averages 92 percent of the average wage. About 28 percent of this income is derived from Social Security benefits. Income from assets accounts for 33 percent of income and earnings account for nearly one quarter. DB pensions and housing assets are less important, representing 10 and 6 percent of income, respectively.

[17] We use historic SSI benefit values up to year 2004. SSI state supplement growth rates vary by state and in some cases are inversely related to the federal benefit. State SSI growth rates are based on the change between the 2003 and 2004 state supplement amounts. We assume federal benefits increase by CPI.

[18] These projections include backcasted values for pensions, financial assets, and home equity for individuals older than 62 at the SIPP interview date for individuals. Social Security, SSI, and earnings are available from the administrative data.

[19] These results exclude the wealthiest five percent. Had this group been included, financial assets and earned income would account for a much larger portion of per capita income than they do in Table 9–16. Furthermore, income inequality between the top and bottom quintiles worsens. Per capita income results including the top five percent of wealth holders can be found in Appendix Table A9–16d.

Table 9–16. Per Capita Income in 2020 of Persons Aged 62-89 (Ratio of Income to the Economy-Wide Average Wage) [a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	DB Pensions	Other Financial Wealth	Earnings	Imputed Rental Income
All	100%	0.92	0.26	0.09	0.30	0.21	0.05
By Education Attainment							
High School Dropout	12	0.42	0.18	0.04	0.09	0.08	0.03
High School Graduate	61	0.81	0.26	0.08	0.26	0.16	0.05
College Graduate	27	1.39	0.30	0.15	0.49	0.37	0.08
By Race/Ethnicity							
White, Non-Hispanic	75	1.01	0.28	0.10	0.35	0.22	0.06
African-American	10	0.63	0.23	0.08	0.12	0.17	0.03
Hispanic	9	0.56	0.19	0.05	0.13	0.15	0.04
Other	6	0.76	0.18	0.07	0.23	0.22	0.05
By Gender							
Female	54	0.88	0.27	0.09	0.30	0.16	0.06
Male	46	0.97	0.25	0.10	0.31	0.26	0.05
By Marital Status							
Never Married	5	0.81	0.23	0.08	0.26	0.19	0.04
Married	61	0.95	0.25	0.09	0.31	0.25	0.05
Widowed	16	0.88	0.30	0.09	0.32	0.08	0.07
Divorced	18	0.89	0.29	0.10	0.28	0.18	0.06
By Age							
62 to 64	21	1.00	0.18	0.07	0.22	0.48	0.05
65 to 69	29	0.89	0.27	0.09	0.25	0.22	0.05
70 to 74	23	0.90	0.30	0.11	0.30	0.13	0.06
75 to 79	14	0.86	0.29	0.09	0.35	0.07	0.06
80 to 84	9	0.91	0.28	0.10	0.43	0.05	0.06
85 to 89	5	1.06	0.27	0.12	0.58	0.03	0.06
By SS Benefit Status							
OASI Recipient	85	0.92	0.29	0.10	0.32	0.15	0.06
DI Recipient	4	0.71	0.28	0.07	0.16	0.18	0.04
SSI Recipient	2	0.18	0.06	0.01	0.00	0.00	0.01
Non-beneficiary	9	1.19	0.03	0.06	0.24	0.81	0.05
By Per-Capita Income Quintile							
Bottom quintile	21	0.23	0.15	0.01	0.03	0.01	0.02
Second quintile	21	0.47	0.26	0.04	0.08	0.05	0.04
Third quintile	21	0.73	0.29	0.09	0.19	0.12	0.05
Fourth quintile	21	1.17	0.30	0.13	0.41	0.26	0.07
Top quintile	16	2.36	0.32	0.23	0.96	0.73	0.11

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.
b/ Total income does not include co-resident income. Individuals born between 1926 and 1930 are available in MINT to provide spousal income and characteristics. They are included in the table only via spousal attributes of the individuals age 62 to 89 in 2020.

Income levels and the relative importance of income sources vary widely across different subsets of the population. There are especially large differences in per capita income among groups with different educational attainment, income, and age. MINT5 projects the income of college graduates to be over three times that of high school dropouts and over 70 percent higher than high school graduates. Projected per capita income in 2020 for non-Hispanic Whites is about 60 percent higher than per capita income for African Americans and 80 percent higher than Hispanics. Married individuals are expected to have about 16 percent higher per capita income than never married individuals. Per capita income declines with age between ages 62 and 79. It then increases from age 80 to 89. The initial decline in per capita income with age largely reflects the loss of earnings at older ages as individuals leave the work force. The subsequent increase in average per capita income with age largely reflects differential mortality, with wealthy individuals living longer than those with less wealth. In particular, the very oldest individuals on average have much higher income from financial assets outside of retirement plans than people in their 60s. The dispersion in income among income groups in the 62 and over population is wide. Individuals ages 62-89 in the highest income quintile have more than 10 times the retirement income as those in the bottom income quintile.

The share of income sources varies considerably among subgroups. Social Security is a larger share of total income for individuals in lower socio-economic groups such as high school dropouts, African-Americans, and those in the bottom income quintile. Earnings represent a larger share of total income for the younger elderly than for the oldest of the old, while Social Security represents a larger share of total income for older individuals than for younger individuals in the 62 and over group. Earnings also represent a larger share of total income for individuals in the highest income quintile. DB pension income is a larger source of income for older than younger elderly, reflecting the higher DB coverage rates among workers in earlier cohorts compared to later cohorts. Older individuals also have more income from financial assets than those in their 60s, reflecting both mortality bias (poorer individuals are more likely to die before reaching old age) and the inheritance of assets by old age survivors.

MINT projects that average net per capita income in 2020 among 62- to 89-year-olds will be 78 percent of the average wage. They will pay on 14 percent of the average wage in taxes for an average total tax rate of 15 percent. Tax rates are higher for the younger aged than for the older aged, largely reflecting the higher earnings among the younger group. While the total per capita income rises after age 79, average tax rates continue to fall. This happens largely because the sources of income shift away from earnings at older ages. Workers must pay income tax and payroll tax. Non-workers pay only the income tax.[20]

[20] Detailed cross tabulations of average taxes and after tax income by cohort and income source for each gender, marital status, ethnic group, education level, and per capita income quintile in 2020 are shown in Appendix Tables A9–16c (exclude outliers) to A9–16e (include outliers).

Table 9–17. Average Before and After Tax Per Capita Income and Taxes Paid by Type in 2020 of Persons Aged 62-89

(Ratio of Income to the Economy-Wide Average Wage) [a]

	Total Income[b]	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
All	0.92	0.78	0.11	0.02	0.01	0.14	0.15
By Age							
62 to 64	1.00	0.83	0.12	0.02	0.03	0.17	0.17
65 to 69	0.89	0.73	0.13	0.02	0.02	0.16	0.18
70 to 74	0.90	0.77	0.11	0.01	0.01	0.13	0.14
75 to 79	0.86	0.76	0.09	0.01	0.01	0.10	0.12
80 to 84	0.91	0.82	0.08	0.01	0.00	0.09	0.10
85 to 89	1.06	0.97	0.08	0.01	0.00	0.09	0.08

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.
b/ Total and not income do not include co-resident income.

XI. CO-RESIDENT INCOME

Non-spouse co-resident family members are often an important source of income for older individuals. MINT5 projects that 14.5 percent of 62- to 89-year-olds will co-reside in 2020 (see Table 9–18). The percentage of individuals who co-reside varies little among age groups. At later ages, one might expect to see a greater increase in the fraction of individuals who co-reside, resulting from a greater need for assistance due to poor health and declining financial circumstances later on in life. This does not occur, however. Nevertheless, older individuals' greater reliance on others for assistance as they age does becomes evident upon examination of the income of co-resident family members, which rises from 76 percent of the average wage for 62- to 64-olds to 98 percent of the average wage for 85- to 89-year olds.

Individuals in the bottom per capita income quintile are more likely to co-reside than those in the top per capita income quintile (21 percent versus 10 percent) and, on average, the income of the co-resident members is higher among low-income individuals who co-reside than among high income individuals who co-reside. This reflects both the need of the co-resider and the ability of the co-resident family to support the aged individual. Using the poverty threshold to adjust income for family size, the income of co-resident family members improves the economic position of those in the lower income quintiles, but reduces slightly the economic position of the highest income group. Co-resident income among those in the bottom per capita income quintile raises family income relative to poverty from 1.1 to 3.1 while co-resident income reduces family income relative to poverty from 14.4 to 12.5 for those in the top per capita income quintile. It is important to consider, however, that co-residence is not always based on need. In many cases co-residence is the family social norm.

Table 9–18. Income of Co-resident Family Members in 2020 of Co-residing Individuals[a]

	Percent Co-residing	Income of Co-resident Family Members[b]	Family Income/Poverty (Exclude Co-resident Income)	Family Income/Poverty (Include Co-resident Income)
All	14.5	0.81	4.6	5.5
By Education Attainment				
High School Dropout	23.9	0.96	2.2	3.8
High School Graduate	13.8	0.79	4.2	5.3
College Graduate	11.8	0.73	7.8	7.6
By Race/Ethnicity				
White, Non-Hispanic	11.6	0.70	5.5	6.2
African-American	20.9	0.81	3.0	4.4
Hispanic	22.4	0.98	2.7	4.1
Other	28.8	1.18	4.0	4.8
Per Capita Income Quintile				
Bottom quintile	21.4	0.92	1.1	3.1
Second quintile	14.7	0.80	2.7	4.1
Third quintile	13.7	0.76	4.3	5.2
Fourth quintile	11.3	0.75	7.2	7.3
Top quintile	10.3	0.72	14.4	12.5
By Age				
62 to 64	16.1	0.76	5.0	5.5
65 to 69	14.1	0.77	4.5	5.4
70 to 74	14.0	0.81	4.3	5.3
75 to 79	13.9	0.86	4.2	5.4
80 to 84	14.1	0.93	4.4	5.7
85 to 89	14.8	0.98	5.7	6.7

Source: The Urban Institute projections from MINT5.
a/ Includes all co-residing individuals including the top 5 percent of wealth holders.
b/ Total income of co-resident family members other than a spouse divided by the average wage.

Including co-resident income in the measure of well-being increases family income divided by poverty for all racial groups. Co-resident income increases family for high school dropouts and high school graduates. Co-resident income increased the well-being more African-American and Hispanics compared to non-Hispanic Whites, for lower-educated individuals compared to higher-educated individuals, and for older individuals compared to younger individuals.[21]

[21] Appendix Table A9–18a shows average family income as a percent of poverty in 2020 by age and individual characteristic. Appendix Table A9–18b shows how much each subgroup contributes to poverty in 2020. Appendix Table A9–18c shows the poverty rate in 2020 by age and characteristic. Appendix Table A9–18d compares the projected poverty in 2020 with historic values in the 1990s

XII. INCOME IN 2060

Per capita total income of the aged population in 2060, not including co-resident income average, averages 91 percent of the average wage (see Table 9–19). About 27 percent of this income is derived from Social Security benefits, income from assets account for 42 percent, while earnings accounts for about 19 percent of total income. DB pensions and the rental value of housing assets were about the same size and of less importance, together comprising another 11 percent of per capita income. The relative average per capita income in 2020 and 2060 are very similar (92 versus 91 percent of the average wage respectively), but the share by income source changes. The share of total income from DB pensions and earnings are lower in 2060 than in 2020 and financial asset income, which includes income from DC account balances, is higher. (Individuals with financial asset income in the top 5th percentile are excluded from the table to mitigate the effect of outliers on mean statistics).

The population in 2060 is more racially and ethnically diverse and older than the population in 2020. The share of the population with a college degree increases between 2020 and 2060 as the lesser-educated immigrants become a smaller share of the aged population. The 2060 population is also more likely to never have been married. These changes in population characteristics solely reflect the re-weighting of the population that occurs in the cloning procedure.[22]

MINT projects that average net per capita income in 2060 among 62- to 89-year-olds will be 78 percent of the average wage (see Table 9–20). They will pay on 13 percent of the average wage in taxes for an average total tax rate of 15 percent. Tax rates are higher for the younger aged than for the older aged largely, reflecting the higher earnings among the younger group. While the total per capita income rises after age 79, average tax rates continue to fall. This happens largely because the sources of income shift away from earnings at older ages. Workers must pay income tax and payroll tax. Nonworkers pay only the income tax.[23] Net income relative to the average wage is higher for 62- to 64-year olds in 2060 than in 2020, but they are lower at ages 85 to 89.

[22] Appendix Tables A9–19a through A9–19e show more detailed income breakdowns by age and cohort. Tables A9–19a, A9–19c, A9–19d, and A9–19c include all wealth holders. Table A9–19b excludes the top five percent of wealth holders to eliminate outliers.

[23] Detailed cross tabulations of average taxes and after tax income by cohort and income source for each gender, marital status, ethnic group, education level, and per capita income quintile in 2060 are shown in Appendix Tables A9–20a to A9–20b.

Table 9–19. Per Capita Income in 2060 of Persons Aged 62-89 (Ratio of Income to the Economy-Wide Average Wage) [a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	DB Pensions	Other Financial Wealth	Earnings	Imputed Rental Income
All	100	0.91	0.25	0.06	0.39	0.17	0.05
By Education Attainment							
High School Dropout	11	0.34	0.15	0.02	0.09	0.06	0.02
High School Graduate	53	0.72	0.24	0.04	0.28	0.12	0.03
College Graduate	36	1.37	0.29	0.09	0.63	0.27	0.08
By Race/Ethnicity							
White, Non-Hispanic	57	1.07	0.27	0.07	0.48	0.19	0.06
African-American	12	0.67	0.23	0.04	0.20	0.16	0.04
Hispanic	21	0.61	0.21	0.03	0.22	0.13	0.03
Other	10	0.91	0.23	0.04	0.39	0.20	0.05
By Gender							
Female	54	0.86	0.25	0.05	0.38	0.14	0.05
Male	46	0.96	0.25	0.06	0.40	0.21	0.05
By Marital Status							
Never Married	11	0.72	0.24	0.04	0.28	0.13	0.04
Married	55	0.94	0.24	0.06	0.39	0.21	0.04
Widowed	14	0.90	0.29	0.06	0.41	0.07	0.08
Divorced	20	0.92	0.27	0.05	0.40	0.15	0.05
By Age							
62 to 64	15	1.08	0.16	0.05	0.28	0.54	0.05
65 to 69	24	0.85	0.25	0.05	0.30	0.20	0.05
70 to 74	22	0.84	0.28	0.06	0.36	0.10	0.05
75 to 79	18	0.88	0.28	0.06	0.43	0.07	0.05
80 to 84	13	0.95	0.27	0.06	0.53	0.04	0.05
85 to 89	8	0.97	0.26	0.06	0.59	0.02	0.05
By SS Benefit Status							
OASI Recipient	88	0.90	0.27	0.06	0.41	0.11	0.05
DI Recipient	3	0.61	0.27	0.03	0.15	0.13	0.03
SSI Recipient	1	0.11	0.04	0.00	0.00	0.00	0.01
Non-beneficiary	8	1.20	0.03	0.04	0.29	0.81	0.05
By Per-Capita Income Quintile							
Bottom quintile	21	0.20	0.14	0.01	0.03	0.01	0.01
Second quintile	21	0.41	0.24	0.02	0.10	0.03	0.03
Third quintile	21	0.67	0.27	0.04	0.22	0.10	0.04
Fourth quintile	21	1.15	0.30	0.08	0.49	0.22	0.06
Top quintile	16	2.52	0.32	0.16	1.32	0.61	0.11

Source: The Urban Institute projections from MINT5.

a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.

b/ Total income does not include co-resident income.

Table 9–20. Average Before and After Tax Per Capita Income and Taxes Paid by Type in 2060 of Persons Aged 62-89

(Ratio of Income to the Economy-Wide Average Wage) [a]

	Total Income[b]	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
All	0.91	0.78	0.11	0.01	0.01	0.13	0.15
By Age							
62 to 64	1.08	0.89	0.14	0.02	0.04	0.19	0.18
65 to 69	0.85	0.70	0.12	0.01	0.01	0.15	0.18
70 to 74	0.84	0.71	0.11	0.01	0.01	0.13	0.15
75 to 79	0.88	0.76	0.10	0.01	0.01	0.12	0.13
80 to 84	0.95	0.85	0.09	0.01	0.00	0.10	0.10
85 to 89	0.97	0.88	0.09	0.01	0.00	0.10	0.10

Source: The Urban Institute projections from MINT5.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.
b/ Total income does not include co-resident income.

XIII. POVERTY

Table 9–21 shows the demographic characteristics of the population ages 62 to 89 and the average per capita income (relative to the average wage) and percent of the population in poverty for each subgroup in the early 1990s, 2020, and 2060. Because wages are growing faster than prices in the OCACT projections, a stable ratio of income to wages means that income is rising over time relative to the price-adjusted poverty threshold, which lowers poverty rates. MINT5 assumes a 1.1 percent annual real wage growth, consistent with the 2006 OCACT economic assumptions.[24]

The average per capita income between 2020 and 2060 within subgroup are very similar. This comparison highlights the limitations of the cloning method to project any substantial change in income within subgroup. While per capita incomes are similar, the poverty rates are very different. Poverty rates among 62- to 89-year-olds are projected to decline from 7.8 percent in the early 1990s to 4.5 percent in 2020 and 2.6 percent in 2060. The erosion of the poverty thresholds relative to wage growth mean that fewer aged individuals will be in poverty by 2060 than in earlier years.

[24] The differences in the 2006 and 2007 OCACT short-term economic assumptions are small and offsetting, and the long-term economic assumptions: 2.8 percent price growth and 1.1 percent real wage growth. There is almost no difference in cumulative real wage growth between the OCACT assumptions.

Table 9–21. Population Characteristics, Average Per Capita Income, and Poverty Rates by Selected Characteristics: 1990s, 2020, 2060

	Year								
	1990s			2020			2060		
	Percent of Retirees	Per Capita Income	Percent In Poverty	Percent of Retirees	Per Capita Income	Percent In Poverty	Percent of Retirees	Per Capita Income	Percent In Poverty
Total	100%	0.87	7.8%	100%	0.92	4.5%	100%	0.91	2.6%
Educational Attainment									
High School Dropout	39.8	0.68	14.4	11.5	0.34	15.7	10.7	0.34	10.4
High School Graduate	47.5	0.91	3.9	59.6	0.72	3.9	51.0	0.72	2.3
College Graduate	12.7	1.33	2.1	28.9	1.37	1.3	38.3	1.37	1.0
Race									
White, non-Hispanic	85.5	0.89	5.7	76.1	1.07	2.7	58.0	1.07	1.2
African-American	7.6	0.68	23.5	9.1	0.67	9.8	11.6	0.67	4.2
Hispanic	4.7	0.72	19.4	9.0	0.61	10.8	20.1	0.61	4.9
Asian/Native American	2.2	1.09	11.9	5.8	0.91	9.2	10.3	0.91	4.8
Gender									
Female	57.5	0.86	10.3	54.1	0.86	5.1	53.4	0.86	2.9
Male	42.5	0.89	4.3	45.9	0.97	3.8	46.6	0.97	2.4
Marital Status									
Never Married	4.6	0.93	17.0	5.4	0.72	12.7	10.6	0.72	6.9
Married	59.2	0.82	2.5	60.6	0.95	2.7	55.2	0.95	1.8
Widowed	29.2	0.95	14.4	16.1	0.91	5.6	14.0	0.91	3.2
Divorced	7.0	0.90	20.2	17.8	0.92	7.1	20.1	0.92	2.2
Age									
62 to 64	16.1	1.01	6.1	20.5	1.00	5.6	15.2	1.07	3.6
65 to 69	27.9	0.89	6.1	29.0	0.89	4.8	24.2	0.85	3.0
70 to 74	22.9	0.83	7.5	22.8	0.90	3.8	21.7	0.84	2.5
75 to 79	16.6	0.83	9.0	14.4	0.86	4.0	17.9	0.88	2.1
80 to 84	12.1	0.80	12.4	8.7	0.91	3.9	13.0	0.95	2.3
85 to 89	4.3	0.81	10.7	4.6	1.06	3.3	8.0	0.97	2.0

Source: The Urban Institute projections from MINT5 and tabulations of the 1990-1993 SIPP.
a/ Excludes individuals whose asset income places them in the top 5 percent of their respective cohort.
b/ Total income does not include co-resident income expressed as a percent of the average wage.
c/ Poverty rate is the family income including co-resident income but excluding imputed rental income divided by the family poverty threshold. An individual is in poverty if his/her income is below the poverty threshold.

CHAPTER 9 APPENDIX TABLES

Table A9–1a. Percent of Individuals at Age 62, by Individual Characteristics and Cohort

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
By Educational Attainment										
High School Dropout	24	14	11	12	14	13	13	13	13	14
High School Graduate	57	58	60	60	53	51	51	51	51	54
College Graduate	19	28	28	28	34	37	36	36	36	32
By Race/Ethnicity										
White, Non-Hispanic	81	78	73	67	60	58	55	52	50	62
African-American	9	9	10	11	11	12	12	11	12	11
Hispanic	7	8	11	16	20	21	23	25	27	18
Other	4	5	6	7	9	10	10	12	11	9
By Gender										
Female	53	52	52	52	51	50	50	50	50	51
Male	47	48	48	48	49	50	50	50	50	49
By Marital Status										
Never Married	4	5	7	9	11	12	12	12	12	10
Married	74	71	68	65	63	63	64	64	64	66
Widowed	9	7	6	6	6	6	5	5	5	6
Divorced	12	17	19	20	19	19	19	19	19	18
By Immigration Age										
Native born	89	87	84	78	74	77	79	80	81	80
0 - 20	2	3	4	6	9	9	8	8	7	7
21 - 30	3	3	4	7	9	7	6	6	6	6
31 - 40	2	2	4	5	5	4	3	4	3	4
41 - 50	1	2	3	2	2	2	2	2	2	2
51 +	2	2	2	1	1	1	1	1	1	1

Source: The Urban Institute tabulations of MINT5.

Table A9–1b. Percent of Individuals at Age 67, by Individual Characteristics and Cohort

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
By Educational Attainment										
High School Dropout	23	14	11	12	13	12	12	13	13	13
High School Graduate	57	58	60	60	53	51	51	51	51	54
College Graduate	19	28	29	28	34	37	37	37	36	32
By Race/Ethnicity										
White, Non-Hispanic	81	78	73	67	60	58	55	52	50	62
African-American	9	9	10	10	11	12	12	11	11	11
Hispanic	7	8	11	15	19	20	22	25	26	18
Other	4	5	6	7	10	10	10	12	12	9
By Gender										
Female	53	53	52	53	51	51	51	51	51	52
Male	47	47	48	47	49	49	49	49	49	48
By Marital Status										
Never Married	4	5	7	8	11	12	11	11	11	9
Married	71	68	64	62	61	61	62	62	62	63
Widowed	13	11	10	9	8	8	8	7	7	9
Divorced	12	17	19	20	20	19	19	19	19	19
By Immigration Age										
Native born	88	86	83	78	74	76	79	79	80	80
0 - 20	2	3	4	6	9	9	8	8	7	7
21 - 30	3	3	4	7	9	7	6	6	6	6
31 - 40	2	3	4	5	5	4	4	4	3	4
41 - 50	2	2	3	2	2	2	2	2	2	2
51 +	3	3	2	2	2	2	2	2	2	2

Source: The Urban Institute tabulations of MINT5.

