RESEARCH REPORT

How Might Millennials Fare in Retirement?

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Acknowledgments

Executive Summary

The financial outlook for future generations of retirees is uncertain. The scheduled increase in Social Security's full retirement age to 67 will reduce benefits for future retirees, and the program's long-run financing gap could lead to further cuts. Other ominous signs include the erosion of traditional defined benefit pensions, stagnating earnings among lower- and moderate-income men, growing indebtedness, and rising out-of-pocket costs for medical care and long-term services and supports for people who need help with everyday activities. Other trends are more promising, such as the increase in women's earnings and the growth in employment at older ages.

In this report, we use the Urban Institute's Dynamic Simulation of Income Model 4 (DYNASIM4) to assess retirement prospects for future generations, with a special focus on early millennials born between 1980 and 1989. The model combines data from multiple high-quality sources to project how various demographic, economic, and social trends might play out over the next 40 years to shape future retirement incomes.

We project inflation-adjusted per capita family income and the share of adults with inadequate income, both measured at age 70, and compare outcomes across generations. The analysis focuses on age-70 income because most people have stopped working by then. Our income measure includes Social Security payments, earnings, defined benefit pension benefits, Supplemental Security Income, and other government cash benefits, plus the income stream that retirees would receive if they annuitize 80 percent of their retirement accounts and other financial assets under actuarially fair terms. Excluding the annuitized value of financial assets from our income measure would understate the financial resources available to later generations of retirees, because many employers have shifted from offering workers defined benefit pensions that provide a steady income stream to offering defined contribution retirement plans, such as 401(k)s, for which balances are rarely annuitized. We divide family income by two for married adults to create a per capita measure.

Our baseline projections assume that Social Security will pay all future retirees the full benefits they are scheduled to receive under current law. However, Social Security faces a long-term financing gap, and the program's actuaries project that unless policymakers shore up Social Security's finances its trust funds likely will run out within the next 15 years, before people born after 1964 reach age 70. After the trust funds are depleted, the actuaries project that Social Security will be able to pay only about 75 percent of scheduled benefits. To capture this possibility, we also consider alternative scenarios that cut future Social Security benefits.

Retirement Income Projections

We project that per capita family income at age 70 will increase over time. Average age-70 income is projected to reach $80,300 for early millennials in 2021 inflation-adjusted dollars, 35 percent higher than the $59,400 average for preboomers born between 1937 and 1945 and 23 percent higher than the $65,400 for late boomers born between 1955 and 1964.

Projected age-70 incomes are higher for men, non-Hispanic white adults, married adults, and college graduates than for women, people of color, single adults, and people who did not attend college. We project that many of these differentials will narrow over the coming decades as projected retirement incomes grow rapidly for people of color and women, largely reflecting lifetime earnings gains for these groups.

However, projected age-70 income differentials by lifetime earnings will increase over time. For people in the top fifth of the lifetime earnings distribution, median age-70 income will be 51 percent higher among early millennials than preboomers. Median age-70 income will increase only 22 percent for people in the middle fifth of the lifetime earnings distribution and only 31 percent for people in the bottom fifth. These differentials largely reflect ongoing growth in earnings inequality, as earnings have increased more rapidly near the top of the earnings distribution than in the middle or near the bottom.

Retirement Income Adequacy

We classify age-70 income as inadequate if it (a) falls below 25 percent of the annual national average wage, a level we deem necessary to cover basic needs, or (b) replaces less than 75 percent of annual preretirement earnings, a commonly assumed minimum amount needed to maintain preretirement living standards. However, we classify income that equals or exceeds 100 percent of the annual national average wage as adequate, regardless of the replacement rate. Because the share of preretirement earnings needed to ensure that retirees can maintain their preretirement living standards is uncertain, we also consider two alternative replacement rate thresholds: 60 percent and 90 percent.

We project that 38 percent of early millennials born in the 1980s will have inadequate age-70 income, compared with 28 percent of preboomers and 30 percent of late boomers (figure ES.1). The share of older adults with inadequate income increases over time because retirement incomes are growing more slowly than labor market earnings.

Projected Percentage of Adults with Inadequate Income at Age 70, by Birth Cohort

Source: Authors' estimates from DYNASIM4, runid999.
Notes: We classify adults as having inadequate income if their age-70 income falls below 25 percent of the annual average national wage or if they are unable to replace at least 75 percent of the average amount they earned from ages 50 to 59 (unless their age-70 income equals or exceeds the annual average national wage). The analysis assumes that scheduled Social Security benefits are paid in full.

Retirement security is projected to be especially precarious for early millennials of color, those with little education and limited lifetime earnings, and those who are not married. We project that among early millennials, 53 percent of Hispanic adults, 42 percent of Black adults, 66 percent of people who did not complete high school, 45 percent of people with no more than a high school diploma, and 50 percent of people who never marry will have inadequate income to meet basic needs at age 70 or maintain their preretirement living standards.

Our projections of income adequacy depend on the share of earnings that we assume retirees need to replace to maintain their preretirement living standards, which is uncertain. When we reduce the assumed required replacement rate from 75 to 60 percent, our projection of the share of early millennials with inadequate retirement income falls from 38 to 29 percent. When we increase the required replacement rate to 90 percent, the share with inadequate income rises to 46 percent. Under all our replacement rate assumptions, the projected share of financially insecure retirees is substantially higher for the early millennial cohort than for the preboomer cohort.

Impact of Social Security's Financing Gap

We project that the share of early millennials with age-70 income insufficient to meet basic needs or maintain their preretirement living standards, assuming a 75 percent replacement rate standard, will increase to 49 percent if policymakers fail to boost Social Security's revenue and implement across-the-board benefit cuts when the trust funds run out, instead of continuing to pay full scheduled benefits. If policymakers fail to address Social Security's financing problems, we project that 53 percent of Black adults in the early millennial cohort, 62 percent of Hispanic adults, 75 percent of adults who did not complete high school, 57 percent of adults with only a high school diploma, and 74 percent of adults in the bottom fifth of the lifetime earnings distribution will receive inadequate retirement income.

Conclusions

The retirement outlook for early millennials is concerning, but retirement is still more than two decades away for Americans born in the 1980s, and their financial security in old age will hinge on several factors that have yet to play out. The future course of stock market returns, interest rates, housing prices, and inflation will affect future retirement incomes. How long people work, which depends partly on how health trajectories evolve, and how rapidly future wages grow will also help determine financial security for future retirees. Rising out-of-pocket spending on health care and long-term services and supports poses an additional threat to future retirees' financial security. DYNASIM4 now projects out-of-pocket and third-party spending on medical care and long-term services and supports, and future analyses will incorporate these estimates into studies of retirement income adequacy.

Although the current retirement outlook may be grim, sound policy reforms could place millennials on a more secure retirement path. Shoring up Social Security's finances would forestall significant benefit cuts and prevent older adults from becoming even more financially fragile. Adding a meaningful minimum benefit to Social Security and making the benefit formula more progressive would increase payments to low-income retirees. Relaxing eligibility rules for Supplemental Security Income, which provides limited cash benefits to older adults and people with disabilities with very little financial resources, and increasing program payments so that they cover basic needs would also help the most vulnerable retirees. Other options to improve retirement security include creating or strengthening other types of social insurance to support people who develop work disabilities, need help with basic personal care, or experience catastrophic medical expenses; requiring employers that offer retirement plans to automatically enroll workers into those plans; and requiring employers that do not offer retirement plans to automatically deposit a portion of workers' pay into individual retirement accounts.

How Might Millennials Fare in Retirement?

Changes in retirement programs and ongoing economic, social, and health care trends raise worrisome questions about the future financial security of American retirees. The increase in Social Security's full retirement age will reduce benefits for future retirees, and the system's long-term financing problems could lead to additional benefit cuts within the next 15 years unless policymakers address the funding shortfall. Private-sector employers have moved away from defined benefit (DB) pensions to defined contribution retirement plans over the past four decades, shifting much of the responsibility for retirement saving from employers to employees and reducing future retirement benefits for many workers (Morrissey 2016; Munnell 2014). Falling labor supply among middle-aged men and stagnant earnings for lower- and moderate-income men threaten future retirement security (Council of Economic Advisers 2016; Mishel 2015) because Social Security benefits and the capacity to save for retirement depend on lifetime earnings. Future retirees will need more money than earlier generations as health care costs and indebtedness rise (Hatfield et al. 2018; Karamcheva 2013), and retirement savings must last longer as retirees' life expectancy grows.