Table A9–2a. Percentage of Individuals Projected to be in Fair or Poor Health, by Cohort, Age, and Gender

		Year of Birth									
		1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Female	**Age**										
	50	N/A	6.3	5.8	6.5	6.4	6.5	6.9	6.8	7.1	6.6
	55	N/A	21.2	21.6	23.4	21.3	22.0	21.5	21.6	22.0	21.9
	60	27.9	25.0	25.4	26.6	25.1	24.0	24.4	24.4	25.1	25.1
	62	30.0	28.2	28.0	28.8	27.7	26.9	27.5	27.8	28.7	28.2
	67	33.0	29.5	29.1	30.3	29.8	29.9	30.7	31.2	31.5	30.5
Male											
	50	N/A	7.8	7.2	6.9	7.3	7.6	7.8	8.5	8.2	7.7
	55	N/A	15.8	17.2	17.2	19.0	18.0	18.2	18.6	18.5	17.9
	60	20.8	19.7	19.9	20.2	21.4	21.3	21.4	21.0	21.2	20.8
	62	23.1	20.9	22.1	22.8	23.4	22.5	22.5	22.4	22.0	22.6
	67	25.7	22.6	23.1	23.9	24.8	24.3	25.2	24.5	24.7	24.4

Source: The Urban Institute tabulations of MINT5.
N/A are projections not available from the MINT5 data system.

Table A9–2b. Percent of Individuals Drawing Disability Benefits at Age 62, by Cohort, Race, and Gender

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All										
DI Only	9.70	11.00	11.70	12.00	11.80	11.70	12.30	12.60	12.80	11.80
SSI Only	1.90	1.10	0.70	0.50	0.50	0.40	0.40	0.50	0.50	0.60
Concurrent DI & SSI	1.10	0.50	0.20	0.20	0.10	0.10	0.10	0.00	0.00	0.10
Female										
DI Only	6.80	9.10	10.90	11.60	10.80	10.10	10.80	10.70	11.10	10.30
SSI Only	2.60	1.50	0.90	0.60	0.40	0.30	0.40	0.40	0.50	0.70
Concurrent DI & SSI	1.30	0.60	0.20	0.10	0.10	0.10	0.10	0.10	0.10	0.50
Male										
DI Only	13.00	13.00	12.60	12.50	12.80	13.20	13.80	14.50	14.50	13.40
SSI Only	1.10	0.60	0.50	0.50	0.50	0.40	0.50	0.60	0.50	0.60
Concurrent DI & SSI	0.90	0.30	0.20	0.20	0.20	0.10	0.10	0.00	0.00	0.30
White Non-Hispanic										
DI Only	9.50	10.30	11.20	11.60	11.00	10.60	10.70	10.90	11.10	10.70
SSI Only	1.20	0.60	0.40	0.30	0.40	0.20	0.30	0.30	0.30	0.40
Concurrent DI & SSI	0.60	0.30	0.10	0.10	0.10	0.00	0.10	0.00	0.00	0.80
African-American										
DI Only	13.20	19.40	18.00	18.40	17.30	18.00	17.90	18.40	18.90	17.90
SSI Only	5.10	2.70	2.00	1.50	0.80	0.60	0.90	0.70	1.00	1.40
Concurrent DI & SSI	4.10	1.20	0.70	0.60	0.10	0.00	0.00	0.00	0.00	0.00
Hispanic										
DI Only	10.50	11.20	11.20	10.60	12.00	11.60	13.40	14.00	13.70	12.50
SSI Only	4.30	2.90	1.70	0.90	0.60	0.50	0.50	0.80	0.60	0.90
Concurrent DI & SSI	3.30	1.20	0.30	0.20	0.30	0.30	0.30	0.10	0.10	0.00
Other										
DI Only	5.00	5.10	7.30	9.20	9.10	9.80	10.90	11.40	11.30	9.80
SSI Only	5.40	2.00	0.90	0.80	0.40	0.40	0.30	0.30	0.50	0.70
Concurrent DI & SSI	0.60	0.40	0.20	0.00	0.10	0.00	0.00	0.00	0.00	0.00

Source: The Urban Institute tabulations of MINT5.

Table A9–3a. Projections of Age at Retirement, by Cohort and Gender

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Workers										
% Retired at 55	30.0	33.7	40.6	42.4	38.5	38.1	38.2	38.3	38.3	38.1
% Retired at 60	47.1	50.1	57.1	57.5	54.0	53.0	52.9	53.1	52.9	53.3
% Retired at 62	58.0	63.4	69.5	69.3	66.5	65.6	65.8	66.2	65.8	65.8
% Retired at 65	75.9	79.0	82.4	81.6	80.1	79.9	80.3	80.6	80.7	80.2
% Retired at 67	84.9	86.0	88.1	87.3	86.5	86.7	87.1	87.4	87.5	86.9
% Retired at 70	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Female										
% Retired at 55	41.6	39.5	43.6	45.0	40.5	40.9	41.2	41.6	41.3	42.0
% Retired at 60	56.4	56.2	62.4	61.8	57.4	57.7	58.0	58.3	57.9	58.7
% Retired at 62	65.0	69.1	74.9	74.1	71.0	71.5	71.8	72.4	72.1	71.7
% Retired at 65	79.6	83.9	87.2	85.5	84.0	84.7	84.8	85.3	84.9	84.6
% Retired at 67	87.0	89.6	91.4	90.2	89.1	89.9	90.2	90.7	90.5	90.0
% Retired at 70	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Male										
% Retired at 55	16.2	27.1	37.3	39.6	36.3	35.1	35.0	34.9	35.1	33.8
% Retired at 60	35.9	43.1	51.3	52.7	50.4	48.2	47.4	47.6	47.6	47.5
% Retired at 62	49.6	56.9	63.5	63.9	61.7	59.4	59.4	59.6	59.2	59.5
% Retired at 65	71.5	73.4	77.1	77.3	75.9	74.8	75.5	75.7	76.2	75.4
% Retired at 67	82.4	81.9	84.4	84.2	83.6	83.3	83.8	83.8	84.4	83.6
% Retired at 70	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: The Urban Institute tabulations of MINT5.
Note: Retirement defined as either working 20 hours per week or less or having experienced a 50% earnings drop; persons not in the labor force (for reasons other than disability) at age 50 are considered retired by 55.
Table includes all never-disabled, non-institutionalized survivors.

Table A9–3b. Projections of Age at Social Security Benefit Take-up, by Cohort and Gender

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Workers										
Takeup at ages 60-62	58.0	52.2	57.5	58.0	56.0	55.0	55.2	55.5	55.2	55.9
Takeup at age 63	6.1	9.9	10.0	9.6	9.5	9.7	9.7	9.6	9.6	9.4
Takeup at age 64	11.7	14.0	12.4	12.4	13.2	13.4	13.5	13.5	13.8	13.1
Takeup at age 65	12.7	13.4	9.8	9.8	9.8	9.9	9.9	10.0	10.2	10.4
Takeup at age 66	1.3	4.1	4.6	2.9	3.1	3.1	3.0	2.9	2.9	3.1
Takeup at age 67	1.4	2.0	2.1	3.2	3.7	4.2	4.2	4.3	4.0	3.3
Takeup at ages 68 and over	8.9	4.2	3.6	4.2	4.8	4.8	4.5	4.3	4.3	4.8
Male										
Takeup at ages 60-62	52.4	45.7	50.9	52.3	51.0	48.1	48.6	48.5	48.1	49.4
Takeup at age 63	6.4	9.9	10.3	9.0	9.6	9.6	9.4	9.3	9.2	9.3
Takeup at age 64	13.2	15.0	13.4	14.0	14.2	15.1	15.4	15.5	16.3	14.8
Takeup at age 65	15.9	16.3	11.8	12.0	11.0	11.0	11.5	11.4	12.1	12.2
Takeup at age 66	1.5	5.8	6.5	3.6	3.8	4.3	3.9	4.0	3.8	4.1
Takeup at age 67	1.5	2.8	2.8	4.4	4.8	6.0	5.9	6.2	5.6	4.6
Takeup at ages 68 and over	9.1	4.5	4.2	4.6	5.7	5.9	5.4	5.1	4.9	5.4
Female										
Takeup at ages 60-62	62.7	58.0	63.4	62.9	60.6	61.5	61.4	62.1	62.0	61.8
Takeup at age 63	5.7	9.9	9.8	10.1	9.5	9.7	10.0	9.8	10.0	9.5
Takeup at age 64	10.5	13.2	11.5	11.0	12.2	11.7	11.7	11.5	11.5	11.6
Takeup at age 65	10.0	10.9	7.9	7.9	8.7	8.7	8.4	8.6	8.4	8.7
Takeup at age 66	1.1	2.7	2.8	2.2	2.4	2.0	2.1	1.9	1.9	2.1
Takeup at age 67	1.3	1.4	1.6	2.2	2.6	2.5	2.6	2.5	2.5	2.2
Takeup at ages 68 and over	8.7	4.0	3.0	3.7	4.0	3.8	3.8	3.6	3.7	4.1

Source: The Urban Institute tabulations of MINT5.
Notes: Table includes all never-disabled individuals who take up Social Security by 2039.

Table A9–3c. Projections of Age at Social Security Benefit Take-up, by Cohort and AIME Quintile

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Bottom AIME Quintile										
Takeup at ages 60-62	63.4	65.4	69.5	66.0	64.7	65.7	66.1	66.7	66.7	66.1
Takeup at age 63	5.6	5.9	5.9	6.6	7.0	6.7	6.9	6.5	7.0	6.5
Takeup at age 64	6.6	9.6	7.8	8.0	9.6	9.8	10.0	10.1	9.9	9.1
Takeup at age 65	6.3	6.5	5.8	5.1	5.7	6.0	5.6	5.7	5.6	5.8
Takeup at age 66	1.4	1.1	1.1	1.3	0.7	0.6	0.7	0.7	0.8	0.9
Takeup at age 67	1.9	1.4	1.3	1.4	1.6	1.2	1.4	1.4	1.3	1.4
Takeup at ages 68 and over	14.8	10.1	8.5	11.6	10.6	10.0	9.3	8.9	8.7	10.1
Second AIME Quintile										
Takeup at ages 60-62	66.9	61.7	69.6	67.7	65.4	65.8	66.7	68.1	68.6	66.9
Takeup at age 63	5.1	10.6	10.4	10.7	10.0	10.4	9.7	9.5	9.2	9.6
Takeup at age 64	9.7	12.8	10.3	11.6	11.1	11.1	11.2	11.1	11.0	11.1
Takeup at age 65	9.1	9.7	5.7	6.1	6.6	5.6	5.7	5.6	5.9	6.4
Takeup at age 66	1.0	1.8	1.8	1.2	1.1	0.7	0.7	0.7	0.6	1.0
Takeup at age 67	1.2	1.2	1.1	1.3	1.2	0.8	0.9	0.8	0.8	1.0
Takeup at ages 68 and over	6.9	2.3	1.1	1.4	4.6	5.7	5.0	4.3	3.8	3.9
Third AIME Quintile										
Takeup at ages 60-62	55.6	52.6	60.4	64.1	62.7	61.7	61.4	61.6	60.9	60.5
Takeup at age 63	5.7	11.0	10.7	10.1	9.5	10.4	10.4	10.9	11.0	10.1
Takeup at age 64	14.7	15.5	12.9	11.6	12.5	13.4	13.3	12.5	13.4	13.2
Takeup at age 65	13.2	12.9	9.3	8.9	9.3	8.8	8.8	9.1	8.7	9.6
Takeup at age 66	1.2	3.4	3.0	1.9	1.7	2.3	2.3	2.3	2.1	2.2
Takeup at age 67	1.1	1.7	1.6	1.7	2.3	2.3	2.4	2.5	2.2	2.0
Takeup at ages 68 and over	8.4	2.9	2.2	1.8	2.0	1.2	1.3	1.1	1.7	2.3
Fourth AIME Quintile										
Takeup at ages 60-62	55.2	45.4	50.9	50.9	48.0	44.0	44.1	43.4	43.5	46.9
Takeup at age 63	6.7	12.3	11.5	11.2	10.9	11.0	10.9	11.2	11.3	10.9
Takeup at age 64	14.5	16.1	14.9	14.4	16.1	16.2	17.2	18.0	18.1	16.3
Takeup at age 65	14.4	16.8	12.4	12.9	11.4	12.9	13.3	13.0	13.8	13.2
Takeup at age 66	1.1	4.9	5.5	4.5	5.2	4.3	4.4	4.2	4.0	4.3
Takeup at age 67	1.4	1.9	2.3	3.8	5.9	8.5	7.3	7.4	6.6	5.3
Takeup at ages 68 and over	6.7	2.6	2.5	2.4	2.6	3.1	2.7	2.8	2.7	3.0
Top AIME Quintile										
Takeup at ages 60-62	49.0	36.1	36.9	41.0	39.0	37.8	37.7	37.5	36.3	38.7
Takeup at age 63	7.1	9.8	11.6	9.4	10.2	10.0	10.4	9.6	9.6	9.9
Takeup at age 64	13.1	16.3	16.2	16.4	16.6	16.2	15.9	15.8	16.7	16.1
Takeup at age 65	20.2	21.1	15.8	16.0	16.0	16.0	16.0	16.4	17.0	16.9
Takeup at age 66	1.7	9.6	11.5	5.5	6.5	7.7	6.8	6.8	6.8	7.1
Takeup at age 67	1.2	4.0	4.4	8.0	7.4	8.2	8.8	9.4	9.1	7.0
Takeup at ages 68 and over	7.7	3.1	3.5	3.7	4.3	4.1	4.3	4.5	4.5	4.4

Source: The Urban Institute tabulations of MINT5.
Note: Table includes all never-disabled individuals who take up Social Security by 2039.
AIME quintiles are defined separately for each cohort

Table A9–4a. Projections of Percentage of Non-Disabled Individuals, Age 62 and Over, With Positive Earnings, by Cohort and Gender

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All										
At age 62	63.3	67.2	65.8	63.2	64.8	68.1	68.1	68.1	68.0	66.3
At age 65	46.4	44.6	42.2	39.9	40.8	43.4	43.7	43.7	43.9	42.9
At age 67	34.8	31.9	29.9	27.5	27.9	29.1	28.9	29.2	29.0	29.4
At age 70	23.8	21.3	20.2	19.2	17.8	18.1	18.2	18.3	18.6	19.2
Male										
At age 62	75.0	74.2	71.1	67.0	69.5	74.0	74.4	74.4	74.7	72.6
At age 65	54.9	50.3	47.3	43.7	43.7	47.2	47.6	48.1	48.7	47.6
At age 67	42.2	36.4	33.4	30.4	31.1	33.3	33.3	33.8	34.0	33.7
At age 70	28.8	25.0	23.0	21.3	18.7	19.4	19.9	19.8	20.5	21.3
Female										
At age 62	53.4	61.0	61.0	59.8	60.5	62.5	62.1	62.1	61.7	60.5
At age 65	39.2	39.5	37.6	36.5	38.0	39.8	40.1	39.6	39.3	38.7
At age 67	28.6	27.9	26.8	25.0	24.9	25.2	24.8	24.9	24.4	25.5
At age 70	19.5	18.1	17.7	17.3	17.0	16.8	16.6	16.9	16.8	17.2
All Beneficiaries										
At age 62	52.4	51.4	49.7	49.2	51.4	54.0	53.6	53.6	53.2	51.9
At age 65	45.7	41.0	37.9	36.4	37.0	38.8	39.3	39.2	39.5	39.1
At age 67	34.5	31.0	29.0	26.8	26.8	27.8	27.6	28.0	27.7	28.4
At age 70	23.7	21.2	20.2	19.2	17.8	18.1	18.2	18.3	18.6	19.2
All Male Beneficiaries										
At age 62	64.1	56.1	51.1	49.3	53.6	57.0	57.7	57.3	57.1	55.6
At age 65	54.2	45.3	41.3	39.0	38.5	40.6	41.6	41.8	42.9	42.2
At age 67	41.9	35.0	31.9	29.2	29.3	31.2	31.4	32.0	32.1	32.1
At age 70	28.7	24.8	22.9	21.3	18.6	19.3	19.8	19.8	20.4	21.3
All Female Beneficiaries										
At age 62	44.2	48.2	48.7	49.1	49.7	51.7	50.5	50.9	50.3	49.2
At age 65	38.6	37.5	35.1	34.3	35.6	37.2	37.3	36.9	36.5	36.3
At age 67	28.3	27.4	26.4	24.7	24.4	24.6	24.2	24.2	23.6	25.0
At age 70	19.5	18.1	17.7	17.3	17.1	16.9	16.7	16.9	16.8	17.3
All Non-Beneficiaries										
At age 62	78.3	84.4	87.5	82.5	81.9	85.4	86.0	86.1	86.4	84.5
At age 65	51.5	74.9	79.2	70.0	70.0	77.2	76.9	78.6	78.9	73.6
At age 67	38.3	52.3	53.1	44.6	50.8	55.5	56.1	57.6	58.9	51.0
All Male Non-Beneficiaries										
At age 62	87.1	89.4	91.8	86.4	86.1	89.8	90.2	90.5	91.0	89.3
At age 65	60.0	83.2	85.5	76.5	75.1	81.9	81.1	82.7	83.7	79.7
At age 67	45.8	66.1	66.0	54.1	60.6	65.9	66.5	68.2	71.2	62.0
All Female Non-Beneficiaries										
At age 62	69.0	78.7	82.2	78.0	77.1	79.8	80.6	80.5	80.4	78.6
At age 65	43.8	62.8	68.8	61.2	62.5	68.5	69.8	71.0	71.0	64.2
At age 67	31.7	38.5	37.0	34.2	37.7	39.9	42.1	43.1	43.4	37.7

Source: The Urban Institute tabulations of MINT5.
Note: The 1970 cohort turns age 70 in 2040 and are considered nonworkers at age 70.

Table A9–4b. Percentage of Retirees with Positive Earnings Before Age of Benefit Entitlement, by Cohort and Gender

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All										
At age 54 and 55	25.8	37.5	61.3	60.5	60.3	63.3	63.6	63.6	63.8	60.4
At age 56 and 57	29.4	43.1	57.9	57.0	58.7	60.8	61.1	61.0	60.5	57.7
At age 58 and 59	31.7	47.2	51.9	51.2	51.9	53.8	54.1	54.5	54.6	51.7
At age 60 and 61	32.9	48.7	49.2	48.2	49.4	50.5	51.1	51.2	51.1	49.0
Male										
At age 54 and 55	32.1	44.0	64.7	64.8	65.5	69.3	70.5	70.5	71.4	66.6
At age 56 and 57	38.6	45.8	58.2	58.2	61.3	66.3	66.2	66.1	65.6	61.7
At age 58 and 59	38.9	49.2	51.9	50.2	53.0	57.2	57.8	57.9	58.0	54.1
At age 60 and 61	41.7	49.0	48.7	46.9	49.8	53.3	54.3	54.2	54.6	51.0
Female										
At age 54 and 55	32.1	44.0	64.7	64.8	65.5	69.3	70.5	70.5	71.4	66.6
At age 56 and 57	38.6	45.8	58.2	58.2	61.3	66.3	66.2	66.1	65.6	61.7
At age 58 and 59	38.9	49.2	51.9	50.2	53.0	57.2	57.8	57.9	58.0	54.1
At age 60 and 61	41.7	49.0	48.7	46.9	49.8	53.3	54.3	54.2	54.6	51.0

Source: The Urban Institute tabulations of MINT5.
Note: Retirees are never-disabled individuals with positive earnings at age 50 or older.

Table A9–4c. Percent of Individuals Age 62 with Positive Earnings, by Cohort, Gender, and Social Security Receipt

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All										
DI Beneficiaries										
Percent with Earnings	20.5	21.8	23.2	23.3	25.8	26.3	27.0	28.7	26.7	25.3
Mean Non-Zero Earnings	0.36	0.35	0.35	0.27	0.24	0.25	0.25	0.25	0.29	0.28
OASI Beneficiaries										
Percent with Earnings	52.0	50.8	49.1	48.7	50.7	53.4	52.8	52.8	52.3	51.3
Mean Non-Zero Earnings	0.49	0.57	0.55	0.52	0.49	0.50	0.50	0.49	0.48	0.51
Non-Beneficiaries										
Percent with Earnings	74.8	81.4	83.4	80.1	79.1	82.3	82.6	82.3	82.7	81.2
Mean Non-Zero Earnings	1.60	1.72	1.84	1.62	1.66	1.73	1.71	1.73	1.71	1.70
Female										
DI Beneficiaries										
Percent with Earnings	19.7	19.0	24.9	24.1	25.2	23.4	24.2	25.2	25.7	23.9
Mean Non-Zero Earnings	0.22	0.23	0.27	0.19	0.18	0.16	0.17	0.18	0.18	0.19
OASI Beneficiaries										
Percent with Earnings	44.1	47.5	48.0	48.5	48.7	50.8	49.3	49.7	49.1	48.4
Mean Non-Zero Earnings	0.39	0.49	0.50	0.47	0.43	0.44	0.45	0.45	0.43	0.45
Non-Beneficiaries										
Percent with Earnings	64.3	74.7	77.5	75.1	74.1	75.7	76.3	75.6	75.7	74.5
Mean Non-Zero Earnings	0.98	1.21	1.44	1.20	1.23	1.26	1.25	1.25	1.24	1.24
Male										
DI Beneficiaries										
Percent with Earnings	21.0	24.0	21.7	22.5	26.3	28.5	29.1	31.4	27.4	26.4
Mean Non-Zero Earnings	0.44	0.43	0.44	0.36	0.29	0.31	0.30	0.29	0.37	0.35
OASI Beneficiaries										
Percent with Earnings	63.2	55.5	50.7	49.1	53.2	56.9	57.5	57.0	56.7	55.2
Mean Non-Zero Earnings	0.60	0.66	0.62	0.58	0.57	0.57	0.55	0.55	0.54	0.58
Non-Beneficiaries										
Percent with Earnings	85.0	87.5	88.3	84.5	83.3	87.5	87.6	87.7	88.1	86.7
Mean Non-Zero Earnings	2.06	2.12	2.12	1.94	1.98	2.06	2.04	2.06	2.03	2.04

Source: The Urban Institute tabulations of MINT5.