The financial crisis, Great Recession, and collapse of the housing market in the late 2000s led to unusually high and long-lasting unemployment and wiped out trillions of dollars of household wealth (Grusky, Western, and Wimer 2011; Smeeding 2012; Wolff 2016). The COVID-19 pandemic upended the labor market, leading to a spike in the unemployment rate and prompting many older workers to exit the labor force (Davis 2022; Quinby, Rutledge, and Wettstein 2021), although generous relief payments from the federal government prevented many families from falling into poverty (Wheaton, Giannarelli, and Dehry 2021). Lost earnings and wealth can derail retirement savings. The Great Recession hit younger workers especially hard, and they were more likely to lose their jobs than older workers (Farber 2015). The economic consequences of a layoff can persist for decades, leading to lower earnings on future jobs (Davis and von Wachter 2011). Moreover, people who graduate from college during a recession often have trouble finding a good job, suppressing their earnings for years (Oreopoulos, von Wachter, and Heisz 2012). Consequently, the Great Recession and pandemic could significantly disrupt retirement savings for people born in the late 1970s and early 1980s, who were in their 20s at the time. Yet, relatively few younger people own a home or hold much wealth, so the collapse in housing and equity prices in the wake of the financial crisis probably did not affect them as much as it affected older people.

Other economic and demographic trends, however, are more encouraging. Women who retire in coming decades will have worked in paid employment longer and earned more than previous generations (Goldin and Mitchell 2017), thus accumulating more Social Security benefits and retirement savings under their own names. Increases in the national average wage raise Social Security payments for all beneficiaries, even for those with relatively low earnings. Widows are especially likely to be impoverished (Sevak, Weir, and Willis 2003/2004), but the shrinking gender gap in life expectancy will reduce future widowhood rates (Trovato and Heyen 2006). In addition, people are working longer than previous generations (Johnson and Wang 2017), increasing their lifetime earnings, future Social Security benefits, and capacity to save for retirement.

Given these conflicting trends, it is not surprising that little consensus exists about how future generations will likely fare in retirement. Some studies warn of a looming retirement crisis, predicting that in coming decades many older adults will live in or near poverty, and a majority will be unable to maintain their preretirement living standards (Munnell, Hou, and Webb 2014; Rhee 2013). Other studies are more sanguine, concluding that most people are saving adequately and that economic growth will boost future retirement incomes (Biggs and Schieber 2014; Butrica, Smith, and Iams 2012; Scholz, Seshadri, and Khitatrakun 2006).

Here we use household survey data from the past five decades and a dynamic microsimulation model to assess retirement prospects for future generations, with a special focus on millennials. Because retirement outcomes depend on how much people earned and saved when they were younger, much of our analysis compares trends in employment, earnings, and wealth during working ages across cohorts. We project future incomes to age 70, accounting for working-age outcomes that have already occurred. The analysis compares outcomes for adults born between 1980 and 1989, labeled early millennials, with outcomes for earlier cohorts. We project inflation-adjusted per capita family income levels and the share of adults with inadequate income, both measured at age 70. The analysis classifies age-70 income as inadequate if it (a) falls below 25 percent of the annual national average wage, a level we deem necessary to cover basic needs, or (b) replaces less than 75 percent of annual preretirement earnings, a commonly assumed minimum amount needed to maintain preretirement living standards. However, we classify income that equals or exceeds 100 percent of the annual national average wage as adequate, regardless of the replacement rate. Because the share of preretirement earnings needed to ensure that retirees can maintain their preretirement livings standards is uncertain, we also consider two alternative replacement rate thresholds: 60 percent and 90 percent.

Our baseline projections assume that Social Security will pay all benefits scheduled under current law indefinitely. However, the program faces a long-term financial shortfall, and Social Security's

trustees project that under current benefit and revenue schedules the Social Security trust funds will run out before early millennials reach age 70, so they may receive less than their full scheduled benefits. To capture this possibility, we also model two scenarios that cut future Social Security benefits.