Table A9–5a. Percentage of Individuals Covered by a Pension Plan at Age 62, by Cohort and Gender

Year of Birth and Gender	Any Coverage	DB, DC, or CB Coverage	DB Coverage	DC Coverage	IRA	IRA Coverage	Keogh Coverage
1930-1939	58.4%	44.9%	42.6%	4.6%	0.1%	29.8%	1.0%
Female	49.9%	34.4%	32.3%	3.4%	0.0%	27.2%	0.6%
Male	68.0%	56.5%	54.5%	6.0%	0.1%	32.7%	1.5%
1940-1949	61.4%	50.7%	35.2%	29.4%	3.0%	25.9%	1.4%
Female	55.0%	43.2%	28.8%	25.0%	2.4%	24.5%	0.9%
Male	68.3%	58.7%	42.3%	34.1%	3.7%	27.5%	1.9%
1950-1959	59.8%	52.5%	33.2%	34.7%	2.9%	18.3%	0.9%
Female	56.0%	48.6%	30.1%	31.4%	2.6%	17.1%	0.6%
Male	63.9%	56.7%	36.5%	38.2%	3.3%	19.7%	1.3%
1960-1969	60.1%	56.2%	29.2%	44.8%	2.8%	9.6%	0.3%
Female	56.3%	52.4%	26.4%	41.2%	2.5%	9.1%	0.2%
Male	64.0%	60.2%	32.3%	48.5%	3.1%	10.2%	0.4%
1970-1979	60.1%	56.2%	30.0%	44.8%	2.8%	10.2%	0.3%
Female	56.3%	52.4%	24.8%	41.2%	2.5%	9.5%	0.2%
Male	64.0%	60.2%	35.3%	48.5%	3.1%	10.8%	0.4%
1980-1989	61.4%	56.8%	30.8%	45.6%	3.1%	12.3%	0.4%
Female	56.3%	51.4%	24.7%	40.4%	2.9%	11.5%	0.2%
Male	66.6%	62.2%	37.0%	50.7%	3.3%	13.0%	0.5%
1990-1999	61.0%	56.5%	30.9%	45.1%	3.1%	12.0%	0.4%
Female	56.2%	51.4%	25.0%	40.0%	3.0%	11.4%	0.2%
Male	65.9%	61.6%	36.9%	50.2%	3.2%	12.6%	0.5%
2000-2009	61.1%	56.8%	31.5%	45.4%	3.2%	11.6%	0.4%
Female	55.8%	51.3%	25.5%	40.0%	3.0%	10.9%	0.2%
Male	66.4%	62.3%	37.5%	50.8%	3.5%	12.3%	0.5%
2010-2018	60.7%	56.5%	31.7%	44.9%	2.9%	11.4%	0.4%
Female	55.2%	50.9%	25.6%	39.5%	2.9%	10.6%	0.2%
Male	66.1%	62.0%	37.8%	50.3%	2.9%	12.2%	0.6%
All	60.2%	54.3%	32.0%	39.4%	2.8%	14.8%	0.6%
Female	55.0%	48.8%	26.5%	34.9%	2.6%	13.9%	0.4%
Male	65.5%	60.1%	37.8%	44.1%	3.1%	15.7%	0.8%

Source: The Urban Institute projections from MINT5.

Table A9–5b. Percentage of Individuals Covered by a Pension Plan at Age 62, by Cohort and AIME Quintile

Year of Birth	AIME Quintile	Any Coverage	DB, DC,or CB Coverage	DB Coverage	DC Coverage	CB Coverage	IRA Coverage	Keogh Coverage
1930-1939								
	1	27.5%	13.4%	12.7%	1.2%	0.0%	16.7%	0.2%
	2	44.8%	30.4%	29.3%	2.3%	0.0%	23.2%	0.2%
	3	62.5%	50.3%	48.2%	4.6%	0.1%	27.3%	0.9%
	4	70.0%	59.1%	56.9%	6.0%	0.0%	30.0%	1.6%
	5	87.2%	68.3%	65.7%	9.0%	0.2%	51.6%	2.2%
1940-1949								
	1	21.4%	10.1%	6.7%	4.1%	0.4%	12.8%	0.4%
	2	45.8%	34.3%	23.0%	15.3%	2.0%	18.5%	0.6%
	3	67.8%	57.9%	39.8%	30.3%	3.0%	23.7%	1.0%
	4	81.6%	72.7%	52.4%	41.8%	4.7%	29.8%	1.2%
	5	90.5%	78.3%	54.2%	55.5%	5.0%	44.8%	3.6%
1950-1959								
	1	20.8%	14.7%	10.0%	5.8%	0.8%	7.1%	0.2%
	2	43.8%	36.7%	22.3%	19.4%	2.3%	11.3%	0.3%
	3	65.9%	58.2%	36.4%	36.1%	3.1%	16.3%	0.8%
	4	79.4%	72.7%	46.4%	49.3%	3.8%	21.2%	1.3%
	5	89.2%	80.2%	50.9%	62.9%	4.7%	35.7%	2.1%
1960-1969								
	1	21.0%	17.6%	11.1%	7.9%	0.8%	4.3%	0.0%
	2	43.0%	39.3%	21.3%	24.8%	1.7%	6.0%	0.2%
	3	60.3%	57.3%	29.9%	41.2%	3.6%	7.6%	0.3%
	4	74.4%	70.6%	37.6%	54.8%	4.0%	11.2%	0.5%
	5	86.3%	82.9%	46.3%	70.2%	4.6%	19.0%	1.0%
1970-1979								
	1	23.9%	19.6%	12.1%	9.4%	0.7%	4.9%	0.0%
	2	47.1%	42.5%	22.5%	30.0%	2.1%	7.6%	0.1%
	3	65.4%	61.5%	31.5%	48.4%	2.9%	9.6%	0.4%
	4	76.8%	74.1%	37.8%	61.3%	4.8%	11.2%	0.3%
	5	87.3%	83.5%	46.0%	75.2%	3.6%	17.6%	0.5%
1980-1989								
	1	22.3%	16.9%	10.0%	8.2%	0.5%	6.3%	0.0%
	2	48.5%	42.8%	22.7%	29.6%	2.2%	9.2%	0.1%
	3	63.4%	59.0%	30.1%	46.2%	3.0%	11.2%	0.8%
	4	84.2%	80.4%	41.9%	66.5%	6.2%	14.4%	0.3%
	5	88.9%	85.0%	49.6%	77.5%	3.6%	20.3%	0.7%
1990-1999								
	1	20.5%	15.6%	9.7%	7.2%	0.5%	5.7%	0.0%
	2	48.2%	42.3%	23.3%	28.1%	2.5%	9.2%	0.1%
	3	64.4%	60.2%	30.0%	47.7%	3.0%	10.6%	0.7%
	4	83.5%	79.6%	42.5%	64.9%	5.7%	14.4%	0.3%
	5	88.7%	84.8%	49.2%	77.5%	3.7%	20.1%	0.7%

Continued

Table A9–5b. Percentage of Individuals Covered by a Pension Plan at Age 62, by Cohort and AIME Quintile

Year of Birth	AIME Quintile	Any Coverage	DB, DC,or CB Coverage	DB Coverage	DC Coverage	CB Coverage	IRA Coverage	Keogh Coverage
2000-2009								
	1	19.5%	15.3%	9.8%	6.9%	0.5%	4.9%	0.0%
	2	48.5%	42.7%	23.7%	28.5%	2.6%	9.2%	0.1%
	3	64.7%	60.6%	30.6%	48.4%	3.1%	10.3%	0.7%
	4	83.5%	79.8%	43.6%	65.0%	6.3%	14.1%	0.4%
	5	89.3%	85.6%	49.9%	78.1%	3.7%	19.3%	0.7%
2010-2018								
	1	19.1%	15.0%	9.3%	7.1%	0.5%	4.8%	0.1%
	2	48.0%	42.3%	23.6%	28.0%	2.6%	8.8%	0.1%
	3	64.5%	60.3%	31.3%	47.8%	2.7%	10.6%	0.8%
	4	82.9%	79.3%	44.5%	63.9%	5.3%	13.8%	0.4%
	5	89.0%	85.5%	49.8%	77.9%	3.5%	19.0%	0.7%
All								
	1	21.3%	15.4%	9.9%	6.7%	0.6%	6.9%	0.1%
	2	46.5%	39.8%	23.0%	24.4%	2.1%	10.7%	0.2%
	3	64.4%	58.8%	33.1%	41.4%	2.9%	13.3%	0.7%
	4	80.3%	75.3%	43.9%	55.9%	4.8%	17.0%	0.6%
	5	88.4%	82.5%	50.3%	68.8%	3.8%	25.9%	1.3%

Source: The Urban Institute projections from MINT5.

Table A9–6a. Mean Projected Per Capita Financial Wealth, by Age and Cohort Including Outliers (Ratio of Wealth to the Economy-Wide Average Wage)[a]

	Year of Birth									
Age	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Defined Contribution Plan (DB, CB, IRA, Keogh)										
50	N/A	0.64	0.90	1.01	1.31	1.48	1.44	1.40	1.38	1.24
55	N/A	0.98	1.21	1.32	1.72	2.00	2.00	1.96	1.95	1.67
60	0.73	1.36	1.52	1.64	2.15	2.50	2.51	2.45	2.43	2.06
62	0.72	1.46	1.62	1.74	2.28	2.68	2.69	2.63	2.61	2.13
67	0.87	1.66	1.83	1.96	2.55	3.00	3.00	2.92	2.87	2.39
Non-Pension Financial Wealth at Age										
50	N/A	5.17	5.79	5.99	5.52	6.18	5.98	6.04	5.77	5.86
55	N/A	5.58	6.85	7.10	6.52	7.33	7.10	7.15	6.83	6.84
60	4.73	6.51	7.93	7.99	7.30	8.30	8.02	8.05	7.71	7.68
62	5.68	6.75	8.24	8.19	7.43	8.43	8.14	8.22	7.89	7.75
67	6.20	6.79	8.15	8.22	7.32	8.25	7.97	7.99	7.64	7.68
Total Financial Wealth (Excluding Defined Benefit Plans) at Age										
50	N/A	5.81	6.69	7.00	6.84	7.66	7.42	7.44	7.15	7.10
55	N/A	6.57	8.05	8.42	8.24	9.32	9.10	9.10	8.78	8.51
60	5.46	7.87	9.45	9.64	9.45	10.80	10.53	10.50	10.14	9.74
62	6.41	8.21	9.86	9.93	9.71	11.11	10.83	10.86	10.50	9.88
67	7.07	8.45	9.98	10.18	9.87	11.25	10.96	10.91	10.51	10.07

Source: The Urban Institute tabulations of MINT5
N/A Indicates values not included in the MINT5 projections.
a/ Table includes individuals whose financial income is in the top 5 percent of their cohort.

Table A9–6b. Mean Projected Per Capita Financial Wealth, by Age and Cohort Excluding Outliers
(Ratio of Wealth to the Economy-Wide Average Wage)[a]

	Year of Birth									
Age	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Defined Contribution Plan (DC, CB, IRA, Keogh) at Age										
50	N/A	0.56	0.79	0.86	1.14	1.28	1.25	1.22	1.21	1.08
55	N/A	0.87	1.05	1.12	1.49	1.78	1.75	1.72	1.70	1.46
60	0.64	1.19	1.30	1.36	1.83	2.19	2.20	2.15	2.12	1.79
62	0.62	1.28	1.38	1.42	1.93	2.34	2.35	2.31	2.28	1.84
67	0.75	1.45	1.54	1.60	2.13	2.59	2.57	2.51	2.45	2.03
Non-Pension Financial Wealth at Age										
50	N/A	2.05	2.04	1.84	1.96	2.17	2.05	2.00	1.92	2.00
55	N/A	2.27	2.38	2.15	2.35	2.57	2.43	2.37	2.24	2.35
60	2.52	2.62	2.72	2.44	2.61	2.91	2.73	2.66	2.50	2.65
62	2.44	2.65	2.75	2.42	2.59	2.88	2.70	2.66	2.51	2.63
67	2.51	2.57	2.64	2.30	2.44	2.72	2.54	2.47	2.33	2.50
Total Financial Wealth (Excluding Defined Benefit Plans) at Age										
50	N/A	2.61	2.82	2.70	3.10	3.45	3.30	3.22	3.13	3.08
55	N/A	3.14	3.42	3.27	3.84	4.35	4.18	4.09	3.94	3.80
60	3.15	3.81	4.02	3.79	4.44	5.10	4.93	4.81	4.63	4.44
62	3.06	3.93	4.14	3.84	4.52	5.22	5.05	4.97	4.79	4.46
67	3.26	4.01	4.19	3.89	4.56	5.31	5.11	4.98	4.78	4.53

Source: The Urban Institute tabulations of MINT5.
a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.
N/A Indicates values not included in the MINT5 projections.

Table A9–6c. Mean Projected Per Capita Housing Wealth, by Age, Cohort, and Marital Status Including Outliers (Ratio of Wealth to the Economy-Wide Average Wage)

	Year of Birth									
Age	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
ALL INDIVIDUALS										
Proportion with Positive Housing Wealth at Age										
50	N/A	77%	78%	77%	77%	76%	76%	76%	75%	76%
55	N/A	80%	81%	80%	79%	78%	78%	78%	78%	79%
60	81%	83%	83%	82%	81%	81%	80%	80%	80%	81%
62	80%	83%	83%	82%	80%	80%	80%	80%	80%	81%
67	80%	83%	83%	82%	81%	80%	80%	80%	80%	81%
Mean Housing Wealth at Age										
50	N/A	1.51	1.37	1.18	1.20	1.32	1.30	1.28	1.26	1.29
55	N/A	1.68	1.57	1.35	1.36	1.50	1.47	1.46	1.45	1.47
60	1.75	1.91	1.83	1.60	1.63	1.78	1.75	1.73	1.71	1.74
62	1.70	1.95	1.88	1.64	1.66	1.81	1.77	1.77	1.74	1.76
67	1.76	1.98	1.90	1.66	1.65	1.81	1.77	1.76	1.73	1.77
MARRIED INDIVIDUALS										
Proportion with Positive Housing Wealth at Age										
50	N/A	86%	87%	88%	89%	89%	89%	89%	88%	88%
55	N/A	89%	90%	90%	91%	91%	91%	90%	90%	90%
60	89%	90%	91%	92%	92%	92%	92%	92%	92%	92%
62	88%	90%	91%	91%	91%	92%	92%	92%	92%	91%
67	88%	90%	91%	91%	90%	91%	91%	91%	91%	91%
Mean Housing Wealth at Age										
50	N/A	1.53	1.32	1.06	1.12	1.24	1.23	1.22	1.21	1.22
55	N/A	1.69	1.49	1.21	1.27	1.40	1.38	1.36	1.34	1.39
60	1.71	1.88	1.68	1.36	1.41	1.55	1.52	1.50	1.48	1.55
62	1.67	1.91	1.72	1.38	1.42	1.55	1.52	1.52	1.49	1.56
67	1.72	1.91	1.73	1.39	1.42	1.56	1.53	1.52	1.48	1.57
SINGLE INDIVIDUALS										
Proportion with Positive Housing Wealth at Age										
50	N/A	49%	52%	52%	51%	49%	48%	48%	46%	49%
55	N/A	56%	59%	58%	55%	54%	52%	52%	52%	54%
60	57%	63%	66%	64%	60%	60%	58%	59%	58%	61%
62	56%	64%	67%	65%	61%	60%	59%	59%	59%	61%
67	62%	68%	70%	68%	65%	64%	62%	62%	62%	65%
Mean Housing Wealth at Age										
50	N/A	1.42	1.51	1.46	1.37	1.48	1.47	1.42	1.38	1.44
55	N/A	1.68	1.75	1.66	1.54	1.69	1.65	1.66	1.66	1.66
60	1.84	1.99	2.16	2.09	2.00	2.20	2.16	2.15	2.13	2.11
62	1.77	2.07	2.22	2.13	2.05	2.25	2.21	2.20	2.19	2.15
67	1.87	2.14	2.19	2.11	2.02	2.20	2.15	2.15	2.15	2.12

Source: The Urban Institute tabulations of MINT5
N/A Indicates values not included in the MINT5 projections.

Table A9–6d. Mean Projected Per Capita Housing Wealth, by Age, Cohort, and Marital Status Excluding Outliers (Ratio of Wealth to the Economy-Wide Average Wage)[a]

	Year of Birth									
Age	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
ALL INDIVIDUALS										
Proportion with Positive Housing Wealth at Age										
50	N/A	76%	77%	76%	76%	76%	75%	75%	75%	76%
55	N/A	80%	80%	79%	78%	78%	77%	77%	77%	78%
60	80%	82%	83%	82%	80%	80%	80%	80%	80%	81%
62	79%	82%	83%	81%	80%	80%	79%	79%	80%	80%
67	80%	83%	83%	82%	80%	80%	80%	80%	80%	81%
Mean Housing Wealth at Age										
50	N/A	1.40	1.24	1.06	1.08	1.20	1.18	1.16	1.14	1.17
55	N/A	1.57	1.42	1.22	1.22	1.35	1.33	1.32	1.31	1.34
60	1.65	1.78	1.66	1.42	1.47	1.63	1.60	1.58	1.55	1.58
62	1.60	1.82	1.70	1.45	1.49	1.64	1.61	1.61	1.58	1.60
67	1.67	1.84	1.72	1.47	1.48	1.64	1.61	1.60	1.57	1.61
MARRIED INDIVIDUALS										
Proportion with Positive Housing Wealth at Age										
50	N/A	0.85	0.87	0.88	0.88	0.89	0.88	0.88	0.88	0.88
55	N/A	0.88	0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.90
60	0.88	0.90	0.91	0.92	0.92	0.92	0.92	0.92	0.91	0.91
62	0.87	0.90	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.91
67	0.88	0.90	0.91	0.91	0.90	0.91	0.91	0.91	0.91	0.90
Mean Housing Wealth at Age										
50	N/A	1.44	1.22	0.97	1.02	1.14	1.12	1.12	1.11	1.12
55	N/A	1.58	1.37	1.10	1.16	1.28	1.26	1.24	1.22	1.27
60	1.63	1.76	1.54	1.22	1.30	1.43	1.40	1.38	1.36	1.42
62	1.58	1.79	1.57	1.24	1.31	1.43	1.40	1.40	1.36	1.43
67	1.62	1.78	1.58	1.25	1.31	1.44	1.41	1.39	1.36	1.45
SINGLE INDIVIDUALS										
Proportion with Positive Housing Wealth at Age										
50	N/A	47%	51%	50%	49%	47%	47%	46%	45%	48%
55	N/A	55%	58%	57%	53%	53%	51%	51%	51%	53%
60	56%	62%	65%	63%	60%	59%	58%	58%	58%	60%
62	56%	63%	66%	64%	61%	60%	58%	59%	59%	61%
67	62%	67%	69%	67%	64%	63%	62%	62%	62%	64%
Mean Housing Wealth at Age										
50	N/A	1.27	1.30	1.28	1.20	1.32	1.30	1.26	1.21	1.27
55	N/A	1.54	1.55	1.49	1.34	1.48	1.47	1.49	1.48	1.48
60	1.71	1.83	1.92	1.81	1.77	1.97	1.95	1.94	1.91	1.89
62	1.66	1.89	1.98	1.85	1.80	2.00	1.99	1.99	1.97	1.92
67	1.76	1.97	1.97	1.82	1.75	1.95	1.93	1.94	1.93	1.90

Source: The Urban Institute tabulations of MINT5.
a/ Estimates exclude individuals whose financial income is in the top 5 percent of their cohort.
N/A Indicates values not included in the MINT5 projections.

Table A9–7. Distribution of Per Capita Assets at Age 62 by Cohort
(Ratio of Wealth to the Economy-Wide Average Wage)

	Mean	20th Percentile	50th Percentile	80th Percentile	90th Percentile	95th Percentile	95th Percentile/ Mean	95th Percentile/ 80th Percentile
Year of Birth				**Per Capita DC Account Balance**				
1930-1939	0.73	0.00	0.02	1.15	2.31	3.51	4.78	3.05
1940-1949	1.36	0.00	0.20	2.14	4.08	6.20	4.58	2.90
1950-1959	1.52	0.00	0.23	2.33	4.54	7.16	4.72	3.08
1960-1969	1.64	0.00	0.23	2.48	4.91	7.82	4.76	3.15
1970-1979	2.15	0.00	0.50	3.36	6.12	9.74	4.53	2.89
1980-1989	2.50	0.00	0.78	3.98	7.17	10.66	4.26	2.68
1990-1999	2.51	0.00	0.80	3.99	7.16	10.84	4.32	2.72
2000-2009	2.45	0.00	0.76	3.95	7.01	10.71	4.37	2.71
2010-2018	2.43	0.00	0.74	3.92	6.76	10.70	4.41	2.73
				Per Capita Non-Pension Assets				
1930-1939	5.68	0.07	0.98	5.16	10.49	20.65	3.63	4.01
1940-1949	6.75	0.08	0.91	5.30	12.31	23.74	3.52	4.48
1950-1959	8.24	0.12	0.93	5.15	12.92	27.49	3.33	5.33
1960-1969	8.19	0.13	0.87	4.35	10.99	23.27	2.84	5.36
1970-1979	7.43	0.10	0.86	4.56	12.22	25.53	3.44	5.60
1980-1989	8.43	0.11	0.88	4.99	14.32	29.01	3.44	5.82
1990-1999	8.14	0.10	0.82	4.60	13.36	28.94	3.55	6.29
2000-2009	8.22	0.10	0.81	4.43	13.23	29.01	3.53	6.55
2010-2018	7.89	0.10	0.79	4.24	12.52	27.96	3.54	6.59
				Per Capita Financial Assets				
1930-1939	6.41	0.11	1.41	6.60	12.60	23.93	3.74	3.63
1940-1949	8.21	0.20	1.88	8.23	16.18	28.26	3.44	3.43
1950-1959	9.86	0.28	1.92	8.24	17.24	32.65	3.31	3.96
1960-1969	9.93	0.32	1.89	7.53	15.59	28.63	2.88	3.80
1970-1979	9.71	0.38	2.21	8.93	18.47	34.51	3.55	3.86
1980-1989	11.11	0.44	2.54	10.18	21.86	40.19	3.62	3.95
1990-1999	10.83	0.44	2.50	9.97	20.88	38.91	3.59	3.90
2000-2009	10.86	0.43	2.46	9.65	20.63	38.27	3.53	3.96
2010-2018	10.50	0.42	2.39	9.24	20.13	36.42	3.47	3.94
				Per Capita Housing Wealth				
1930-1939	1.70	0.02	1.16	2.74	3.98	5.56	3.28	2.03
1940-1949	1.95	0.14	1.18	3.00	4.67	6.62	3.39	2.21
1950-1959	1.88	0.14	0.88	2.66	4.52	6.88	3.66	2.59
1960-1969	1.64	0.09	0.70	2.14	3.83	6.24	3.81	2.92
1970-1979	1.66	0.03	0.69	2.23	3.94	6.53	3.95	2.93
1980-1989	1.81	0.04	0.75	2.38	4.53	7.24	4.00	3.04
1990-1999	1.77	0.00	0.71	2.36	4.46	6.86	3.87	2.91
2000-2009	1.77	0.01	0.70	2.35	4.45	6.89	3.90	2.93
2010-2018	1.74	0.01	0.67	2.31	4.41	6.75	3.88	2.92

Source: The Urban Institute tabulations of MINT5.