Our results show that inflation-adjusted age-70 incomes are projected to increase over time, yet the share of retirees with insufficient income to meet basic needs or maintain their preretirement income standards is also projected to grow. We estimate that if scheduled Social Security payments are fully paid, 38 percent of early millennials will have inadequate income at age 70, based on a 75 percent replacement rate adequacy threshold, compared with 28 percent of adults born between 1937 and 1945. Inadequate retirement incomes are especially common among certain groups of early millennials, with more than half of Hispanic adults and adults who did not complete high school projected to have inadequate age-70 income.[1] Retirement security will become even more precarious if policymakers do not increase Social Security's revenues and instead implement across-the-board benefit cuts when the program's trust funds run out in the mid-2030s. We project that nearly half (49 percent) of early millennials will have inadequate income at age 70 if policymakers fail to shore up Social Security's finances.

Data and Methods

To assess retirement prospects for people born in the 1980s, we compare employment, earnings, pension coverage, and household wealth at younger ages for several generations using household survey data. We also compare projections of retirement incomes for different birth cohorts generated by our dynamic microsimulation model. The analysis generates outcomes at the individual level, and we report all financial amounts in constant 2021 dollars, adjusted by the change in the consumer price index.

Measuring Recent Economic Trends before Retirement

We use household survey data spanning several decades from the Current Population Survey's (CPS's) Annual Social and Economic Supplement (ASEC) and the Survey of Consumer Finances (SCF) to examine long-term trends in demographic and economic outcomes. Although these surveys do not follow the same people or households over time, we create synthetic birth cohorts by combining information from interviews completed in various years by respondents born in the same period. We then compare aggregate outcomes across cohorts at various ages. When comparing outcomes across

cohorts, however, we must recognize the sometimes-substantial differences in macroeconomic conditions that confront each generation at particular ages, such as the unemployment rate and average asset prices. For example, high unemployment rates and slow wage growth during and immediately after the Great Recession and the collapse in housing and equity values in 2007 and 2008 complicate cohort analysis.

The CPS, conducted by the US Census Bureau for the Bureau of Labor Statistics, is a monthly survey of about 60,000 households that collects demographic and employment data. Every March, the ASEC collects additional information from CPS respondents on income received during the previous year. With ASEC data for every five years from 1966 to 2021, we create synthetic five-year cohorts for the birth years 1931 to 1935 through 1981 to 1985. Members of our youngest cohort were ages 36 to 40 in 2021, and members of our oldest cohort were ages 31 to 35 in 1966 and ages 86 to 90 in 2021.[2]

We use ASEC data to examine trends in educational attainment, labor force participation, full-time employment, marriage rates, homeownership, and, for full-time workers, median earnings. Full-time employment and earnings in the ASEC refer to outcomes in the previous year, so our cohorts are one year younger for those comparisons. We define full-time employment as working at least 35 hours per week. The ASEC first collected data on homeownership in 1976, so we do not have information on homeownership at younger ages for earlier birth cohorts. We classify respondents who live in an owner-occupied housing unit as not owning a home if they are not the household head or the spouse or unmarried partner of the household head. The analysis generally examines outcomes separately for men and women. Results are reported graphically in the body of the report, but the figures exclude certain cohorts to improve readability. Appendix tables report results for all birth cohorts.

We use data from the SCF to examine trends in household wealth levels. The SCF is a national, cross-sectional survey of US families that began in 1983. Sponsored by the Federal Reserve Board and conducted by NORC at the University of Chicago since 1992, the SCF is widely regarded as the premier data source on household wealth (Czajka, Jacobson, and Cody 2003). Every three years, it interviews between 4,500 and 6,500 families covering all economic groups. Sampling began with a geographically based random sample, which was then supplemented with a sample of disproportionally wealthy families to reflect ownership of certain assets. Our sample includes only household heads and their spouses, if married. For married people, we divide reported household wealth by two. Following the approach used with the ASEC, we group respondents into six-year birth cohorts—from the 1926 to 1931 cohort through the 1980 to 1985 cohort—and measure their wealth every six years, in 1989, 1995, 2001, 2007, 2013, and 2019. (The year 2019 was the most recent year available when we conducted our analysis.) This approach allows us to compare household wealth at the same age for

people born in different years. Members of our youngest SCF cohort were ages 34 to 39 in 2019, and members of our oldest cohort were ages 58 to 63 in 1989 and ages 88 to 93 in 2019.