Table A9–8a. Per Capita Income by Source at Age 62, by Gender and Cohort (Income as a Percentage of the Economy-Wide Average Wage)

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Social Security Benefits	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Financial Income	0.17	0.21	0.21	0.20	0.23	0.27	0.26	0.26	0.25	0.23
DB Pension Income	0.12	0.09	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.52	0.67	0.67	0.57	0.59	0.65	0.64	0.63	0.63	0.62
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Male										
Total Income	1.10	1.27	1.21	1.09	1.12	1.25	1.22	1.21	1.20	1.19
Social Security Benefits	0.13	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Own Benefit	0.11	0.10	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Spouse Benefit	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Financial Income	0.17	0.22	0.22	0.21	0.24	0.28	0.27	0.27	0.26	0.24
DB Pension Income	0.13	0.09	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.63	0.79	0.74	0.66	0.67	0.75	0.74	0.74	0.73	0.72
Own Earnings	0.46	0.57	0.54	0.47	0.51	0.59	0.58	0.58	0.58	0.55
Spouse Earnings	0.17	0.22	0.20	0.19	0.16	0.16	0.16	0.16	0.16	0.17
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05
Female										
Total Income	0.95	1.07	1.10	0.93	0.98	1.06	1.04	1.02	1.00	1.02
Social Security Benefits	0.18	0.16	0.17	0.16	0.15	0.15	0.15	0.15	0.15	0.16
Own Benefit	0.10	0.09	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Spouse Benefit	0.08	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.06	0.06
Financial Income	0.16	0.20	0.21	0.18	0.22	0.25	0.25	0.25	0.24	0.22
DB Pension Income	0.12	0.09	0.08	0.06	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.43	0.56	0.60	0.48	0.51	0.55	0.54	0.53	0.53	0.53
Own Earnings	0.24	0.34	0.38	0.30	0.33	0.34	0.34	0.33	0.32	0.33
Spouse Earnings	0.19	0.22	0.22	0.18	0.18	0.21	0.21	0.20	0.20	0.20
Imputed Rental Income	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Source: The Urban Institute tabulations of MINT5.

Note: To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–8b. Per Capita Income by Source at Age 62, by Marital Status and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Social Security Benefits	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Financial Income	0.17	0.21	0.21	0.20	0.23	0.27	0.26	0.26	0.25	0.23
DB Pension Income	0.12	0.09	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.52	0.67	0.67	0.57	0.59	0.65	0.64	0.63	0.63	0.62
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Never Married										
Total Income	0.82	1.01	1.30	1.02	0.94	0.96	0.93	0.90	0.89	0.96
Social Security Benefits	0.15	0.14	0.15	0.14	0.14	0.14	0.14	0.15	0.15	0.14
Financial Income	0.13	0.19	0.19	0.17	0.17	0.17	0.17	0.16	0.16	0.17
DB Pension Income	0.10	0.08	0.07	0.07	0.04	0.04	0.03	0.03	0.03	0.05
Earned Income	0.39	0.54	0.83	0.58	0.54	0.57	0.55	0.53	0.51	0.56
Imputed Rental Income	0.03	0.04	0.05	0.06	0.04	0.04	0.04	0.04	0.04	0.04
Married										
Total Income	1.07	1.19	1.16	1.03	1.08	1.19	1.16	1.15	1.13	1.13
Social Security Benefits	0.15	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Financial Income	0.18	0.22	0.22	0.20	0.24	0.29	0.28	0.28	0.27	0.24
DB Pension Income	0.13	0.09	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.06
Earned Income	0.56	0.69	0.68	0.60	0.61	0.68	0.67	0.66	0.66	0.65
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Widowed										
Total Income	0.86	0.95	1.01	0.87	0.97	1.12	1.08	1.05	1.08	0.99
Social Security Benefits	0.20	0.19	0.20	0.18	0.17	0.18	0.17	0.17	0.17	0.18
Financial Income	0.12	0.18	0.20	0.18	0.20	0.24	0.23	0.23	0.23	0.20
DB Pension Income	0.13	0.08	0.08	0.06	0.05	0.05	0.04	0.04	0.04	0.07
Earned Income	0.34	0.42	0.45	0.38	0.46	0.53	0.51	0.48	0.52	0.45
Imputed Rental Income	0.06	0.07	0.07	0.06	0.09	0.12	0.12	0.12	0.13	0.09
Divorced										
Total Income	0.94	1.18	1.13	0.99	1.06	1.16	1.17	1.16	1.14	1.11
Social Security Benefits	0.15	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Financial Income	0.12	0.18	0.20	0.19	0.23	0.26	0.26	0.26	0.25	0.23
DB Pension Income	0.10	0.09	0.08	0.07	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.51	0.68	0.62	0.52	0.57	0.64	0.65	0.64	0.63	0.61
Imputed Rental Income	0.05	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.06

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–8c. Per Capita Income by Source at Age 62, by Race and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Social Security Benefits	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Financial Income	0.17	0.21	0.21	0.20	0.23	0.27	0.26	0.26	0.25	0.23
DB Pension Income	0.12	0.09	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.52	0.67	0.67	0.57	0.59	0.65	0.64	0.63	0.63	0.62
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
White, Non-Hispanic										
Total Income	1.09	1.26	1.29	1.13	1.21	1.33	1.32	1.32	1.31	1.25
Social Security Benefits	0.16	0.15	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Financial Income	0.19	0.24	0.25	0.23	0.28	0.33	0.34	0.34	0.33	0.28
DB Pension Income	0.13	0.10	0.08	0.07	0.06	0.06	0.06	0.05	0.05	0.07
Earned Income	0.55	0.72	0.74	0.63	0.66	0.73	0.73	0.72	0.72	0.69
Imputed Rental Income	0.05	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.05
African-American										
Total Income	0.75	0.83	0.81	0.75	0.83	0.92	0.91	0.94	0.91	0.86
Social Security Benefits	0.15	0.15	0.15	0.14	0.14	0.15	0.14	0.15	0.15	0.15
Financial Income	0.05	0.08	0.09	0.11	0.12	0.14	0.14	0.14	0.14	0.12
DB Pension Income	0.12	0.08	0.07	0.05	0.04	0.03	0.03	0.03	0.03	0.05
Earned Income	0.40	0.49	0.47	0.41	0.49	0.55	0.55	0.57	0.55	0.51
Imputed Rental Income	0.03	0.03	0.03	0.03	0.04	0.05	0.05	0.05	0.05	0.04
Hispanic										
Total Income	0.67	0.68	0.70	0.66	0.69	0.78	0.79	0.78	0.79	0.75
Social Security Benefits	0.12	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.13	0.12
Financial Income	0.08	0.09	0.10	0.10	0.12	0.15	0.15	0.15	0.16	0.14
DB Pension Income	0.07	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03
Earned Income	0.36	0.40	0.41	0.38	0.40	0.45	0.46	0.44	0.44	0.43
Imputed Rental Income	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–8d. Per Capita Income by Source at Age 62, by Educational Attainment and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Social Security Benefits	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Financial Income	0.17	0.21	0.21	0.20	0.23	0.27	0.26	0.26	0.25	0.23
DB Pension Income	0.12	0.09	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.52	0.67	0.67	0.57	0.59	0.65	0.64	0.63	0.63	0.62
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
High School Dropout										
Total Income	0.59	0.53	0.48	0.48	0.45	0.44	0.43	0.43	0.43	0.48
Social Security Benefits	0.16	0.13	0.11	0.10	0.10	0.10	0.10	0.11	0.11	0.12
Financial Income	0.07	0.07	0.06	0.07	0.07	0.06	0.06	0.07	0.07	0.07
DB Pension Income	0.06	0.04	0.03	0.02	0.02	0.02	0.01	0.02	0.02	0.03
Earned Income	0.27	0.26	0.25	0.26	0.25	0.24	0.23	0.22	0.21	0.24
Imputed Rental Income	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
High School Graduate										
Total Income	1.00	1.01	0.97	0.82	0.82	0.88	0.87	0.86	0.85	0.89
Social Security Benefits	0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.14	0.15	0.15
Financial Income	0.17	0.18	0.18	0.16	0.18	0.20	0.20	0.20	0.19	0.18
DB Pension Income	0.13	0.08	0.06	0.05	0.04	0.04	0.03	0.03	0.03	0.05
Earned Income	0.48	0.53	0.53	0.43	0.42	0.46	0.45	0.45	0.44	0.46
Imputed Rental Income	0.05	0.05	0.04	0.04	0.03	0.04	0.04	0.04	0.03	0.04
College Graduate										
Total Income	1.71	1.88	1.89	1.73	1.72	1.85	1.82	1.79	1.79	1.80
Social Security Benefits	0.12	0.12	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Financial Income	0.29	0.35	0.37	0.35	0.40	0.45	0.44	0.42	0.41	0.40
DB Pension Income	0.21	0.13	0.12	0.10	0.09	0.08	0.07	0.07	0.07	0.09
Earned Income	1.02	1.20	1.18	1.06	1.02	1.10	1.09	1.08	1.09	1.09
Imputed Rental Income	0.07	0.08	0.08	0.07	0.07	0.08	0.08	0.08	0.08	0.08

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–8e. Per Capita Income by Source at Age 62, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Social Security Benefits	0.16	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Financial Income	0.17	0.21	0.21	0.20	0.23	0.27	0.26	0.26	0.25	0.23
DB Pension Income	0.12	0.09	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.06
Earned Income	0.52	0.67	0.67	0.57	0.59	0.65	0.64	0.63	0.63	0.62
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Bottom Quintile										
Total Income	0.25	0.25	0.22	0.19	0.19	0.20	0.19	0.19	0.19	0.20
Social Security Benefits	0.13	0.13	0.12	0.10	0.10	0.11	0.11	0.11	0.11	0.11
Financial Income	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
DB Pension Income	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Earned Income	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Imputed Rental Income	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.02
Quintile 2										
Total Income	0.56	0.59	0.53	0.46	0.48	0.52	0.50	0.49	0.48	0.51
Social Security Benefits	0.20	0.19	0.19	0.17	0.18	0.18	0.18	0.18	0.18	0.18
Financial Income	0.07	0.09	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.09
DB Pension Income	0.07	0.06	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Earned Income	0.19	0.22	0.19	0.15	0.15	0.18	0.17	0.16	0.16	0.17
Imputed Rental Income	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Quintile 3										
Total Income	0.87	0.97	0.90	0.78	0.79	0.87	0.85	0.84	0.82	0.85
Social Security Benefits	0.18	0.17	0.17	0.16	0.16	0.15	0.16	0.16	0.16	0.16
Financial Income	0.14	0.17	0.16	0.15	0.16	0.18	0.18	0.17	0.17	0.17
DB Pension Income	0.13	0.09	0.06	0.05	0.04	0.03	0.03	0.03	0.03	0.05
Earned Income	0.37	0.49	0.45	0.39	0.40	0.46	0.45	0.43	0.42	0.43
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Quintile 4										
Total Income	1.27	1.52	1.48	1.29	1.33	1.50	1.46	1.44	1.42	1.41
Social Security Benefits	0.16	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.15	0.15
Financial Income	0.25	0.30	0.30	0.28	0.32	0.39	0.38	0.37	0.35	0.33
DB Pension Income	0.18	0.12	0.10	0.08	0.07	0.08	0.07	0.06	0.06	0.09
Earned Income	0.63	0.89	0.87	0.74	0.74	0.84	0.82	0.81	0.80	0.79
Imputed Rental Income	0.06	0.07	0.06	0.05	0.06	0.07	0.06	0.06	0.06	0.06
Top Quintile										
Total Income	2.52	2.91	3.13	2.75	2.94	3.21	3.17	3.14	3.10	3.00
Social Security Benefits	0.11	0.09	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.09
Financial Income	0.42	0.52	0.58	0.52	0.65	0.77	0.74	0.72	0.70	0.64
DB Pension Income	0.25	0.18	0.18	0.17	0.14	0.13	0.11	0.11	0.11	0.15
Earned Income	1.66	2.02	2.16	1.86	1.96	2.12	2.12	2.11	2.10	2.02
Imputed Rental Income	0.08	0.11	0.11	0.10	0.10	0.11	0.12	0.12	0.12	0.11

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–8f. Per Capita Income by Source at Age 62, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	1.26	1.43	1.51	1.39	1.37	1.50	1.47	1.46	1.44	1.43
Social Security Benefits	0.15	0.14	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Financial Income	0.35	0.43	0.50	0.50	0.49	0.56	0.55	0.55	0.53	0.50
DB Pension Income	0.13	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.06
Earned Income	0.58	0.71	0.72	0.63	0.63	0.69	0.68	0.67	0.67	0.67
Imputed Rental Income	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bottom Quintile										
Total Income	0.25	0.25	0.22	0.19	0.19	0.20	0.19	0.19	0.19	0.20
Social Security Benefits	0.13	0.13	0.12	0.10	0.10	0.11	0.11	0.11	0.11	0.11
Financial Income	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
DB Pension Income	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Earned Income	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Imputed Rental Income	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.02
Quintile 2										
Total Income	0.56	0.59	0.53	0.46	0.48	0.52	0.50	0.49	0.48	0.51
Social Security Benefits	0.20	0.19	0.19	0.17	0.18	0.18	0.18	0.18	0.18	0.18
Financial Income	0.07	0.09	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.09
DB Pension Income	0.07	0.06	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Earned Income	0.19	0.22	0.19	0.15	0.15	0.18	0.17	0.16	0.16	0.17
Imputed Rental Income	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Quintile 3										
Total Income	0.87	0.97	0.90	0.78	0.79	0.87	0.85	0.84	0.82	0.85
Social Security Benefits	0.18	0.17	0.17	0.16	0.16	0.15	0.16	0.16	0.16	0.16
Financial Income	0.14	0.17	0.16	0.15	0.16	0.18	0.18	0.17	0.17	0.17
DB Pension Income	0.13	0.09	0.06	0.05	0.04	0.03	0.03	0.03	0.03	0.05
Earned Income	0.37	0.49	0.45	0.39	0.40	0.46	0.45	0.43	0.42	0.43
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Quintile 4										
Total Income	1.27	1.52	1.48	1.29	1.33	1.50	1.46	1.44	1.42	1.42
Social Security Benefits	0.16	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.15
Financial Income	0.25	0.30	0.30	0.28	0.32	0.39	0.38	0.37	0.36	0.33
DB Pension Income	0.18	0.12	0.10	0.08	0.07	0.08	0.07	0.06	0.06	0.09
Earned Income	0.63	0.89	0.87	0.74	0.74	0.84	0.82	0.81	0.80	0.79
Imputed Rental Income	0.06	0.07	0.06	0.05	0.06	0.07	0.06	0.06	0.06	0.06
Top Quintile										
Total Income	3.37	3.83	4.44	4.21	4.05	4.42	4.35	4.35	4.27	4.17
Social Security Benefits	0.12	0.10	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.10
Financial Income	1.25	1.54	1.94	1.98	1.85	2.13	2.08	2.09	2.02	1.91
DB Pension Income	0.24	0.17	0.20	0.17	0.13	0.12	0.11	0.11	0.11	0.14
Earned Income	1.67	1.92	2.08	1.84	1.85	1.95	1.94	1.93	1.93	1.90
Imputed Rental Income	0.09	0.11	0.12	0.11	0.11	0.12	0.12	0.12	0.12	0.12

Source: The Urban Institute tabulations of MINT5.
Table includes all non-institutionalized survivors including top wealth holders.

Table A9–10a. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Gender and Cohort
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.85	0.97	0.93	0.82	0.86	0.94	0.92	0.91	0.90	0.90
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Total Tax	0.17	0.19	0.23	0.18	0.19	0.22	0.21	0.21	0.21	0.20
Federal Income Tax	0.11	0.12	0.16	0.13	0.13	0.15	0.15	0.15	0.15	0.14
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.16	0.17	0.20	0.18	0.18	0.19	0.19	0.19	0.19	0.18
Federal Income Tax/Total Tax	0.67	0.64	0.69	0.68	0.69	0.70	0.71	0.71	0.72	0.70
State Tax/Total Tax	0.14	0.14	0.12	0.11	0.10	0.10	0.09	0.08	0.08	0.10
Payroll/Total Tax	0.19	0.22	0.19	0.21	0.20	0.20	0.20	0.20	0.20	0.20
Males										
Net Income	0.91	1.04	0.97	0.89	0.91	1.02	0.99	0.99	0.98	0.97
Total Income	1.10	1.27	1.21	1.09	1.12	1.25	1.22	1.21	1.20	1.19
Total Tax	0.19	0.22	0.23	0.20	0.21	0.24	0.23	0.23	0.23	0.22
Federal Income Tax	0.13	0.14	0.16	0.14	0.14	0.17	0.17	0.16	0.16	0.15
State Income Tax	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.04	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05
Average Total Tax Rate	0.17	0.18	0.19	0.18	0.19	0.19	0.19	0.19	0.19	0.19
Females										
Net Income	0.80	0.90	0.89	0.76	0.80	0.86	0.85	0.84	0.82	0.83
Total Income	0.95	1.07	1.10	0.93	0.98	1.06	1.04	1.02	1.00	1.02
Total Tax	0.15	0.17	0.22	0.17	0.18	0.20	0.19	0.19	0.19	0.18
Federal Income Tax	0.10	0.11	0.15	0.12	0.12	0.14	0.14	0.14	0.14	0.13
State Income Tax	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.15	0.16	0.19	0.18	0.18	0.19	0.18	0.18	0.19	0.18

Source: The Urban Institute tabulations of MINT5.
a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort

Table A9–10b. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Marital Status and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.85	0.97	0.93	0.82	0.86	0.94	0.92	0.91	0.90	0.90
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Total Tax	0.17	0.19	0.23	0.18	0.19	0.22	0.21	0.21	0.21	0.20
Federal Income Tax	0.11	0.12	0.16	0.13	0.13	0.15	0.15	0.15	0.15	0.14
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.16	0.17	0.20	0.18	0.18	0.19	0.19	0.19	0.19	0.18
Never Married Individuals										
Net Income	0.71	0.85	0.99	0.84	0.77	0.79	0.77	0.75	0.74	0.79
Total Income	0.82	1.01	1.30	1.02	0.94	0.96	0.93	0.90	0.89	0.96
Total Tax	0.11	0.16	0.30	0.18	0.17	0.17	0.16	0.16	0.15	0.17
Federal Income Tax	0.07	0.10	0.23	0.12	0.11	0.11	0.11	0.11	0.11	0.12
State Income Tax	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.13	0.16	0.23	0.17	0.18	0.17	0.17	0.17	0.17	0.18
Married Individuals										
Net Income	0.88	0.99	0.93	0.83	0.87	0.96	0.94	0.93	0.91	0.91
Total Income	1.07	1.19	1.16	1.03	1.08	1.19	1.16	1.15	1.13	1.13
Total Tax	0.18	0.20	0.23	0.20	0.20	0.23	0.22	0.22	0.22	0.21
Federal Income Tax	0.12	0.13	0.16	0.13	0.14	0.17	0.16	0.16	0.16	0.15
State Income Tax	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.17	0.17	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Widowed Individuals										
Net Income	0.75	0.83	0.86	0.73	0.84	0.97	0.94	0.91	0.94	0.86
Total Income	0.86	0.95	1.01	0.87	0.97	1.12	1.08	1.05	1.08	0.99
Total Tax	0.11	0.12	0.15	0.14	0.13	0.15	0.14	0.14	0.14	0.14
Federal Income Tax	0.07	0.07	0.10	0.09	0.09	0.10	0.10	0.09	0.10	0.09
State Income Tax	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03
Average Total Tax Rate	0.13	0.12	0.15	0.16	0.14	0.14	0.13	0.13	0.13	0.14
Divorced Individuals										
Net Income	0.80	0.98	0.93	0.82	0.87	0.95	0.95	0.95	0.93	0.92
Total Income	0.94	1.18	1.13	0.99	1.06	1.16	1.17	1.16	1.14	1.11
Total Tax	0.14	0.20	0.21	0.17	0.19	0.21	0.22	0.21	0.21	0.20
Federal Income Tax	0.09	0.13	0.14	0.11	0.13	0.15	0.16	0.15	0.15	0.14
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.05	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04
Average Total Tax Rate	0.15	0.17	0.18	0.17	0.18	0.18	0.19	0.18	0.18	0.18

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–10c. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Race and Cohort
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.85	0.97	0.93	0.82	0.86	0.94	0.92	0.91	0.90	0.90
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Total Tax	0.17	0.19	0.23	0.18	0.19	0.22	0.21	0.21	0.21	0.20
Federal Income Tax	0.11	0.12	0.16	0.13	0.13	0.15	0.15	0.15	0.15	0.14
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.16	0.17	0.20	0.18	0.18	0.19	0.19	0.19	0.19	0.18
White, Non-Hispanics										
Net Income	0.91	1.05	1.03	0.92	0.98	1.08	1.07	1.07	1.06	1.02
Total Income	1.09	1.26	1.29	1.13	1.21	1.33	1.32	1.32	1.31	1.25
Total Tax	0.18	0.21	0.26	0.21	0.23	0.26	0.25	0.25	0.25	0.23
Federal Income Tax	0.12	0.14	0.18	0.15	0.16	0.18	0.18	0.18	0.18	0.16
State Income Tax	0.03	0.03	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.03
Payroll Tax	0.03	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05
Average Total Tax Rate	0.17	0.17	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19
African-Americans										
Net Income	0.63	0.70	0.67	0.63	0.70	0.77	0.76	0.78	0.76	0.72
Total Income	0.75	0.83	0.81	0.75	0.83	0.92	0.91	0.94	0.91	0.86
Total Tax	0.12	0.14	0.14	0.12	0.14	0.15	0.15	0.16	0.16	0.14
Federal Income Tax	0.08	0.09	0.10	0.08	0.09	0.10	0.10	0.11	0.11	0.10
State Income Tax	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Payroll Tax	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.03
Average Total Tax Rate	0.16	0.16	0.18	0.16	0.17	0.17	0.17	0.17	0.17	0.17
Hispanics										
Net Income	0.57	0.59	0.58	0.56	0.58	0.64	0.65	0.65	0.65	0.62
Total Income	0.67	0.68	0.70	0.66	0.69	0.78	0.79	0.78	0.79	0.75
Total Tax	0.10	0.10	0.11	0.10	0.12	0.14	0.14	0.14	0.14	0.13
Federal Income Tax	0.06	0.06	0.07	0.07	0.08	0.10	0.10	0.10	0.10	0.09
State Income Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Average Total Tax Rate	0.15	0.14	0.16	0.15	0.17	0.18	0.18	0.17	0.17	0.17

Source: The Urban Institute tabulations of MINT5.
a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–10d. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Educational Attainment and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.85	0.97	0.93	0.82	0.86	0.94	0.92	0.91	0.90	0.90
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Total Tax	0.17	0.19	0.23	0.18	0.19	0.22	0.21	0.21	0.21	0.20
Federal Income Tax	0.11	0.12	0.16	0.13	0.13	0.15	0.15	0.15	0.15	0.14
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.16	0.17	0.20	0.18	0.18	0.19	0.19	0.19	0.19	0.18
High School Dropouts										
Net Income	0.53	0.47	0.42	0.41	0.39	0.37	0.36	0.36	0.36	0.41
Total Income	0.59	0.53	0.48	0.48	0.45	0.44	0.43	0.43	0.43	0.48
Total Tax	0.07	0.06	0.06	0.07	0.06	0.07	0.06	0.07	0.07	0.06
Federal Income Tax	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04
State Income Tax	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Average Total Tax Rate	0.11	0.11	0.13	0.14	0.13	0.15	0.15	0.15	0.15	0.13
High School Graduates										
Net Income	0.85	0.86	0.80	0.69	0.69	0.74	0.73	0.73	0.72	0.75
Total Income	1.00	1.01	0.97	0.82	0.82	0.88	0.87	0.86	0.85	0.89
Total Tax	0.15	0.15	0.17	0.13	0.13	0.14	0.13	0.13	0.13	0.14
Federal Income Tax	0.10	0.09	0.12	0.08	0.08	0.09	0.09	0.09	0.09	0.09
State Income Tax	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Average Total Tax Rate	0.15	0.14	0.18	0.16	0.15	0.15	0.15	0.15	0.15	0.16
College Graduates										
Net Income	1.33	1.50	1.47	1.35	1.35	1.45	1.43	1.41	1.41	1.41
Total Income	1.71	1.88	1.89	1.73	1.72	1.85	1.82	1.79	1.79	1.80
Total Tax	0.38	0.38	0.42	0.38	0.37	0.40	0.39	0.38	0.38	0.39
Federal Income Tax	0.27	0.26	0.30	0.27	0.26	0.29	0.29	0.28	0.28	0.28
State Income Tax	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03	0.03	0.04
Payroll Tax	0.05	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.07	0.07
Average Total Tax Rate	0.22	0.20	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–10e. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.85	0.97	0.93	0.82	0.86	0.94	0.92	0.91	0.90	0.90
Total Income	1.02	1.16	1.15	1.01	1.05	1.15	1.13	1.12	1.10	1.10
Total Tax	0.17	0.19	0.23	0.18	0.19	0.22	0.21	0.21	0.21	0.20
Federal Income Tax	0.11	0.12	0.16	0.13	0.13	0.15	0.15	0.15	0.15	0.14
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.16	0.17	0.20	0.18	0.18	0.19	0.19	0.19	0.19	0.18
Bottom Quintile										
Net Income	0.24	0.24	0.21	0.18	0.18	0.19	0.18	0.18	0.18	0.20
Total Income	0.25	0.25	0.22	0.19	0.19	0.20	0.19	0.19	0.19	0.20
Total Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Federal Income Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
State Income Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Total Tax Rate	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.04
Quintile 2										
Net Income	0.52	0.55	0.48	0.43	0.44	0.47	0.45	0.45	0.44	0.46
Total Income	0.56	0.59	0.53	0.46	0.48	0.52	0.50	0.49	0.48	0.51
Total Tax	0.04	0.05	0.05	0.04	0.04	0.05	0.04	0.04	0.04	0.04
Federal Income Tax	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03
State Income Tax	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.07	0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.09	0.08
Quintile 3										
Net Income	0.77	0.85	0.77	0.68	0.69	0.75	0.74	0.73	0.72	0.74
Total Income	0.87	0.97	0.90	0.78	0.79	0.87	0.85	0.84	0.82	0.85
Total Tax	0.09	0.12	0.13	0.10	0.10	0.12	0.12	0.11	0.11	0.11
Federal Income Tax	0.05	0.07	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07
State Income Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.03	0.04	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03
Average Total Tax Rate	0.11	0.12	0.14	0.13	0.13	0.14	0.14	0.13	0.13	0.13
Quintile 4										
Net Income	1.09	1.28	1.20	1.07	1.11	1.25	1.22	1.20	1.18	1.18
Total Income	1.27	1.52	1.48	1.29	1.33	1.50	1.46	1.44	1.42	1.41
Total Tax	0.18	0.24	0.28	0.22	0.22	0.26	0.25	0.24	0.24	0.24
Federal Income Tax	0.11	0.15	0.18	0.14	0.15	0.17	0.17	0.16	0.16	0.16
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.04	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.06
Average Total Tax Rate	0.14	0.16	0.19	0.17	0.17	0.17	0.17	0.17	0.17	0.17

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Table A9–10e. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Top Quintile										
Net Income	1.89	2.24	2.32	2.08	2.22	2.41	2.37	2.36	2.33	2.26
Total Income	2.52	2.91	3.13	2.75	2.94	3.21	3.17	3.14	3.10	3.00
Total Tax	0.63	0.67	0.81	0.67	0.73	0.80	0.80	0.78	0.77	0.74
Federal Income Tax	0.45	0.46	0.60	0.48	0.53	0.60	0.60	0.58	0.59	0.55
State Income Tax	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.06	0.08
Payroll Tax	0.09	0.12	0.12	0.11	0.12	0.13	0.13	0.12	0.12	0.12
Average Total Tax Rate	0.25	0.23	0.26	0.24	0.25	0.25	0.25	0.25	0.25	0.25

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–10f. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Per Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	1.07	1.22	1.26	1.17	1.15	1.26	1.24	1.24	1.21	1.21
Total Income	1.26	1.43	1.51	1.39	1.37	1.50	1.47	1.46	1.44	1.43
Total Tax	0.20	0.21	0.26	0.21	0.21	0.23	0.23	0.22	0.22	0.22
Federal Income Tax	0.14	0.14	0.18	0.15	0.15	0.17	0.17	0.16	0.16	0.16
State Income Tax	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.03	0.05	0.05	0.04	0.04	0.05	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.16	0.15	0.17	0.15	0.16	0.16	0.16	0.15	0.15	0.16
Bottom Quintile										
Net Income	0.24	0.24	0.21	0.18	0.18	0.19	0.18	0.18	0.18	0.20
Total Income	0.25	0.25	0.22	0.19	0.19	0.20	0.19	0.19	0.19	0.20
Total Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Federal Income Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
State Income Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Total Tax Rate	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.04
Quintile 2										
Net Income	0.52	0.55	0.48	0.43	0.44	0.47	0.45	0.45	0.44	0.46
Total Income	0.56	0.59	0.53	0.46	0.48	0.52	0.50	0.49	0.48	0.51
Total Tax	0.04	0.05	0.05	0.04	0.04	0.05	0.04	0.04	0.04	0.04
Federal Income Tax	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03
State Income Tax	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.07	0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.09	0.08
Quintile 3										
Net Income	0.77	0.85	0.77	0.68	0.69	0.75	0.74	0.73	0.72	0.74
Total Income	0.87	0.97	0.90	0.78	0.79	0.87	0.85	0.84	0.82	0.85
Total Tax	0.09	0.12	0.13	0.10	0.10	0.12	0.12	0.11	0.11	0.11
Federal Income Tax	0.05	0.07	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07
State Income Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.03	0.04	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03
Average Total Tax Rate	0.11	0.12	0.14	0.13	0.13	0.14	0.14	0.13	0.13	0.13
Quintile 4										
Net Income	1.09	1.28	1.20	1.07	1.11	1.25	1.22	1.20	1.18	1.18
Total Income	1.27	1.52	1.48	1.29	1.33	1.50	1.46	1.44	1.42	1.42
Total Tax	0.18	0.24	0.28	0.22	0.22	0.26	0.25	0.24	0.24	0.24
Federal Income Tax	0.11	0.15	0.18	0.14	0.15	0.17	0.17	0.16	0.16	0.16
State Income Tax	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Payroll Tax	0.04	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.06
Average Total Tax Rate	0.14	0.16	0.19	0.17	0.17	0.17	0.17	0.17	0.17	0.17

Continued

Table A9–10f. Net Per Capita Income and Average Tax Rate by Tax Source at Age 62, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Top Quintile										
Net Income	2.71	3.19	3.63	3.51	3.35	3.68	3.61	3.63	3.55	3.46
Total Income	3.37	3.83	4.44	4.21	4.05	4.42	4.35	4.35	4.27	4.17
Total Tax	0.66	0.64	0.82	0.70	0.70	0.74	0.74	0.72	0.72	0.71
Federal Income Tax	0.49	0.45	0.61	0.51	0.51	0.55	0.56	0.54	0.55	0.53
State Income Tax	0.09	0.09	0.10	0.08	0.08	0.07	0.07	0.06	0.06	0.08
Payroll Tax	0.08	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Average Total Tax Rate	0.20	0.17	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17

Source: The Urban Institute tabulations of MINT5.
Notes: Table includes all non-institutionalized survivors including top wealth holders.

Table A9–12a. Per Capita Income by Source at Age 67, by Gender and Cohort
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Social Security Benefits	0.25	0.28	0.27	0.25	0.25	0.26	0.26	0.26	0.26	0.26
Financial Income	0.21	0.24	0.25	0.23	0.27	0.31	0.30	0.30	0.28	0.27
DB Pension Income	0.14	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.07
Earned Income	0.22	0.22	0.20	0.17	0.17	0.18	0.18	0.18	0.18	0.19
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Male										
Total Income	0.95	0.97	0.91	0.83	0.84	0.92	0.90	0.90	0.88	0.89
Social Security Benefits	0.25	0.27	0.27	0.25	0.25	0.26	0.26	0.26	0.25	0.25
Own benefits	0.19	0.21	0.21	0.19	0.19	0.20	0.20	0.20	0.20	0.20
Wife’s benefits	0.10	0.10	0.09	0.08	0.07	0.08	0.08	0.08	0.08	0.08
Financial Income	0.20	0.23	0.25	0.21	0.26	0.30	0.29	0.28	0.27	0.26
DB Pension Income	0.13	0.10	0.09	0.07	0.06	0.06	0.05	0.05	0.05	0.07
Earned Income	0.29	0.27	0.25	0.22	0.21	0.23	0.22	0.23	0.23	0.23
Own earnings	0.18	0.15	0.14	0.11	0.11	0.13	0.13	0.13	0.13	0.13
Wife’s earnings	0.10	0.12	0.11	0.11	0.09	0.10	0.10	0.10	0.10	0.10
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05
Female										
Total Income	0.82	0.85	0.83	0.72	0.76	0.81	0.79	0.77	0.76	0.78
Social Security Benefits	0.26	0.28	0.28	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Own benefits	0.17	0.19	0.20	0.18	0.18	0.19	0.18	0.18	0.18	0.18
Husband’s benefits	0.10	0.10	0.09	0.08	0.07	0.08	0.08	0.08	0.08	0.08
Financial Income	0.20	0.23	0.25	0.21	0.26	0.30	0.29	0.28	0.27	0.26
DB Pension Income	0.13	0.10	0.09	0.07	0.06	0.06	0.05	0.05	0.05	0.07
Earned Income	0.17	0.18	0.16	0.13	0.14	0.14	0.14	0.14	0.14	0.14
Own earnings	0.09	0.10	0.09	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Husband’s earnings	0.08	0.08	0.07	0.06	0.07	0.07	0.08	0.07	0.07	0.07
Imputed Rental Income	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Source: The Urban Institute tabulations of MINT5.
a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort. Husband’s and Wife’s benefits are the total Social Security benefit received by the respondent’s spouse regardless of benefit type.

Table A9–12b. Per Capita Income by Source at Age 67, by Marital Status and Cohort
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Social Security Benefits	0.25	0.28	0.27	0.25	0.25	0.26	0.26	0.26	0.26	0.26
Financial Income	0.21	0.24	0.25	0.23	0.27	0.31	0.30	0.30	0.28	0.27
DB Pension Income	0.14	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.07
Earned Income	0.22	0.22	0.20	0.17	0.17	0.18	0.18	0.18	0.18	0.19
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Never Married										
Total Income	0.71	0.81	0.76	0.69	0.67	0.69	0.66	0.66	0.65	0.68
Social Security Benefits	0.21	0.24	0.26	0.25	0.25	0.26	0.25	0.26	0.26	0.25
Financial Income	0.18	0.24	0.23	0.21	0.20	0.20	0.20	0.20	0.19	0.20
DB Pension Income	0.11	0.10	0.08	0.07	0.05	0.04	0.04	0.03	0.04	0.05
Earned Income	0.16	0.18	0.14	0.10	0.12	0.14	0.13	0.14	0.13	0.13
Imputed Rental Income	0.04	0.04	0.05	0.06	0.04	0.04	0.04	0.04	0.04	0.04
Married										
Total Income	0.91	0.93	0.90	0.80	0.83	0.91	0.89	0.88	0.86	0.87
Social Security Benefits	0.24	0.27	0.26	0.24	0.24	0.25	0.25	0.25	0.25	0.25
Financial Income	0.22	0.26	0.26	0.24	0.28	0.34	0.32	0.32	0.31	0.29
DB Pension Income	0.15	0.11	0.09	0.08	0.07	0.06	0.06	0.05	0.05	0.08
Earned Income	0.25	0.25	0.24	0.21	0.20	0.22	0.21	0.21	0.21	0.22
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Widowed										
Total Income	0.78	0.79	0.81	0.72	0.78	0.89	0.84	0.82	0.82	0.80
Social Security Benefits	0.30	0.31	0.31	0.29	0.29	0.30	0.29	0.28	0.29	0.30
Financial Income	0.17	0.21	0.22	0.21	0.25	0.33	0.30	0.29	0.29	0.25
DB Pension Income	0.13	0.09	0.09	0.08	0.08	0.08	0.06	0.06	0.06	0.08
Earned Income	0.12	0.11	0.11	0.09	0.08	0.09	0.08	0.08	0.08	0.09
Imputed Rental Income	0.06	0.07	0.07	0.06	0.08	0.10	0.10	0.10	0.10	0.08
Divorced										
Total Income	0.84	0.89	0.84	0.74	0.77	0.82	0.81	0.80	0.78	0.80
Social Security Benefits	0.28	0.31	0.30	0.27	0.27	0.27	0.27	0.28	0.27	0.28
Financial Income	0.17	0.22	0.24	0.22	0.26	0.30	0.29	0.28	0.27	0.26
DB Pension Income	0.12	0.11	0.09	0.07	0.06	0.05	0.05	0.05	0.05	0.07
Earned Income	0.21	0.19	0.15	0.13	0.13	0.14	0.14	0.14	0.13	0.14
Imputed Rental Income	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Source: The Urban Institute tabulations of MINT5.
a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–12c. Per Capita Income by Source at Age 67, by Race and Cohort
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Social Security Benefits	0.25	0.28	0.27	0.25	0.25	0.26	0.26	0.26	0.26	0.26
Financial Income	0.21	0.24	0.25	0.23	0.27	0.31	0.30	0.30	0.28	0.27
DB Pension Income	0.14	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.07
Earned Income	0.22	0.22	0.20	0.17	0.17	0.18	0.18	0.18	0.18	0.19
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
White, Non-Hispanic										
Total Income	0.94	0.99	0.97	0.87	0.91	1.00	0.98	0.97	0.96	0.95
Social Security Benefits	0.27	0.30	0.30	0.27	0.28	0.29	0.28	0.28	0.28	0.28
Financial Income	0.24	0.28	0.29	0.27	0.33	0.38	0.38	0.37	0.37	0.32
DB Pension Income	0.15	0.11	0.10	0.09	0.08	0.08	0.07	0.07	0.06	0.09
Earned Income	0.23	0.24	0.22	0.19	0.18	0.20	0.20	0.19	0.19	0.20
Imputed Rental Income	0.05	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.06
African-American										
Total Income	0.62	0.64	0.60	0.57	0.64	0.68	0.67	0.67	0.66	0.64
Social Security Benefits	0.22	0.25	0.24	0.24	0.23	0.24	0.24	0.25	0.24	0.24
Financial Income	0.06	0.09	0.11	0.12	0.15	0.17	0.16	0.16	0.16	0.14
DB Pension Income	0.14	0.09	0.08	0.06	0.05	0.04	0.04	0.04	0.04	0.06
Earned Income	0.17	0.17	0.15	0.12	0.17	0.19	0.18	0.18	0.17	0.17
Imputed Rental Income	0.03	0.03	0.03	0.03	0.04	0.05	0.05	0.05	0.05	0.04
Hispanic										
Total Income	0.57	0.55	0.51	0.50	0.53	0.56	0.57	0.57	0.59	0.56
Social Security Benefits	0.19	0.19	0.20	0.20	0.20	0.21	0.22	0.22	0.22	0.21
Financial Income	0.09	0.10	0.11	0.11	0.14	0.17	0.18	0.17	0.18	0.16
DB Pension Income	0.09	0.06	0.05	0.04	0.04	0.04	0.03	0.04	0.04	0.04
Earned Income	0.16	0.15	0.12	0.11	0.11	0.11	0.12	0.12	0.12	0.12
Imputed Rental Income	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03

Source: The Urban Institute tabulations of MINT5.
a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–12d. Per Capita Income by Source at Age 67, by Level of Educational Attainment and Cohort
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Social Security Benefits	0.25	0.28	0.27	0.25	0.25	0.26	0.26	0.26	0.26	0.26
Financial Income	0.21	0.24	0.25	0.23	0.27	0.31	0.30	0.30	0.28	0.27
DB Pension Income	0.14	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.07
Earned Income	0.22	0.22	0.20	0.17	0.17	0.18	0.18	0.18	0.18	0.19
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
High School Dropout										
Total Income	0.51	0.43	0.38	0.37	0.34	0.32	0.31	0.32	0.32	0.37
Social Security Benefits	0.21	0.19	0.17	0.16	0.15	0.15	0.15	0.16	0.16	0.17
Financial Income	0.09	0.08	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08
DB Pension Income	0.07	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Earned Income	0.10	0.08	0.08	0.08	0.07	0.06	0.06	0.06	0.05	0.07
Imputed Rental Income	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
High School Graduate										
Total Income	0.85	0.81	0.75	0.65	0.65	0.69	0.68	0.67	0.66	0.70
Social Security Benefits	0.27	0.28	0.27	0.25	0.25	0.25	0.25	0.25	0.25	0.26
Financial Income	0.21	0.21	0.20	0.18	0.20	0.23	0.22	0.22	0.21	0.21
DB Pension Income	0.14	0.10	0.08	0.06	0.05	0.04	0.04	0.04	0.04	0.06
Earned Income	0.18	0.17	0.15	0.13	0.12	0.13	0.13	0.13	0.13	0.14
Imputed Rental Income	0.05	0.05	0.04	0.04	0.03	0.04	0.03	0.03	0.03	0.04
College Graduate										
Total Income	1.48	1.38	1.36	1.25	1.24	1.33	1.29	1.27	1.26	1.30
Social Security Benefits	0.28	0.32	0.32	0.30	0.30	0.31	0.31	0.31	0.31	0.31
Financial Income	0.36	0.41	0.43	0.41	0.46	0.52	0.51	0.50	0.48	0.47
DB Pension Income	0.23	0.15	0.15	0.14	0.12	0.10	0.09	0.08	0.08	0.11
Earned Income	0.54	0.42	0.38	0.33	0.29	0.31	0.31	0.31	0.31	0.33
Imputed Rental Income	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08

Source: The Urban Institute tabulations of MINT5.
a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–12e. Per Capita Income by Source at Age 67, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Social Security Benefits	0.25	0.28	0.27	0.25	0.25	0.26	0.26	0.26	0.26	0.26
Financial Income	0.21	0.24	0.25	0.23	0.27	0.31	0.30	0.30	0.28	0.27
DB Pension Income	0.14	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.07
Earned Income	0.22	0.22	0.20	0.17	0.17	0.18	0.18	0.18	0.18	0.19
Imputed Rental Income	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Bottom Quintile										
Total Income	0.23	0.24	0.22	0.19	0.19	0.19	0.19	0.18	0.18	0.20
Social Security Benefits	0.14	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.14
Financial Income	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
DB Pension Income	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Earned Income	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Imputed Rental Income	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Quintile 2										
Total Income	0.49	0.49	0.44	0.38	0.39	0.40	0.39	0.39	0.39	0.41
Social Security Benefits	0.26	0.27	0.26	0.23	0.23	0.24	0.24	0.24	0.23	0.24
Financial Income	0.07	0.08	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08
DB Pension Income	0.07	0.05	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.03
Earned Income	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Imputed Rental Income	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Quintile 3										
Total Income	0.74	0.75	0.68	0.59	0.61	0.65	0.63	0.62	0.61	0.65
Social Security Benefits	0.28	0.30	0.30	0.27	0.27	0.28	0.27	0.27	0.27	0.28
Financial Income	0.15	0.17	0.16	0.15	0.17	0.19	0.18	0.18	0.18	0.17
DB Pension Income	0.14	0.10	0.08	0.05	0.04	0.04	0.03	0.03	0.03	0.06
Earned Income	0.12	0.12	0.11	0.09	0.09	0.10	0.10	0.09	0.09	0.10
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Quintile 4										
Total Income	1.09	1.16	1.10	0.96	1.00	1.10	1.07	1.06	1.04	1.06
Social Security Benefits	0.29	0.32	0.33	0.30	0.31	0.32	0.32	0.31	0.31	0.31
Financial Income	0.29	0.35	0.34	0.30	0.34	0.40	0.38	0.37	0.36	0.35
DB Pension Income	0.21	0.15	0.13	0.10	0.09	0.09	0.08	0.08	0.07	0.11
Earned Income	0.22	0.27	0.24	0.20	0.21	0.22	0.23	0.23	0.23	0.23
Imputed Rental Income	0.06	0.07	0.07	0.06	0.06	0.07	0.07	0.06	0.06	0.06
Top Quintile										
Total Income	2.15	2.21	2.24	2.05	2.15	2.37	2.30	2.27	2.22	2.22
Social Security Benefits	0.31	0.35	0.37	0.34	0.35	0.35	0.36	0.35	0.35	0.35
Financial Income	0.60	0.72	0.79	0.72	0.87	1.05	1.02	0.99	0.95	0.87
DB Pension Income	0.30	0.23	0.25	0.24	0.22	0.18	0.16	0.15	0.15	0.20
Earned Income	0.85	0.79	0.73	0.65	0.61	0.67	0.66	0.65	0.65	0.68
Imputed Rental Income	0.09	0.11	0.12	0.10	0.10	0.12	0.12	0.12	0.12	0.11