Because our SCF analysis includes only household heads and their spouses, it excludes young adults still living with their parents. Because young adults are leaving home and starting their own households later than previous generations (Furlong 2016; Lee and Painter 2013), this exclusion might bias our wealth estimates upwards. Our SCF sample of younger adults might include a disproportionate share of relatively successful people or people from higher-income families who can afford to start their own households.

The financial measures we examine are total net worth, retirement account balances, financial wealth (including retirement account balances), home equity, and debt. Retirement account balances include the value of individual retirement accounts (IRAs), Keogh accounts, and employer-sponsored retirement accounts, such as 401(k) plans. Financial wealth consists of retirement account balances plus financial assets held outside of retirement accounts, including the value of bank accounts, certificates of deposit, annuities, trusts, stocks, bonds, mutual funds, and the cash value of life insurance. We measure home equity as the value of a primary residence minus any outstanding housing debt, such as outstanding mortgages and home equity loans. Debt includes outstanding housing debt, installment loans, credit card balances, and any other debt held by a household. Total net worth equals the sum of financial wealth, home equity, and other nonfinancial wealth (which includes the value of vehicles, business interests, real estate except for a primary home, and other real assets) minus nonhousing debt.

Projecting Retirement Outcomes

To project future retirement income, we use the Urban Institute's Dynamic Simulation of Income Model (DYNASIM4), a dynamic microsimulation model designed to analyze the long-run distributional consequences of retirement and aging issues. The model starts with a representative sample of individuals and families from the 2004 and 2008 Surveys of Income and Program Participation and ages them year by year, simulating key demographic, economic, and health events. For example, DYNASIM4 projects that each year, some people in the sample get married, have a child, or find a job. The model projects that other people become divorced or widowed, stop working, begin collecting Social Security, become disabled, or die. These transitions are based on probabilities generated by carefully calibrated equations estimated from nationally representative household survey data. The equations account for differences by sex, education, earnings, and other characteristics in the likelihood of various experiences. Other equations in DYNASIM4 project annual earnings, savings, and home values. The

model uses program rules, combined with projections of lifetime earnings, disability status, and household income and wealth, to project Social Security retirement and disability benefits and Medicaid coverage. For consistency with Social Security's projections about system finances, we generally use the same assumptions as the Social Security and Medicare trustees.[3]

Using DYNASIM4, we project outcomes for six birth cohorts: 1937 to 1945 (preboomers), 1946 to 1954 (early boomers), 1955 to 1964 (late boomers), 1965 to 1972 (early gen X), 1973 to 1979 (late gen X), and 1980 to 1989 (early millennials). The analysis compares inflation-adjusted per capita family income and the share of adults with inadequate income, both measured at age 70. We focus on outcomes at age 70 because most people have stopped working by then. Our income measure includes Social Security payments, earnings, DB pension benefits, Supplemental Security Income, and other government cash benefits, plus the income stream that retirees would receive if they annuitize 80 percent of their retirement accounts and other financial assets under actuarially fair terms. Excluding the annuitized value of financial assets from our income measure would understate the financial resources available to later generations of retirees, because many employers have shifted from offering workers DB pensions that provide a steady income stream to offering defined contribution retirement plans for which balances are rarely annuitized (Lockwood 2012; Smith, Soto and Penner 2009). We divide family income by two for married adults to create a per capita measure.

The analysis classifies age-70 income as inadequate if it (a) is less than 25 percent of the annual national average wage, a level we deem necessary to cover basic needs, or (b) replaces less than 75 percent of annual preretirement earnings received from ages 50 to 59, a commonly assumed minimum amount needed to maintain preretirement living standards (US Government Accountability Office 2016). However, if income equals or exceeds the annual national average wage that year we classify income as adequate regardless of the replacement rate. The replacement rate needed to maintain preretirement living standards is commonly thought to be less than 100 percent because retirees do not generally pay payroll taxes or save for retirement, and expenses usually fall after children leave the home. How much income retirees actually need is uncertain, however, and low-income people who do not save much for retirement or pay much taxes when they are working may need more than 75 percent of their preretirement earnings to maintain their living standards (Benz 2012). To test the sensitivity of our adequacy estimates to our replacement rate threshold, we also consider two alternative replacement rates: 60 percent and 90 percent.