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–12f. Per Capita Income by Source at Age 67, by Per Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Total Income	1.15	1.19	1.24	1.17	1.13	1.24	1.21	1.21	1.18	1.19
Social Security Benefits	0.26	0.28	0.28	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Financial Income	0.45	0.51	0.59	0.59	0.57	0.66	0.64	0.64	0.62	0.59
DB Pension Income	0.14	0.11	0.10	0.08	0.07	0.07	0.06	0.06	0.06	0.08
Earned Income	0.25	0.24	0.22	0.19	0.18	0.20	0.20	0.20	0.20	0.20
Imputed Rental Income	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bottom Quintile										
Total Income	0.23	0.24	0.22	0.19	0.19	0.19	0.19	0.18	0.18	0.20
Social Security Benefits	0.14	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.14
Financial Income	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
DB Pension Income	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Earned Income	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Imputed Rental Income	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Quintile 2										
Total Income	0.49	0.49	0.44	0.38	0.39	0.40	0.39	0.39	0.39	0.41
Social Security Benefits	0.26	0.27	0.26	0.23	0.23	0.24	0.24	0.24	0.23	0.24
Financial Income	0.07	0.08	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08
DB Pension Income	0.07	0.05	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.03
Earned Income	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Imputed Rental Income	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Quintile 3										
Total Income	0.74	0.75	0.68	0.59	0.61	0.65	0.63	0.62	0.61	0.65
Social Security Benefits	0.28	0.30	0.30	0.27	0.27	0.28	0.27	0.27	0.27	0.28
Financial Income	0.15	0.17	0.16	0.15	0.17	0.19	0.18	0.18	0.18	0.17
DB Pension Income	0.14	0.10	0.08	0.05	0.04	0.04	0.03	0.03	0.03	0.06
Earned Income	0.12	0.12	0.11	0.09	0.09	0.10	0.10	0.09	0.09	0.10
Imputed Rental Income	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Quintile 4										
Total Income	1.09	1.16	1.10	0.96	1.00	1.10	1.07	1.06	1.04	1.06
Social Security Benefits	0.29	0.32	0.33	0.30	0.31	0.32	0.32	0.31	0.31	0.31
Financial Income	0.29	0.35	0.34	0.30	0.34	0.40	0.38	0.37	0.36	0.35
DB Pension Income	0.21	0.15	0.13	0.10	0.09	0.09	0.08	0.08	0.07	0.11
Earned Income	0.22	0.27	0.24	0.20	0.21	0.22	0.23	0.23	0.23	0.23
Imputed Rental Income	0.06	0.07	0.07	0.06	0.06	0.07	0.07	0.06	0.06	0.06
Top Quintile										
Total Income	3.21	3.34	3.76	3.71	3.48	3.88	3.80	3.80	3.70	3.65
Social Security Benefits	0.30	0.36	0.37	0.35	0.35	0.36	0.36	0.36	0.36	0.35
Financial Income	1.70	1.92	2.33	2.43	2.25	2.58	2.54	2.53	2.44	2.34
DB Pension Income	0.28	0.22	0.26	0.23	0.20	0.18	0.16	0.16	0.16	0.20
Earned Income	0.83	0.72	0.67	0.59	0.57	0.63	0.62	0.62	0.61	0.64
Imputed Rental Income	0.09	0.12	0.13	0.12	0.11	0.12	0.12	0.13	0.13	0.12

Source: The Urban Institute tabulations of MINT5.

a/ Table includes all non-institutionalized survivors including top wealth holders.

Table A9–13a. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Gender and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.76	0.75	0.71	0.64	0.67	0.73	0.71	0.70	0.69	0.70
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Total Tax	0.12	0.16	0.15	0.14	0.13	0.14	0.14	0.13	0.13	0.14
Federal Income Tax	0.09	0.12	0.12	0.11	0.10	0.12	0.11	0.11	0.11	0.11
State Income Tax	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.17	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16
Federal Tax/Total Tax	0.75	0.77	0.81	0.81	0.82	0.82	0.82	0.83	0.83	0.81
State Tax/Total Tax	0.14	0.12	0.10	0.10	0.09	0.09	0.08	0.08	0.07	0.09
Payroll Tax/Total Tax	0.11	0.10	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.09
Males										
Net Income	0.80	0.79	0.73	0.67	0.70	0.76	0.75	0.75	0.73	0.74
Total Income	0.95	0.97	0.91	0.83	0.84	0.92	0.90	0.90	0.88	0.89
Total Tax	0.15	0.18	0.18	0.16	0.14	0.16	0.15	0.15	0.15	0.16
Federal Income Tax	0.11	0.14	0.14	0.13	0.11	0.13	0.12	0.12	0.12	0.13
State Income Tax	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02
Average Total Tax Rate	0.16	0.18	0.20	0.19	0.17	0.17	0.17	0.16	0.17	0.17
Females										
Net Income	0.72	0.71	0.70	0.61	0.65	0.69	0.67	0.65	0.64	0.67
Total Income	0.82	0.85	0.83	0.72	0.76	0.81	0.79	0.77	0.76	0.78
Total Tax	0.10	0.13	0.13	0.11	0.11	0.12	0.12	0.12	0.12	0.12
Federal Income Tax	0.08	0.11	0.11	0.09	0.09	0.10	0.10	0.10	0.10	0.10
State Income Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.12	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–13b. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Marital Status and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.76	0.75	0.71	0.64	0.67	0.73	0.71	0.70	0.69	0.70
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Total Tax	0.12	0.16	0.15	0.14	0.13	0.14	0.14	0.13	0.13	0.14
Federal Income Tax	0.09	0.12	0.12	0.11	0.10	0.12	0.11	0.11	0.11	0.11
State Income Tax	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.17	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16
Never Married Individuals										
Net Income	0.62	0.68	0.66	0.61	0.59	0.61	0.59	0.59	0.58	0.60
Total Income	0.71	0.81	0.76	0.69	0.67	0.69	0.66	0.66	0.65	0.68
Total Tax	0.09	0.13	0.10	0.08	0.07	0.08	0.08	0.08	0.07	0.08
Federal Income Tax	0.07	0.10	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.06
State Income Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.13	0.16	0.14	0.12	0.11	0.12	0.11	0.11	0.11	0.12
Married Individuals										
Net Income	0.78	0.77	0.73	0.65	0.69	0.75	0.73	0.73	0.71	0.72
Total Income	0.91	0.93	0.90	0.80	0.83	0.91	0.89	0.88	0.86	0.87
Total Tax	0.13	0.16	0.17	0.15	0.14	0.16	0.15	0.15	0.15	0.15
Federal Income Tax	0.10	0.12	0.13	0.12	0.12	0.13	0.13	0.12	0.12	0.12
State Income Tax	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02
Average Total Tax Rate	0.15	0.17	0.19	0.19	0.17	0.17	0.17	0.17	0.17	0.17
Widowed Individuals										
Net Income	0.70	0.66	0.66	0.62	0.67	0.76	0.71	0.69	0.70	0.69
Total Income	0.78	0.79	0.81	0.72	0.78	0.89	0.84	0.82	0.82	0.80
Total Tax	0.08	0.13	0.15	0.11	0.11	0.14	0.13	0.12	0.12	0.12
Federal Income Tax	0.06	0.10	0.12	0.09	0.10	0.12	0.11	0.11	0.11	0.10
State Income Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.11	0.16	0.18	0.15	0.14	0.15	0.15	0.15	0.15	0.15

Continued

Table A9–13b. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Marital Status and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth 1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Divorced Individuals										
Net Income	0.73	0.73	0.70	0.62	0.66	0.70	0.69	0.68	0.67	0.68
Total Income	0.84	0.89	0.84	0.74	0.77	0.82	0.81	0.80	0.78	0.80
Total Tax	0.12	0.16	0.14	0.12	0.11	0.12	0.12	0.11	0.11	0.12
Federal Income Tax	0.09	0.13	0.12	0.10	0.09	0.10	0.10	0.09	0.09	0.10
State Income Tax	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.18	0.17	0.16	0.14	0.15	0.14	0.14	0.14	0.15

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–13c. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Race and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.76	0.75	0.71	0.64	0.67	0.73	0.71	0.70	0.69	0.70
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Total Tax	0.12	0.16	0.15	0.14	0.13	0.14	0.14	0.13	0.13	0.14
Federal Income Tax	0.09	0.12	0.12	0.11	0.10	0.12	0.11	0.11	0.11	0.11
State Income Tax	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.17	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16
White, Non-Hispanics										
Net Income	0.81	0.81	0.79	0.71	0.76	0.83	0.82	0.80	0.79	0.79
Total Income	0.94	0.99	0.97	0.87	0.91	1.00	0.98	0.97	0.96	0.95
Total Tax	0.13	0.17	0.17	0.16	0.15	0.17	0.17	0.17	0.17	0.16
Federal Income Tax	0.10	0.14	0.14	0.13	0.13	0.14	0.14	0.14	0.14	0.13
State Income Tax	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.02
Payroll Tax	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.16	0.21	0.22	0.22	0.20	0.21	0.21	0.21	0.21	0.21
African-Americans										
Net Income	0.55	0.55	0.51	0.49	0.55	0.58	0.57	0.57	0.56	0.55
Total Income	0.62	0.64	0.60	0.57	0.64	0.68	0.67	0.67	0.66	0.64
Total Tax	0.08	0.09	0.09	0.08	0.08	0.10	0.10	0.10	0.10	0.09
Federal Income Tax	0.06	0.07	0.07	0.06	0.06	0.08	0.08	0.08	0.08	0.07
State Income Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.17	0.18	0.16	0.15	0.17	0.17	0.17	0.17	0.17
Hispanics										
Net Income	0.51	0.48	0.44	0.44	0.46	0.50	0.50	0.50	0.51	0.49
Total Income	0.57	0.55	0.51	0.50	0.53	0.56	0.57	0.57	0.59	0.56
Total Tax	0.07	0.07	0.08	0.06	0.06	0.06	0.07	0.07	0.07	0.07
Federal Income Tax	0.05	0.05	0.06	0.05	0.05	0.05	0.06	0.06	0.06	0.06
State Income Tax	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.13	0.14	0.17	0.14	0.13	0.13	0.14	0.14	0.14	0.14

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–13d. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Level of Educational Attainment and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.76	0.75	0.71	0.64	0.67	0.73	0.71	0.70	0.69	0.70
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Total Tax	0.12	0.16	0.15	0.14	0.13	0.14	0.14	0.13	0.13	0.14
Federal Income Tax	0.09	0.12	0.12	0.11	0.10	0.12	0.11	0.11	0.11	0.11
State Income Tax	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.17	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16
High School Dropouts										
Net Income	0.47	0.39	0.34	0.33	0.31	0.29	0.29	0.29	0.29	0.34
Total Income	0.51	0.43	0.38	0.37	0.34	0.32	0.31	0.32	0.32	0.37
Total Tax	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Federal Income Tax	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
State Income Tax	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01
Average Total Tax Rate	0.08	0.08	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.09
High School Graduates										
Net Income	0.75	0.70	0.64	0.57	0.57	0.60	0.59	0.59	0.58	0.61
Total Income	0.85	0.81	0.75	0.65	0.65	0.69	0.68	0.67	0.66	0.70
Total Tax	0.10	0.11	0.11	0.09	0.08	0.08	0.08	0.08	0.08	0.09
Federal Income Tax	0.07	0.09	0.09	0.07	0.06	0.07	0.07	0.07	0.07	0.07
State Income Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.11	0.14	0.14	0.13	0.12	0.12	0.12	0.12	0.12	0.13
College Graduates										
Net Income	1.17	1.07	1.05	0.95	0.99	1.06	1.03	1.03	1.01	1.03
Total Income	1.48	1.38	1.36	1.25	1.24	1.33	1.29	1.27	1.26	1.30
Total Tax	0.31	0.31	0.31	0.29	0.25	0.26	0.26	0.25	0.25	0.27
Federal Income Tax	0.25	0.25	0.25	0.24	0.21	0.22	0.21	0.21	0.21	0.22
State Income Tax	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Payroll Tax	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Average Total Tax Rate	0.21	0.23	0.23	0.23	0.20	0.20	0.20	0.19	0.20	0.21

Source: The Urban Institute tabulations of MINT5.
Note: To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort

Table A9–13e. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	0.76	0.75	0.71	0.64	0.67	0.73	0.71	0.70	0.69	0.70
Total Income	0.88	0.90	0.87	0.77	0.80	0.87	0.84	0.83	0.82	0.84
Total Tax	0.12	0.16	0.15	0.14	0.13	0.14	0.14	0.13	0.13	0.14
Federal Income Tax	0.09	0.12	0.12	0.11	0.10	0.12	0.11	0.11	0.11	0.11
State Income Tax	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.14	0.17	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16
Bottom Quintile										
Net Income	0.23	0.23	0.21	0.19	0.18	0.18	0.18	0.18	0.18	0.19
Total Income	0.23	0.24	0.22	0.19	0.19	0.19	0.19	0.18	0.18	0.20
Total Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Federal Income Tax	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
State Income Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Total Tax Rate	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Quintile 2										
Net Income	0.47	0.45	0.40	0.35	0.36	0.37	0.36	0.36	0.36	0.38
Total Income	0.49	0.49	0.44	0.38	0.39	0.40	0.39	0.39	0.39	0.41
Total Tax	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Federal Income Tax	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02
State Income Tax	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Total Tax Rate	0.06	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07
Quintile 3										
Net Income	0.69	0.67	0.61	0.53	0.54	0.57	0.56	0.55	0.55	0.58
Total Income	0.74	0.75	0.68	0.59	0.61	0.65	0.63	0.62	0.61	0.65
Total Tax	0.05	0.08	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.07
Federal Income Tax	0.04	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.05
State Income Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.07	0.10	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.10
Quintile 4										
Net Income	0.98	1.00	0.94	0.83	0.88	0.95	0.92	0.91	0.89	0.92
Total Income	1.09	1.16	1.10	0.96	1.00	1.10	1.07	1.06	1.04	1.06
Total Tax	0.11	0.16	0.16	0.13	0.13	0.15	0.15	0.14	0.14	0.14
Federal Income Tax	0.08	0.12	0.13	0.10	0.10	0.12	0.12	0.12	0.12	0.11
State Income Tax	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Average Total Tax	0.10	0.14	0.15	0.13	0.12	0.13	0.14	0.14	0.14	0.13

Table A9–13e. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Rate										
Top Quintile										
Net Income	1.64	1.61	1.64	1.50	1.65	1.82	1.77	1.76	1.71	1.68
Total Income	2.15	2.21	2.24	2.05	2.15	2.37	2.30	2.27	2.22	2.22
Total Tax	0.51	0.60	0.61	0.56	0.50	0.55	0.53	0.51	0.51	0.54
Federal Income Tax	0.39	0.48	0.49	0.46	0.41	0.45	0.44	0.42	0.43	0.44
State Income Tax	0.07	0.07	0.07	0.06	0.05	0.05	0.04	0.04	0.04	0.05
Payroll Tax	0.05	0.05	0.05	0.04	0.04	0.05	0.04	0.04	0.04	0.05
Average Total Tax Rate	0.24	0.27	0.27	0.27	0.23	0.23	0.23	0.22	0.23	0.24

Source: The Urban Institute tabulations of MINT5.

a/ To minimize the effects of outliers, estimates exclude individuals whose financial income is in the top 5 percent of their cohort.

Table A9–13f. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
All Individuals										
Net Income	1.01	1.02	1.06	1.01	0.99	1.09	1.06	1.06	1.03	1.04
Total Income	1.15	1.19	1.24	1.17	1.13	1.24	1.21	1.21	1.18	1.19
Total Tax	0.14	0.17	0.18	0.15	0.14	0.16	0.15	0.15	0.15	0.16
Federal Income Tax	0.11	0.14	0.14	0.13	0.12	0.13	0.13	0.13	0.13	0.13
State Income Tax	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02
Payroll Tax	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.13	0.14	0.14	0.13	0.12	0.13	0.13	0.12	0.13	0.13
Bottom Quintile										
Net Income	0.23									
Total Income	0.23	0.24	0.22	0.19	0.19	0.19	0.19	0.18	0.18	0.20
Total Tax	0.05	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.14
Federal Income Tax	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
State Income Tax	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Payroll Tax	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.23	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Quintile 2										
Net Income	0.47	0.45	0.40	0.35	0.36	0.37	0.36	0.36	0.36	0.38
Total Income	0.49	0.49	0.44	0.38	0.39	0.40	0.39	0.39	0.39	0.41
Total Tax	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Federal Income Tax	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02
State Income Tax	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Payroll Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Total Tax Rate	0.06	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07
Quintile 3										
Net Income	0.69	0.67	0.61	0.53	0.54	0.57	0.56	0.55	0.55	0.58
Total Income	0.74	0.75	0.68	0.59	0.61	0.65	0.63	0.62	0.61	0.65
Total Tax	0.05	0.08	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.07
Federal Income Tax	0.04	0.06	0.06	0.05	0.05	0.06	0.06	0.06	0.06	0.05
State Income Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01
Payroll Tax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Average Total Tax Rate	0.07	0.10	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.10
Quintile 4										
Net Income	0.98	1.00	0.94	0.83	0.88	0.95	0.92	0.91	0.89	0.92
Total Income	1.09	1.16	1.10	0.96	1.00	1.10	1.07	1.06	1.04	1.06
Total Tax	0.11	0.16	0.16	0.13	0.13	0.15	0.15	0.14	0.14	0.14
Federal Income Tax	0.08	0.12	0.13	0.10	0.10	0.12	0.12	0.12	0.12	0.11
State Income Tax	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Payroll Tax	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Average Total Tax Rate	0.10	0.14	0.15	0.13	0.12	0.13	0.14	0.14	0.14	0.13

Continued

Table A9–13f. Net Per Capita Income and Average Tax Rate by Source at Age 67, by Per-Capita Income Quintile and Cohort (Income as a Percentage of the Economy-Wide Average Wage)[a]

	Year of Birth									
	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-09	2010-18	All
Top Quintile										
Net Income	2.68	2.75	3.16	3.17	3.01	3.35	3.28	3.29	3.19	3.12
Total Income	3.21	3.34	3.76	3.71	3.48	3.88	3.80	3.80	3.70	3.65
Total Tax	0.53	0.58	0.60	0.55	0.47	0.52	0.52	0.50	0.51	0.53
Federal Income Tax	0.41	0.46	0.49	0.45	0.39	0.43	0.43	0.42	0.43	0.44
State Income Tax	0.08	0.07	0.07	0.06	0.05	0.05	0.05	0.04	0.04	0.05
Payroll Tax	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Average Total Tax Rate	0.16	0.17	0.16	0.15	0.14	0.13	0.14	0.13	0.14	0.14

Source: The Urban Institute tabulations of MINT5.

a/ Table includes all non-institutionalized survivors including top wealth holders.

Table A9–16a. Percent of Population Ages 62 to 89 in 2020, by Individual Characteristics and Age

	Age in 2020						
	62 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	ALL
ALL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
By Educational Attainment							
High School Dropout	11.8	10.7	10.5	12.5	13.1	14.9	11.5
High School Graduate	61.6	59.6	57.0	59.0	61.8	61.0	59.6
College Graduate	26.6	29.7	32.5	28.6	25.1	24.1	28.9
By Race/Ethnicity							
White, Non-Hispanic	71.2	74.3	77.1	79.5	80.7	84.5	76.1
African American	10.7	9.9	8.4	8.0	7.9	6.4	9.1
Hispanic	11.6	10.0	8.4	7.2	6.6	4.2	9.0
Other	6.5	5.7	6.2	5.3	4.9	4.9	5.8
By Gender							
Female	51.9	52.3	53.5	56.3	58.7	62.2	54.1
Male	48.1	47.7	46.5	43.7	41.3	37.8	45.9
By Marital Status							
Never Married	7.5	6.5	4.7	3.8	3.4	2.7	5.4
Married	66.3	64.9	62.1	55.8	49.0	38.7	60.6
Widowed	6.8	9.7	15.0	23.6	33.5	46.9	16.1
Divorced	19.5	19.0	18.2	16.8	14.2	11.6	17.8
By SS Benefit Status							
OASI Recipient	56.9	88.4	95.1	94.7	93.6	94.3	85.1
DI Recipient	13.4	2.3	N/A	N/A	N/A	N/A	3.4
SSI Recipient	0.8	2.3	2.4	2.4	3.1	3.1	2.1
Not Receiving SS Benefits	28.8	7.0	2.5	3.0	3.2	2.6	9.3
By Immigration Age							
Native Born	81.8	84.2	85.1	85.1	85.6	88.2	84.4
0 - 20	4.1	3.7	3.1	2.6	1.9	1.5	3.2
21 - 30	5.0	3.9	3.5	3.2	2.8	3.2	3.8
31 - 40	5.2	3.1	2.6	2.4	2.1	1.5	3.2
41 - 50	2.4	2.8	2.5	2.1	1.6	0.6	2.3
51 +	1.5	2.2	3.2	4.6	5.9	4.9	3.1

Source: The Urban Institute tabulations of MINT5.
Notes: DI beneficiaries convert to old age beneficiaries at the normal retirement age.

Table A9–16b. Average Per Capita Income in 2020, by Individual Characteristics and Income Source (Exclude Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
ALL	100%	0.92	0.26	0.00	0.09	0.30	0.21	0.05
By Educational Attainment								
High School Dropout	12	0.42	0.18	0.01	0.04	0.09	0.08	0.03
High School Graduate	61	0.81	0.26	0.00	0.08	0.26	0.16	0.05
College Graduate	27	1.39	0.30	0.00	0.15	0.49	0.37	0.08
By Race/Ethnicity								
White, Non-Hispanic	75	1.01	0.28	0.00	0.10	0.35	0.22	0.06
African-American	10	0.63	0.23	0.00	0.08	0.12	0.17	0.03
Hispanic	9	0.56	0.19	0.01	0.05	0.13	0.15	0.04
Other	6	0.76	0.18	0.01	0.07	0.23	0.22	0.05
By Gender								
Female	54	0.88	0.27	0.00	0.09	0.30	0.16	0.06
Male	46	0.97	0.25	0.00	0.10	0.31	0.26	0.05
By Marital Status								
Never Married	5	0.81	0.23	0.01	0.08	0.26	0.19	0.04
Married	61	0.95	0.25	0.00	0.09	0.31	0.25	0.05
Widowed	16	0.88	0.30	0.00	0.09	0.32	0.08	0.07
Divorced	18	0.89	0.29	0.00	0.10	0.28	0.18	0.06
By Age								
62 to 64	21	1.00	0.18	0.00	0.07	0.22	0.48	0.05
65 to 69	29	0.89	0.27	0.00	0.09	0.25	0.22	0.05
70 to 74	23	0.90	0.30	0.00	0.11	0.30	0.13	0.06
75 to 79	14	0.86	0.29	0.00	0.09	0.35	0.07	0.06
80 to 84	9	0.91	0.28	0.00	0.10	0.43	0.05	0.06
85 to 89	5	1.06	0.27	0.00	0.12	0.58	0.03	0.06
By SS Benefit Status								
OASI Recipient	85	0.92	0.29	0.00	0.10	0.32	0.15	0.06
DI Recipient	4	0.71	0.28	0.00	0.07	0.16	0.18	0.04
SSI Recipient	2	0.18	0.06	0.10	0.01	0.00	0.00	0.01
Not Receiving SS Benefits	9	1.19	0.03	0.00	0.06	0.24	0.81	0.05
By Per-Capita Income Quintile								
Bottom quintile	21	0.23	0.15	0.01	0.01	0.03	0.01	0.02
Second quintile	21	0.47	0.26	0.00	0.04	0.08	0.05	0.04
Third quintile	21	0.73	0.29	0.00	0.09	0.19	0.12	0.05
Fourth quintile	21	1.17	0.30	0.00	0.13	0.41	0.26	0.07
Top quintile	16	2.36	0.32	0.00	0.23	0.96	0.73	0.11

Continued

Table A9–16b. Average Per Capita Income in 2020, by Individual Characteristics and Income Source (Exclude Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
Immigration Age								
Native Born	84	0.97	0.28	0.00	0.10	0.12	0.21	0.06
0 – 20	3	0.87	0.25	0.00	0.08	0.10	0.21	0.06
21 – 30	4	0.85	0.23	0.00	0.06	0.10	0.23	0.06
31 – 40	3	0.65	0.18	0.00	0.03	0.06	0.20	0.04
41 – 50	2	0.48	0.13	0.01	0.03	0.05	0.16	0.03
51 +	3	0.38	0.04	0.02	0.07	0.02	0.10	0.02

Source: The Urban Institute tabulations of MINT5.
a/ Table includes all non-institutionalized survivors excluding top five percent of wealth holders.
b/ Total income does not include co-resident income.

Table A9–16c. Average Before and After Tax Per Capita Income and Taxes Paid by Type in 2020, by Individual Characteristics and Income Source (Exclude Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
ALL	0.78	0.11	0.02	0.01	0.14	0.15
By Educational Attainment						
High School Dropout	0.39	0.03	0.00	0.01	0.04	0.09
High School Graduate	0.71	0.08	0.01	0.01	0.10	0.13
College Graduate	1.13	0.21	0.03	0.02	0.26	0.19
By Race/Ethnicity						
White, Non-Hispanic	0.86	0.12	0.02	0.02	0.15	0.15
African American	0.54	0.07	0.01	0.01	0.09	0.14
Hispanic	0.49	0.05	0.01	0.01	0.07	0.13
Other	0.65	0.09	0.01	0.02	0.11	0.15
By Gender						
Female	0.75	0.10	0.01	0.01	0.12	0.14
Male	0.82	0.12	0.02	0.02	0.16	0.16
By Marital Status						
Never Married	0.70	0.09	0.01	0.01	0.11	0.14
Married	0.80	0.12	0.02	0.02	0.15	0.16
Widowed	0.77	0.09	0.01	0.01	0.10	0.12
Divorced	0.76	0.10	0.01	0.01	0.13	0.15
By Age						
62 to 64	0.83	0.12	0.02	0.03	0.17	0.17
65 to 69	0.73	0.13	0.02	0.02	0.16	0.18
70 to 74	0.77	0.11	0.01	0.01	0.13	0.14
75 to 79	0.76	0.09	0.01	0.01	0.10	0.12
80 to 84	0.82	0.08	0.01	0.00	0.09	0.10
85 to 89	0.97	0.08	0.01	0.00	0.09	0.08
By SS Benefit Status						
OASI Recipient	0.79	0.10	0.01	0.01	0.13	0.14
DI Recipient	0.63	0.06	0.01	0.01	0.08	0.11
SSI Recipient	0.18	0.00	0.00	0.00	0.00	0.01
Not Receiving SS Benefits	0.88	0.22	0.04	0.05	0.31	0.26
By Per-Capita Income Quintile						
Bottom quintile	0.22	0.01	0.00	0.00	0.01	0.04
Second quintile	0.44	0.03	0.00	0.00	0.03	0.07
Third quintile	0.66	0.06	0.01	0.01	0.08	0.10
Fourth quintile	1.01	0.13	0.02	0.02	0.16	0.14
Top quintile	1.85	0.40	0.06	0.05	0.50	0.21

Continued

Table A9–16c. Average Before and After Tax Per Capita Income and Taxes Paid by Type in 2020, by Individual Characteristics and Income Source (Exclude Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
By Immigration Age						
Native Born	0.82	0.12	0.02	0.02	0.15	0.15
0 - 20	0.74	0.10	0.01	0.02	0.13	0.15
21 - 30	0.72	0.10	0.01	0.02	0.13	0.15
31 - 40	0.56	0.06	0.01	0.01	0.09	0.13
41 - 50	0.41	0.05	0.01	0.01	0.07	0.14
51 +	0.35	0.02	0.00	0.01	0.03	0.09

Source: The Urban Institute tabulations of MINT5.
a/ Table includes all non-institutionalized survivors excluding top wealth holders.
b/ Net income does not include co-resident income.

Table A9–16d. Average Per Capita Income in 2020, by Individual Characteristics and Income Source (Include Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
ALL	100%	1.31	0.27	0.00	0.10	0.66	0.23	0.06
By Educational Attainment								
High School Dropout	12	0.44	0.18	0.01	0.04	0.11	0.08	0.03
High School Graduate	60	1.02	0.26	0.00	0.08	0.47	0.17	0.05
College Graduate	29	2.25	0.31	0.00	0.17	1.28	0.41	0.09
By Race/Ethnicity								
White, Non-Hispanic	76	1.48	0.28	0.00	0.11	0.79	0.24	0.07
African American	9	0.69	0.23	0.00	0.08	0.16	0.18	0.03
Hispanic	9	0.62	0.19	0.01	0.05	0.19	0.15	0.04
Other	6	1.10	0.19	0.01	0.07	0.52	0.25	0.05
By Gender								
Female	54	1.24	0.27	0.00	0.10	0.64	0.17	0.06
Male	46	1.39	0.26	0.00	0.11	0.69	0.29	0.06
By Marital Status								
Never Married	5	1.11	0.23	0.01	0.09	0.51	0.22	0.05
Married	61	1.35	0.25	0.00	0.10	0.67	0.27	0.05
Widowed	16	1.36	0.31	0.00	0.10	0.79	0.08	0.08
Divorced	18	1.19	0.29	0.00	0.10	0.54	0.19	0.06
By Age								
62 to 64	20	1.32	0.18	0.00	0.08	0.47	0.53	0.06
65 to 69	29	1.30	0.28	0.00	0.11	0.62	0.24	0.06
70 to 74	23	1.28	0.31	0.00	0.11	0.66	0.13	0.06
75 to 79	14	1.21	0.29	0.00	0.09	0.69	0.08	0.06
80 to 84	9	1.22	0.28	0.00	0.10	0.73	0.05	0.06
85 to 89	5	2.02	0.27	0.00	0.13	1.54	0.03	0.06
By SS Benefit Status								
OASI Recipient	85	1.32	0.30	0.00	0.11	0.70	0.16	0.06
DI Recipient	3	0.90	0.28	0.00	0.07	0.34	0.18	0.04
SSI Recipient	2	0.18	0.06	0.10	0.01	0.00	0.00	0.01
Not Receiving SS Benefits	9	1.64	0.03	0.00	0.07	0.57	0.91	0.06
By Per-Capita Income Quintile								
Bottom quintile	20	0.23	0.15	0.01	0.01	0.03	0.01	0.02
Second quintile	20	0.47	0.26	0.00	0.04	0.08	0.05	0.04
Third quintile	20	0.73	0.29	0.00	0.09	0.19	0.12	0.05
Fourth quintile	20	1.17	0.30	0.00	0.13	0.41	0.26	0.07
Top quintile	20	3.96	0.33	0.00	0.23	2.60	0.69	0.12

Continued

Table A9–16d. Average Per Capita Income in 2020, by Individual Characteristics and Income Source (Include Outliers)

(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
By Immigration Age								
Native Born	84	1.38	0.28	0.00	0.11	0.70	0.23	0.06
0 - 20	3	1.38	0.26	0.00	0.09	0.74	0.23	0.06
21 - 30	4	1.21	0.24	0.00	0.07	0.58	0.26	0.06
31 - 40	3	0.83	0.19	0.00	0.03	0.36	0.21	0.05
41 - 50	2	0.51	0.13	0.01	0.03	0.14	0.17	0.03
51 +	3	0.55	0.04	0.02	0.07	0.30	0.10	0.02

Source: The Urban Institute tabulations of MINT5.

a/ Table includes all non-institutionalized survivors including top wealth holders.

b/ Total income does not include co-resident income.

Table A9–16e. Average After Tax Per Capita Income and Taxes Paid by Type in 2020, by Individual Characteristics and Income Source (Include Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
ALL	1.15	0.13	0.02	0.02	0.16	0.12
By Educational Attainment						
High School Dropout	0.41	0.03	0.00	0.01	0.04	0.08
High School Graduate	0.91	0.09	0.01	0.01	0.11	0.11
College Graduate	1.94	0.25	0.04	0.03	0.31	0.14
By Race/Ethnicity						
White, Non-Hispanic	1.30	0.14	0.02	0.02	0.18	0.12
African American	0.59	0.07	0.01	0.01	0.10	0.14
Hispanic	0.55	0.06	0.01	0.01	0.07	0.12
Other	0.96	0.11	0.02	0.02	0.14	0.13
By Gender						
Female	1.10	0.11	0.02	0.01	0.14	0.11
Male	1.21	0.15	0.02	0.02	0.19	0.13
By Marital Status						
Never Married	0.97	0.12	0.02	0.02	0.15	0.13
Married	1.18	0.14	0.02	0.02	0.17	0.13
Widowed	1.24	0.11	0.01	0.01	0.13	0.09
Divorced	1.03	0.13	0.02	0.01	0.16	0.13
By Age						
62 to 64	1.12	0.14	0.02	0.03	0.19	0.15
65 to 69	1.11	0.15	0.02	0.02	0.19	0.15
70 to 74	1.13	0.13	0.02	0.01	0.15	0.12
75 to 79	1.09	0.10	0.01	0.01	0.12	0.10
80 to 84	1.11	0.09	0.01	0.00	0.11	0.09
85 to 89	1.93	0.08	0.01	0.00	0.10	0.05
By SS Benefit Status						
OASI Recipient	1.18	0.12	0.02	0.01	0.14	0.11
DI Recipient	0.82	0.06	0.01	0.01	0.08	0.09
SSI Recipient	0.18	0.00	0.00	0.00	0.00	0.01
Not Receiving SS Benefits	1.26	0.27	0.05	0.06	0.37	0.23
By Per-Capita Income Quintile						
Bottom quintile	0.22	0.01	0.00	0.00	0.01	0.04
Second quintile	0.44	0.03	0.00	0.00	0.03	0.07
Third quintile	0.66	0.06	0.01	0.01	0.08	0.10
Fourth quintile	1.01	0.13	0.02	0.02	0.16	0.14
Top quintile	3.43	0.42	0.06	0.04	0.53	0.13

Continued

Table A9–16e. Average After Tax Per Capita Income and Taxes Paid by Type in 2020, by Individual Characteristics and Income Source (Include Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
By Immigration Age						
Native Born	1.21	0.14	0.02	0.02	0.17	0.12
0 - 20	1.23	0.12	0.02	0.02	0.15	0.11
21 - 30	1.04	0.13	0.02	0.02	0.17	0.14
31 - 40	0.74	0.07	0.01	0.02	0.09	0.11
41 - 50	0.44	0.05	0.01	0.01	0.07	0.14
51 +	0.51	0.03	0.00	0.01	0.04	0.07

Source: The Urban Institute tabulations of MINT5.
a/ Table includes all non-institutionalized survivors including top wealth holders.
b/ Net income does not include co-resident income.

Table A9–17a. Average Family Total Income as a Percent of the Poverty Threshold in 2020, by Age and Individual Characteristics

	Age in 2020						
	62 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	ALL
ALL	8.55	8.46	8.18	7.44	7.35	11.52	8.31
By Educational Attainment							
High School Dropout	3.41	2.77	2.81	2.91	3.23	3.62	3.03
High School Graduate	6.20	5.95	6.08	6.04	6.43	13.07	6.42
College Graduate	16.29	15.56	13.59	12.30	11.75	12.46	14.32
By Race/Ethnicity							
White, Non-Hispanic	9.69	9.66	9.15	8.28	8.03	12.81	9.35
African-American	4.99	4.47	4.48	3.64	3.60	3.95	4.41
Hispanic	4.75	3.96	3.86	3.74	4.28	5.05	4.16
Other	8.68	7.75	6.89	5.60	6.29	4.67	7.25
By Gender							
Female	8.02	7.78	7.33	6.61	7.00	10.80	7.64
Male	9.12	9.21	9.15	8.52	7.84	12.70	9.11
By Marital Status							
Never Married	5.19	5.01	6.13	5.15	5.13	6.27	5.33
Married	9.98	10.11	9.74	8.69	9.08	13.84	9.84
Widowed	5.56	5.71	5.45	6.13	5.86	11.30	6.51
Divorced	6.01	5.41	5.62	5.63	5.38	5.91	5.64
By SS Benefit Status							
OASI Recipient	7.43	8.53	8.46	7.68	7.55	11.85	8.30
DI Recipient	5.85	7.08	N/A	N/A	N/A	N/A	6.09
SSI Recipient	1.20	1.39	1.51	1.59	1.66	2.08	1.52
Not Receiving SS Benefits	12.24	10.34	3.83	4.53	6.90	10.80	10.77
By Per-Capita Income Quintile							
Bottom quintile	1.61	1.71	1.80	1.80	1.88	1.94	1.75
Second quintile	3.18	2.96	2.99	2.97	2.94	3.01	3.01
Third quintile	4.89	4.56	4.53	4.36	4.35	4.64	4.58
Fourth quintile	7.92	7.33	7.17	6.82	6.88	7.23	7.30
Top quintile	24.49	26.63	23.67	21.93	20.58	40.23	24.93
Immigration Age							
Native Born	8.88	8.93	8.58	7.80	7.53	12.03	8.70
0 - 20	9.82	8.80	8.90	7.34	8.18	7.83	8.87
21 - 30	8.45	7.81	7.06	6.09	8.97	9.12	7.75
31 - 40	5.78	4.64	5.71	6.42	5.76	5.55	5.50
41 - 50	4.25	3.11	3.63	4.15	3.25	2.99	3.62
51 +	3.69	3.29	3.60	3.82	5.37	8.02	4.21

Source: The Urban Institute tabulations of MINT5.
N/A indicates not applicable. All DI beneficiaries convert to worker benefits at the normal retirement age.

Table A9–18b. Percent of Individuals in Poverty in 2020, by Age and Individual Characteristics

	Age in 2020						
	62 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	ALL
ALL	5.6	4.8	3.8	4.0	3.9	3.3	4.5
By Educational Attainment							
High School Dropout	15.7	18.6	16.0	14.9	12.7	9.1	15.7
High School Graduate	5.3	4.0	3.3	3.1	3.0	2.5	3.9
College Graduate	1.7	1.4	0.8	1.1	1.7	1.6	1.3
By Race/Ethnicity							
White, Non-Hispanic	3.5	3.0	2.1	2.5	2.5	2.5	2.7
African-American	11.4	10.7	9.0	9.3	6.8	3.2	9.8
Hispanic	12.5	10.3	11.0	9.1	10.2	8.7	10.8
Other	7.4	9.0	7.8	11.7	15.2	11.0	9.2
By Gender/Marital Status							
All Females	6.0	5.4	4.4	4.8	4.4	4.3	5.1
Never Married Female	13.1	11.8	10.8	12.3	15.2	19.6	12.4
Married Female	3.1	2.7	2.2	2.8	2.6	1.4	2.7
Widowed Female	8.3	7.7	5.5	5.0	4.6	4.5	5.7
Divorced Female	10.4	9.0	7.1	7.5	5.2	4.2	8.2
All Males	5.2	4.2	3.1	3.0	3.2	1.6	3.8
Never Married Male	16.2	10.4	13.2	12.9	12.8	8.9	13.0
Married Male	3.5	3.2	2.0	2.1	2.2	0.9	2.7
Widowed Male	6.8	7.4	4.3	4.4	5.8	3.5	5.4
Divorced Male	7.3	5.0	5.0	4.3	4.1	1.4	5.3
By SS Benefit Status							
OASI Recipient	4.2	2.5	2.1	2.3	1.8	1.9	2.5
DI Recipient	3.8	6.9	N/A	N/A	N/A	N/A	4.4
SSI Recipient	57.4	52.0	49.1	45.3	42.6	32.5	48.2
Not Receiving SS Benefits	7.7	18.1	26.4	25.7	27.8	18.1	12.7
Immigration Age							
Native Born	4.3	3.6	2.6	2.8	2.2	2.3	3.2
0 - 20	5.0	5.5	4.0	4.9	6.8	8.8	5.1
21 - 30	8.3	3.8	3.4	3.5	1.5	2.2	4.7
31 - 40	13.5	12.5	10.8	7.4	3.6	4.4	11.3
41 - 50	17.7	17.4	14.5	12.2	18.0	12.4	16.1
51 +	21.1	24.5	21.3	21.2	25.9	17.2	22.4

Source: The Urban Institute tabulations of MINT5.
N/A indicates not applicable. All DI beneficiaries convert to worker benefits at the normal retirement age.

Table A9–18c. Percent of 62- to 89-Year-Old Population, Average Family Income as a Percent of Poverty and Percent of 62- to 89-Year-Olds Below Poverty in the Early 1990s and 2020, by Individual Characteristics

	Percent of Retirees		Average Family Income/Poverty Threshold			Percent of Retirees Below Poverty		
			Census Measure	UI Measure		Census Measure	UI Measure	
	Early 1990s	2020	Early 1990s	Early 1990s	2020	Early 1990s	Early 1990s	2020
ALL	100%	100.0%	3.33	3.47	8.31	8.2%	7.8%	4.5%
By Educational Attainment								
High School Dropout	39.8	12.1	2.30	2.42	3.03	14.9	14.4	15.7
High School Graduate	47.5	61.0	3.57	3.71	6.42	4.3	3.9	3.9
College Graduate	12.7	27.0	5.63	5.80	14.32	2.0	2.1	1.3
By Race/Ethnicity								
White, Non-Hispanic	85.5	75.3	3.50	3.65	9.35	6.1	5.7	2.7
African-American	7.6	9.5	2.13	2.19	4.41	23.8	23.5	9.8
Hispanic	4.7	9.4	2.25	2.33	4.16	20.1	19.4	10.8
Other	2.2	5.8	3.18	3.30	7.25	10.4	11.9	9.2
By Gender								
Female	57.5	54.3	3.05	3.16	7.64	10.8	10.3	5.1
Male	42.5	45.7	3.71	3.90	9.11	4.7	4.3	3.8
By Marital Status								
Never Married	4.6	5.5	2.69	2.68	5.33	17.6	17.0	12.7
Married	59.2	60.5	3.88	4.07	9.84	2.6	2.5	2.7
Widowed	29.2	16.0	2.50	2.55	6.51	15.1	14.4	5.6
Divorced	7.0	18.0	2.53	2.61	5.64	20.8	20.2	7.1
By Age								
62 to 64	16.1	20.5	4.17	4.29	8.55	6.1	6.1	5.6
65 to 69	27.9	29.0	3.55	3.65	8.46	6.4	6.1	4.8
70 to 74	22.9	22.8	3.19	3.30	8.18	7.8	7.5	3.8
75 to 79	16.6	14.4	3.01	3.15	7.44	9.5	9.0	4.0
80 to 84	12.1	8.7	2.67	2.84	7.35	12.8	12.4	3.9
85 to 89	4.3	4.6	2.62	2.83	11.52	11.8	10.7	3.3
By SS Benefit Status								
OASI Recipient	76.6	85.1	3.29	3.42	8.30	5.6	5.2	2.5
DI Recipient	6.5	3.5	2.43	2.53	6.09	12.5	12.2	4.4
SSI Recipient	4.9	2.3	1.41	1.43	1.52	49.1	48.9	48.2
Not Receiving SS Benefits	12.0	9.1	4.83	5.06	10.77	5.7	5.6	12.7

Source: The Urban Institute tabulations of MINT5 and the 1990 to 1993 SIPP.

Notes: Income from assets is based on reported income from assets in the Census measure and annuitized assets in the UI measure. All poverty rates use the 65 and older poverty thresholds.