Social Security's long-term financing gap complicates our income projections. The Social Security trustees' 2022 intermediate projections indicate that the program will be able to finance full benefits under existing revenue forecasts only until 2035 (Board of Trustees, Federal Old-Age and Survivors

Insurance and Federal Disability Insurance Trust Funds 2022), 15 years before the oldest early millennials in our sample reach age 70. Unless Social Security receives additional revenue, the trustees project that the program will be able to pay only about 75 percent of scheduled benefits in later years. Our analysis considers three scenarios about future Social Security payments. We focus on the scheduled benefits scenario, which assumes policymakers will replenish the program's revenue so that retirees receive the full payments provided under the existing benefit formula. Because policymakers' response to Social Security's financial problems is uncertain, we also consider two alternative scenarios. The payable benefits scenario assumes that the program does not receive any additional funding and benefits are cut across the board to close the financing gap once Social Security's trust funds are depleted. The balanced benefits scenario, which may be more realistic, assumes that Congress implements a balanced reform that closes half the financing shortfall through benefit cuts and half through revenue increases.[4]

Results

We first report cohort comparisons for preretirement outcomes based on historical data from the ASEC and SCF. We then report retirement income projections from DYNASIM4.

Education

Men's educational attainment surged with the early baby boomers and then tapered off for those born in the late 1950s and early 1960s. Among men ages 31 to 35, 30 percent of those born between 1946 and 1950 had a four-year college degree, compared with 20 percent of those born 10 years earlier and 25 percent for those born 10 years later (figure 1). The Vietnam War draft, which men could avoid with an educational deferment, appears responsible for the surge in college attendance for men in the 1946 to 1950 birth cohort, who were 20 years old in the late 1960s (Card and Lemieux 2001). For men born between 1966 and 1980, the share with a four-year college degree fluctuated between 30 and 32 percent. However, the share increased to 40 percent for those born between 1986 and 1990, who were in their early 20s during and immediately after the Great Recession and likely pursued higher education because employment prospects were bleak (Mordechay 2017). It remains to be seen whether the recent educational surge for men will persist.

FIGURE 1

Percentage of Adults Ages 31 to 35 with a Four-Year College Degree, by Gender and Birth Cohort

■ Men ■ Women

Percent

Birth cohort
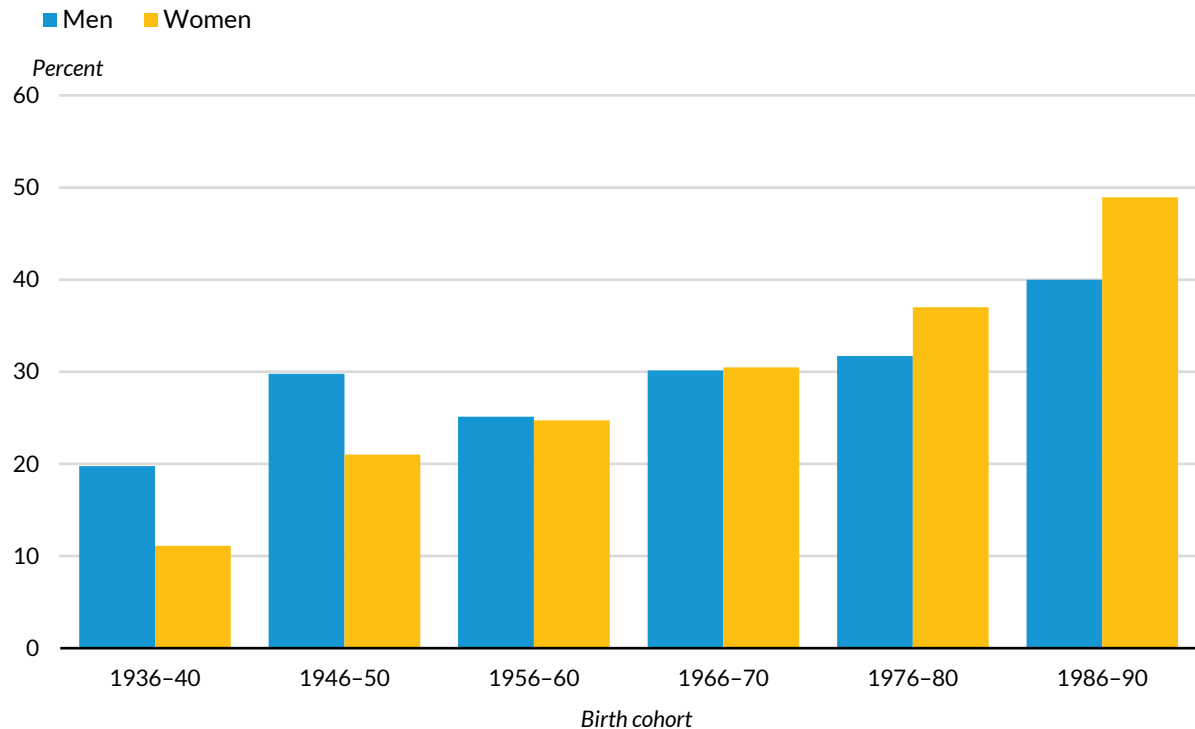
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Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: Table A.1 provides additional data.

Educational attainment for women has improved steadily over the past five decades. The share of women ages 31 to 35 with a four-year college degree increased from 11 percent for those born between 1936 and 1940 to 21 percent for those born between 1946 and 1950 to 37 percent for those born between 1976 and 1980. This trend accelerated among millennials, with 49 percent of women born between 1986 and 1990 having completed college by ages 31 to 35. Since the 1966 to 1970 birth cohort, women have been more likely than men to hold a four-year college degree. Millennials' high level of educational attainment bodes well for their future earnings and retirement security.

Labor Force Participation

Millennial men were less likely to participate in the labor force in their 20s and early 30s than previous cohorts (figure 2). At ages 26 to 30, 89 percent of men born between 1981 and 1985 participated in the labor force, compared with 92 percent in the 1971 to 1975 birth cohort and 96 percent in the 1941 to 1945 cohort. The low participation rates for millennials may simply reflect the high unemployment

rates that existed early in their careers and discouraged them from looking for work, or they may have been related to millennials' high college attendance rates (which also may have resulted from the poor job market). Millennial men's participation rates now appear to be catching up to those of earlier recent cohorts; at ages 36 to 40, men born between 1981 and 1985 were just about as likely to participate in the labor force as those born 10 years earlier. However, men born in the early 1970s were less likely to participate in the labor force than earlier cohorts, so the fact that millennial men are catching up to them may not be particularly encouraging.
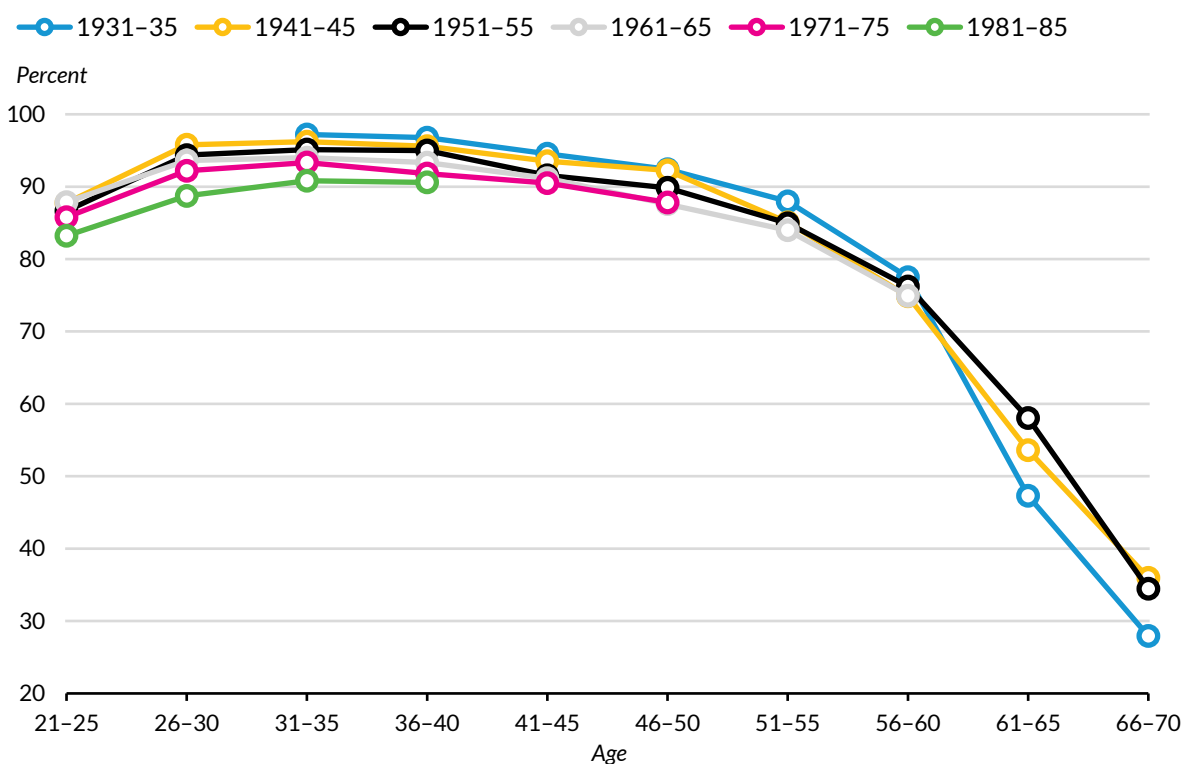
Men's Labor Force Participation Rates, by Age and Birth Cohort