Table A9–18d. Contribution of Individual Characteristics to Poverty Rates in Early 1990s and 2020 (UI Measures of Poverty Level Income)

	Percent of Retirees		Percent of Retirees Below Poverty		Contribution to Poverty	
	Early 1990s	2020	Early 1990s	2020	Early 1990s	2020
ALL	100.0%	100.0%	7.8%	4.5%	7.8%	4.5%
By Educational Attainment						
High School Dropout	39.8	12.1	14.4	15.7	5.7	1.9
High School Graduate	47.5	61.0	3.9	3.9	1.9	2.4
College Graduate	12.7	27.0	2.1	1.3	0.3	0.4
By Race/Ethnicity						
White, Non-Hispanic	85.5	75.3	5.7	2.7	4.9	2.0
African-American	7.6	9.5	23.5	9.8	1.8	0.9
Hispanic	4.7	9.4	19.4	10.8	0.9	1.0
Other	2.2	5.8	11.9	9.2	0.3	0.5
By Gender						
Female	57.5	54.3	10.3	5.1	5.9	2.8
Male	42.5	45.7	4.3	3.8	1.8	1.7
By Marital Status						
Never Married	4.6	5.5	17.0	12.7	0.8	0.7
Married	59.2	60.5	2.5	2.7	1.5	1.6
Widowed	29.2	16.0	14.4	5.6	4.2	0.9
Divorced	7.0	18.0	20.2	7.1	1.4	1.3
By Age						
62 to 64	16.1	20.5	6.1	5.6	1.0	1.2
65 to 69	27.9	29.0	6.1	4.8	1.7	1.4
70 to 74	22.9	22.8	7.5	3.8	1.7	0.9
75 to 79	16.6	14.4	9.0	4.0	1.5	0.6
80 to 84	12.1	8.7	12.4	3.9	1.5	0.3
85 to 89	4.3	4.6	10.7	3.3	0.5	0.2
By SS Benefit Status						
OASI Recipient	76.6	85.1	5.2	2.5	4.0	2.1
DI Recipient	6.5	3.5	12.2	4.4	0.8	0.2
SSI Recipient	4.9	2.3	48.9	48.2	2.4	1.1
Not Receiving SS Benefits	12.0	9.1	5.6	12.7	0.7	1.2

Source: The Urban Institute tabulations of MINT5 and the 1990 to 1993 SIPP.
Note: Contribution to poverty of any group is equal to the product of its share in the population and its own poverty rate

Table A9–19a. Percent of Population Ages 62 to 89 in 2060, by Individual Characteristics

	Age in 2060						
	62 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	ALL
ALL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
By Educational Attainment							
High School Dropout	12.7	12.4	11.1	9.5	8.6	6.6	10.7
High School Graduate	51.1	50.6	50.6	51.4	50.2	53.3	51.0
College Graduate	36.2	36.9	38.2	39.1	41.2	40.1	38.3
By Race/Ethnicity							
White, Non-Hispanic	54.2	55.4	57.9	59.2	60.5	66.5	58.0
African-American	11.8	12.2	12.1	11.4	11.2	9.3	11.6
Hispanic	23.8	22.0	19.7	19.5	17.2	14.4	20.1
Other	10.2	10.4	10.3	9.9	11.1	9.8	10.3
By Gender							
Female	50.6	51.1	52.4	54.3	56.7	60.8	53.4
Male	49.4	48.9	47.6	45.7	43.3	39.2	46.6
By Marital Status							
Never Married	11.6	11.5	10.5	10.2	9.5	9.4	10.6
Married	63.6	61.3	58.8	50.9	46.1	35.6	55.2
Widowed	5.7	7.9	10.9	17.8	23.6	32.8	14.0
Divorced	19.1	19.3	19.8	21.1	20.8	22.2	20.1
By SS Benefit Status							
OASI Recipient	54.4	85.7	96.6	96.5	96.7	97.0	87.6
DI Recipient	12.5	5.4	N/A	N/A	N/A	N/A	3.2
SSI Recipient	0.6	0.9	0.8	0.8	0.8	0.8	0.8
Not Receiving SS Benefits	32.5	8.1	2.7	2.7	2.4	2.2	8.4
Immigration Age							
Native born	78.3	78.5	77.8	75.9	75.6	76.3	77.3
0 - 20	9.1	8.3	8.3	9.0	8.8	7.7	8.5
21 - 30	6.1	5.9	6.3	6.5	7.0	7.4	6.4
31 - 40	3.3	3.6	3.5	4.0	3.7	3.7	3.6
41 - 50	1.9	1.9	1.9	2.0	2.1	2.0	2.0
51 +	1.3	1.7	2.2	2.6	2.9	2.9	2.2

Source: The Urban Institute tabulations of MINT5.
Notes: DI beneficiaries convert to old age beneficiaries at the normal retirement age.

Table A9–19b. Average Per Capita Income in 2060, by Individual Characteristics and Income Source
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
ALL	100	0.91	0.25	0.00	0.06	0.39	0.17	0.05
By Educational Attainment								
High School Dropout	11.2	0.34	0.15	0.00	0.02	0.09	0.06	0.02
High School Graduate	52.5	0.72	0.24	0.00	0.04	0.28	0.12	0.03
College Graduate	36.3	1.37	0.29	0.00	0.09	0.63	0.27	0.08
By Race/Ethnicity								
White, Non-Hispanic	56.9	1.07	0.27	0.00	0.07	0.48	0.19	0.06
African-American	12.0	0.67	0.23	0.00	0.04	0.20	0.16	0.04
Hispanic	20.7	0.61	0.21	0.00	0.03	0.22	0.13	0.03
Other	10.4	0.91	0.23	0.00	0.04	0.39	0.20	0.05
By Gender								
Female	53.8	0.86	0.25	0.00	0.05	0.38	0.14	0.05
Male	46.2	0.96	0.25	0.00	0.06	0.40	0.21	0.05
By Marital Status								
Never Married	10.5	0.72	0.24	0.00	0.04	0.28	0.13	0.04
Married	55.1	0.94	0.24	0.00	0.06	0.39	0.21	0.04
Widowed	14.1	0.90	0.29	0.00	0.06	0.41	0.07	0.08
Divorced	20.2	0.92	0.27	0.00	0.05	0.40	0.15	0.05
By Age								
62 to 64	15.2	1.08	0.16	0.00	0.05	0.28	0.54	0.05
65 to 69	24.2	0.85	0.25	0.00	0.05	0.30	0.20	0.05
70 to 74	21.7	0.84	0.28	0.00	0.06	0.36	0.10	0.05
75 to 79	17.9	0.88	0.28	0.00	0.06	0.43	0.07	0.05
80 to 84	13.0	0.95	0.27	0.00	0.06	0.53	0.04	0.05
85 to 89	8.0	0.97	0.26	0.00	0.06	0.59	0.02	0.05
By SS Benefit Status								
OASI Recipient	87.5	0.90	0.27	0.00	0.06	0.41	0.11	0.05
DI Recipient	3.2	0.61	0.27	0.00	0.03	0.15	0.13	0.03
SSI Recipient	0.8	0.11	0.04	0.06	0.00	0.00	0.00	0.01
Not Receiving SS Benefits	8.4	1.20	0.03	0.00	0.04	0.29	0.81	0.05
By Per-Capita Income Quintile								
Bottom quintile	21.1	0.20	0.14	0.00	0.01	0.03	0.01	0.01
Second quintile	21.1	0.41	0.24	0.00	0.02	0.10	0.03	0.03
Third quintile	21.1	0.67	0.27	0.00	0.04	0.22	0.10	0.04
Fourth quintile	21.0	1.15	0.30	0.00	0.08	0.49	0.22	0.06
Top quintile	15.8	2.52	0.32	0.00	0.16	1.32	0.61	0.11

Continued

Table A9–19b. Average Per Capita Income in 2060, by Individual Characteristics and Income Source

(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
Immigration Age								
Native born	77.0	0.96	0.26	0.00	0.06	0.18	0.18	0.05
0 - 20	8.4	0.85	0.24	0.00	0.04	0.15	0.15	0.05
21 - 30	6.5	0.87	0.25	0.00	0.04	0.15	0.15	0.05
31 - 40	3.7	0.58	0.18	0.00	0.03	0.14	0.14	0.03
41 - 50	2.1	0.44	0.13	0.00	0.02	0.12	0.12	0.03
51 +	2.2	0.36	0.04	0.01	0.05	0.09	0.09	0.02

Source: The Urban Institute tabulations of MINT5.

a/ Table includes all non-institutionalized survivors excluding top wealth holders.

b/ Total income does not include co-resident income.

Table A9–19c. Average Net Per Capita Income and Average Tax Rate by Tax Type in 2060, by Individual Characteristics and Income Source (Exclude Outliers)
(Income and Tax as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
ALL	0.78	0.11	0.01	0.01	0.13	0.15
By Educational Attainment						
High School Dropout	0.31	0.02	0.00	0.00	0.03	0.08
High School Graduate	0.63	0.07	0.01	0.01	0.09	0.12
College Graduate	1.13	0.20	0.02	0.02	0.24	0.17
By Race/Ethnicity						
White, Non-Hispanic	0.90	0.14	0.01	0.01	0.17	0.16
African American	0.58	0.07	0.01	0.01	0.09	0.13
Hispanic	0.54	0.06	0.01	0.01	0.08	0.12
Other	0.78	0.11	0.01	0.01	0.13	0.14
By Gender						
Female	0.74	0.10	0.01	0.01	0.12	0.14
Male	0.81	0.12	0.01	0.02	0.15	0.16
By Marital Status						
Never Married	0.64	0.07	0.01	0.01	0.08	0.12
Married	0.80	0.12	0.01	0.02	0.15	0.16
Widowed	0.78	0.11	0.01	0.01	0.12	0.14
Divorced	0.79	0.11	0.01	0.01	0.13	0.14
By Age						
62 to 64	0.89	0.14	0.02	0.04	0.19	0.18
65 to 69	0.70	0.12	0.01	0.01	0.15	0.18
70 to 74	0.71	0.11	0.01	0.01	0.13	0.15
75 to 79	0.76	0.10	0.01	0.01	0.12	0.13
80 to 84	0.85	0.09	0.01	0.00	0.10	0.10
85 to 89	0.88	0.09	0.01	0.00	0.10	0.10
By SS Benefit Status						
OASI Recipient	0.78	0.10	0.01	0.01	0.12	0.13
DI Recipient	0.55	0.05	0.01	0.01	0.06	0.10
SSI Recipient	0.11	0.00	0.00	0.00	0.00	0.00
Not Receiving SS Benefits	0.90	0.23	0.03	0.05	0.31	0.25
By Per-Capita Income Quintile						
Bottom quintile	0.19	0.01	0.00	0.00	0.01	0.04
Second quintile	0.38	0.02	0.00	0.00	0.03	0.07
Third quintile	0.60	0.06	0.01	0.01	0.07	0.11
Fourth quintile	1.00	0.13	0.01	0.02	0.16	0.14
Top quintile	2.03	0.41	0.04	0.04	0.50	0.20

Continued

Table A9–19c. Average Net Per Capita Income and Average Tax Rate by Tax Type in 2060, by Individual Characteristics and Income Source
(Income and Tax as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
By Immigration Age						
Native born	0.82	0.12	0.01	0.01	0.15	0.15
0 - 20	0.75	0.08	0.01	0.01	0.10	0.12
21 - 30	0.75	0.10	0.01	0.01	0.11	0.13
31 - 40	0.48	0.09	0.01	0.01	0.10	0.17
41 - 50	0.38	0.04	0.00	0.01	0.06	0.13
51 +	0.32	0.02	0.00	0.01	0.03	0.09

Source: The Urban Institute tabulations of MINT5.
a/ Table includes all non-institutionalized survivors excluding top wealth holders.
b/ Total income does not include co-resident income.

Table A9–19d. Average Per Capita Income in 2060, by Individual Characteristics and Income Source (Include Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
ALL	100	1.38	0.26	0.00	0.06	0.83	0.18	0.05
By Educational Attainment								
High School Dropout	10.7	0.37	0.15	0.00	0.02	0.13	0.06	0.02
High School Graduate	51.0	0.85	0.24	0.00	0.04	0.41	0.13	0.04
College Graduate	38.3	2.36	0.30	0.00	0.10	1.59	0.29	0.08
By Race/Ethnicity								
White, Non-Hispanic	58.0	1.71	0.28	0.00	0.08	1.09	0.20	0.06
African-American	11.6	0.73	0.24	0.00	0.04	0.26	0.16	0.04
Hispanic	20.1	0.78	0.21	0.00	0.03	0.37	0.13	0.03
Other	10.3	1.43	0.24	0.00	0.04	0.90	0.20	0.06
By Gender								
Female	53.4	1.32	0.26	0.00	0.05	0.82	0.14	0.05
Male	46.6	1.44	0.25	0.00	0.07	0.84	0.23	0.05
By Marital Status								
Never Married	10.6	1.06	0.25	0.00	0.04	0.60	0.13	0.05
Married	55.2	1.54	0.24	0.00	0.06	0.96	0.23	0.05
Widowed	14.0	1.22	0.30	0.00	0.07	0.71	0.07	0.08
Divorced	20.1	1.22	0.27	0.00	0.06	0.66	0.17	0.06
By Age								
62 to 64	15.2	1.42	0.16	0.00	0.05	0.58	0.57	0.05
65 to 69	24.2	1.23	0.25	0.00	0.06	0.65	0.22	0.05
70 to 74	21.7	1.27	0.28	0.00	0.07	0.76	0.11	0.05
75 to 79	17.9	1.39	0.28	0.00	0.07	0.92	0.07	0.05
80 to 84	13.0	1.66	0.28	0.00	0.06	1.22	0.04	0.05
85 to 89	8.0	1.56	0.27	0.00	0.06	1.16	0.02	0.05
By SS Benefit Status								
OASI Recipient	87.6	1.39	0.28	0.00	0.06	0.88	0.12	0.06
DI Recipient	3.2	0.92	0.28	0.00	0.04	0.43	0.14	0.03
SSI Recipient	0.8	0.11	0.04	0.06	0.00	0.00	0.00	0.01
Not Receiving SS Benefits	8.4	1.53	0.03	0.00	0.04	0.54	0.87	0.05
By Per-Capita Income Quintile								
Bottom quintile	20	0.20	0.14	0.00	0.01	0.03	0.01	0.01
Second quintile	20	0.41	0.24	0.00	0.02	0.10	0.03	0.03
Third quintile	20	0.67	0.27	0.00	0.04	0.22	0.10	0.04
Fourth quintile	20	1.15	0.30	0.00	0.08	0.49	0.22	0.06
Top quintile	20	4.46	0.33	0.00	0.16	3.30	0.55	0.12

Continued

Table A9–19d. Average Per Capita Income in 2060, by Individual Characteristics and Income Source (Include Outliers)
(Income as a Percentage of the Economy-Wide Average Wage)[a]

	Percent of Individuals	Total Income[b]	Social Security Benefits	SSI Benefits	DB Pensions	Income From Financial Assets	Earnings	Imputed Rental Income
Immigration Age								
Native born	77.3	1.46	0.27	0.00	0.07	0.88	0.19	0.05
0 - 20	8.5	1.62	0.25	0.00	0.03	1.12	0.16	0.06
21 - 30	6.4	1.01	0.25	0.00	0.04	0.50	0.16	0.05
31 - 40	3.6	0.74	0.19	0.00	0.03	0.33	0.16	0.03
41 - 50	2.0	0.46	0.13	0.00	0.02	0.16	0.12	0.03
51 +	2.2	0.49	0.04	0.01	0.05	0.28	0.09	0.02

Source: The Urban Institute tabulations of MINT5.
a/ Table includes all non-institutionalized survivors including top wealth holders.
b/ Total income does not include co-resident income.

Table A9–19e. Average Net Per Capita Income and Average Tax Rate by Tax Type in 2060, by Individual Characteristics and Income Source (Include Outliers)
(Income and Tax as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
ALL	1.22	0.13	0.01	0.01	0.16	0.11
By Educational Attainment						
High School Dropout	0.34	0.02	0.00	0.00	0.03	0.08
High School Graduate	0.76	0.08	0.01	0.01	0.09	0.11
College Graduate	2.09	0.23	0.02	0.02	0.28	0.12
By Race/Ethnicity						
White, Non-Hispanic	1.51	0.17	0.02	0.01	0.20	0.12
African American	0.64	0.07	0.01	0.01	0.09	0.12
Hispanic	0.69	0.07	0.01	0.01	0.08	0.10
Other	1.29	0.12	0.01	0.01	0.14	0.10
By Gender						
Female	1.19	0.11	0.01	0.01	0.13	0.10
Male	1.26	0.15	0.02	0.02	0.18	0.12
By Marital Status						
Never Married	0.94	0.10	0.01	0.01	0.12	0.12
Married	1.37	0.14	0.01	0.02	0.17	0.11
Widowed	1.08	0.13	0.01	0.01	0.15	0.12
Divorced	1.07	0.13	0.01	0.01	0.15	0.12
By Age						
62 to 64	1.22	0.15	0.02	0.04	0.21	0.15
65 to 69	1.05	0.15	0.02	0.01	0.18	0.14
70 to 74	1.12	0.13	0.01	0.01	0.15	0.12
75 to 79	1.25	0.12	0.01	0.01	0.14	0.10
80 to 84	1.54	0.10	0.01	0.00	0.11	0.07
85 to 89	1.44	0.11	0.01	0.00	0.12	0.08
By SS Benefit Status						
OASI Recipient	1.25	0.12	0.01	0.01	0.14	0.10
DI Recipient	0.84	0.07	0.01	0.01	0.08	0.09
SSI Recipient	0.11	0.00	0.00	0.00	0.00	0.00
Not Receiving SS Benefits	1.17	0.27	0.03	0.05	0.35	0.23
By Per-Capita Income Quintile						
Bottom quintile	0.19	0.01	0.00	0.00	0.01	0.04
Second quintile	0.38	0.02	0.00	0.00	0.03	0.07
Third quintile	0.60	0.06	0.01	0.01	0.07	0.11
Fourth quintile	1.00	0.13	0.01	0.02	0.16	0.14
Top quintile	3.95	0.43	0.05	0.04	0.51	0.11

Continued

Table A9–19e. Average Net Per Capita Income and Average Tax Rate by Tax Type in 2060, by Individual Characteristics and Income Source (Include Outliers)
(Income and Tax as a Percentage of the Economy-Wide Average Wage)[a]

	Net Income	Federal Income Tax	State Income Tax	Payroll Tax	Total Tax	Average Tax Rate
By Immigration Age						
Native born	1.29	0.14	0.02	0.01	0.17	0.12
0 - 20	1.50	0.10	0.01	0.01	0.12	0.08
21 - 30	0.88	0.11	0.01	0.01	0.12	0.12
31 - 40	0.63	0.09	0.01	0.01	0.11	0.15
41 - 50	0.40	0.05	0.00	0.01	0.06	0.13
51 +	0.45	0.03	0.00	0.01	0.04	0.08

Source: The Urban Institute tabulations of MINT5.
a/ Table includes all non-institutionalized survivors including top wealth holders.
b/ Total income does not include co-resident income.

Table A9–20a. Average Family Total Income as a Percent of the Poverty Threshold in 2060, by Age and Individual Characteristics

	Age in 2060						
	62 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	ALL
ALL	14.3	12.3	12.6	13.4	15.7	14.0	13.4
By Educational Attainment							
High School Dropout	4.5	4.0	4.0	4.0	3.9	4.3	4.1
High School Graduate	9.2	7.8	7.7	8.0	8.1	8.2	8.1
College Graduate	24.9	21.2	21.5	22.7	27.3	23.2	23.1
By Race/Ethnicity							
White, Non-Hispanic	17.8	15.6	15.6	16.8	19.4	15.6	16.7
African-American	8.0	6.6	6.1	6.1	6.5	5.7	6.5
Hispanic	8.8	7.3	7.2	7.1	7.9	7.4	7.6
Other	15.5	11.6	13.3	13.6	16.7	20.4	14.3
By Gender							
Female	13.9	11.7	12.4	12.4	15.0	13.1	12.9
Male	14.7	12.9	12.7	14.5	16.5	15.4	14.0
By Marital Status							
Never Married	7.5	6.4	6.4	8.0	10.1	12.2	7.7
Married	17.6	15.4	15.9	18.1	22.0	20.8	17.4
Widowed	8.3	7.3	8.0	8.7	10.4	9.8	8.9
Divorced	9.1	7.8	8.3	8.6	10.2	9.9	8.8
By SS Benefit Status							
OASI Recipient	13.0	12.4	12.9	13.7	16.0	14.2	13.5
DI Recipient	9.4	8.9	N/A	N/A	N/A	N/A	9.2
SSI Recipient	1.4	2.0	1.9	2.2	2.0	2.1	2.0
Not Receiving SS Benefits	18.5	14.5	5.0	4.9	6.7	7.9	15.2
By Per-Capita Income Quintile							
Bottom quintile	2.3	2.4	2.5	2.4	2.5	2.4	2.4
Second quintile	4.5	4.1	3.9	3.8	3.9	3.9	4.0
Third quintile	7.4	6.3	6.1	6.0	6.2	6.1	6.4
Fourth quintile	12.9	10.5	10.2	10.3	10.8	10.7	10.8
Top quintile	42.3	39.2	40.4	44.0	55.8	45.9	43.5
Immigration Age							
Native born	15.0	12.9	13.2	14.4	16.9	14.1	15.0
0 - 20	15.7	13.1	14.8	15.5	19.8	22.6	15.7
21 - 30	10.8	9.3	9.4	8.2	8.5	11.6	10.8
31 - 40	6.8	7.9	6.6	7.3	7.0	8.9	6.8
41 - 50	6.6	5.2	4.8	4.7	4.4	4.7	6.6
51 +	5.6	5.1	5.3	5.7	6.6	8.0	5.6

Source: The Urban Institute tabulations of MINT5.
N/A indicates not applicable. All DI beneficiaries convert to worker benefits at the normal retirement age.

Table A9–20b. Percent of Individuals in Poverty in 2060, by Age and Individual Characteristics

	Age in 2060						
	62 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	ALL
ALL	3.6%	3.0%	2.5%	2.1%	2.3%	2.0%	2.6%
By Educational Attainment							
High School Dropout	12.4	10.1	10.3	8.8	10.8	9.5	10.4
High School Graduate	2.8	2.6	2.0	1.9	2.2	2.0	2.3
College Graduate	1.6	1.1	0.8	0.8	0.7	0.8	1.0
By Race/Ethnicity							
White, Non-Hispanic	1.8	1.4	1.0	0.9	1.0	1.0	1.2
African-American	5.8	5.1	3.5	2.8	3.6	3.6	4.2
Hispanic	5.6	5.0	5.3	3.7	4.7	4.4	4.9
Other	5.6	4.8	4.6	5.2	4.2	4.0	4.8
By Gender/Marital Status							
All Females	3.6	3.3	2.7	2.4	2.7	2.5	2.9
Never Married Female	10.6	9.3	8.8	7.5	10.4	6.7	9.0
Married Female	2.1	1.7	1.8	2.0	0.9	1.4	1.7
Widowed Female	5.0	4.5	2.5	2.0	2.9	2.3	2.8
Divorced Female	3.8	3.6	1.8	1.2	1.8	2.3	2.4
All Males	3.6	2.7	2.2	1.8	1.7	1.2	2.4
Never Married Male	5.5	4.8	4.6	4.0	4.2	0.9	4.5
Married Male	2.8	1.8	1.9	1.7	1.4	1.6	1.9
Widowed Male	6.8	12.7	5.6	2.4	3.1	1.2	4.6
Divorced Male	4.9	2.5	1.2	0.6	0.9	0.5	1.9
By SS Benefit Status							
OASI Recipient	1.3	1.1	1.2	1.0	1.3	1.2	1.2
DI Recipient	2.4	1.8	N/A	N/A	N/A	N/A	2.1
SSI Recipient	82.2	54.7	52.0	30.9	31.4	42.0	48.6
Not Receiving SS Benefit	6.5	18.6	35.3	32.3	30.9	24.2	14.0
Immigration Age							
Native born	2.6	2.2	1.6	1.0	1.0	0.7	1.6
0 - 20	3.7	3.1	2.6	3.6	5.3	2.9	3.5
21 - 30	3.9	2.2	0.8	0.8	0.7	2.1	1.7
31 - 40	14.2	7.8	9.0	7.4	4.9	9.1	8.6
41 - 50	13.0	11.6	8.6	7.6	10.0	6.7	9.8
51 +	18.8	22.6	20.9	20.9	22.9	20.3	21.3

Source: The Urban Institute tabulations of MINT5.

N/A indicates not applicable. All DI beneficiaries convert to worker benefits at the normal retirement age.