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Notes: The labor force participation rate is the share of the civilian noninstitutionalized population that is working or looking for work. The vertical axis does not begin at zero. Table A.2 provides additional data.

A more worrisome trend for future retirement security is the long-term decline in labor supply among men in their 40s and 50s. At ages 41 to 45, for example, male labor force participation rates fell from 94 percent for the 1941 to 1945 birth cohort to 90 percent for the 1971 to 1975 birth cohort. This decline has been concentrated among men with no more than a high school education, perhaps because technological change and increased globalization reduced employer demand for low- and middle-skilled

workers (Aaronson et al. 2014; Beaudry, Green, and Sand 2016; Council of Economic Advisers 2016; Juhn et al. 1991; Juhn and Potter 2006). Rising receipt of Social Security Disability Insurance benefits and the growing opioid epidemic may also affect the growth of male labor force dropouts (Autor et al. 2016; Autor and Duggan 2003; Bound and Burkhauser 1999; French and Song 2014; Krueger 2017). As average educational attainment rises, the increasing selectivity of those who fail to complete high school may also contribute to growing educational disparities in employment.

An encouraging sign for retirement security is the recent increase in labor force participation among older men. Men born between 1951 and 1955 were 11 percentage points more likely to participate in the labor force at ages 61 to 65 than those born 20 years earlier. This recent surge reflects higher educational levels among older adults, changes in Social Security rules that increased work incentives, and erosion in DB pension and retiree health insurance coverage from private-sector employers (Friedberg and Webb 2005; Gustman and Steinmeier 2015; Johnson, Davidoff, and Perese 2003; Mermin, Johnson, and Murphy 2007; Song and Manchester 2007).

Working longer can significantly improve the lives of older adults, especially if workers delay Social Security benefit receipt until they exit the labor force. Extending the work life and delaying retirement benefit take-up can bolster financial security at older ages (Maestas and Zissimopoulos 2010), because adults who work longer can receive higher monthly Social Security benefits, accumulate more employer-sponsored pensions, save part of their additional earnings, and shrink the period over which their retirement savings are spread. Working longer might also improve health and happiness at older ages by keeping people physically and mentally active, allowing them to maintain social networks, and giving purpose to their lives (Calvo 2006). To date, however, employment gains after age 65 have been concentrated among college graduates (Johnson and Wang 2017).

Millennial women's labor force participation rates have not fallen as far behind the participation rates of previous cohorts as they have for their male counterparts (figure 3). At ages 26 to 30, female participation rates were 73 percent for the 1981 to 1985 cohort, compared with 76 percent for the 1971 to 1975 cohort. Although the Great Recession appears to have reduced millennial women's labor force participation rates, the downward pressure created by the weak economy was somewhat offset by the long-term generational increase in women's labor supply. Among women ages 31 to 35, for example, those in the 1981 to 1985 cohort were more likely to participate in the labor force than women born before 1956. As other studies have noted, however, generational gains in women's labor force participation have slowed over the past two decades (Blau and Kahn 2007). Across generations, female labor supply tends to dip when women move through their 30s, as they work less when raising children, but no evidence exists that over the past two decades women have become more likely to

leave the labor force to raise children (Goldin and Mitchell 2017). Women, like men, are also lengthening their careers, working more at older ages than earlier generations (Goldin and Katz 2018).
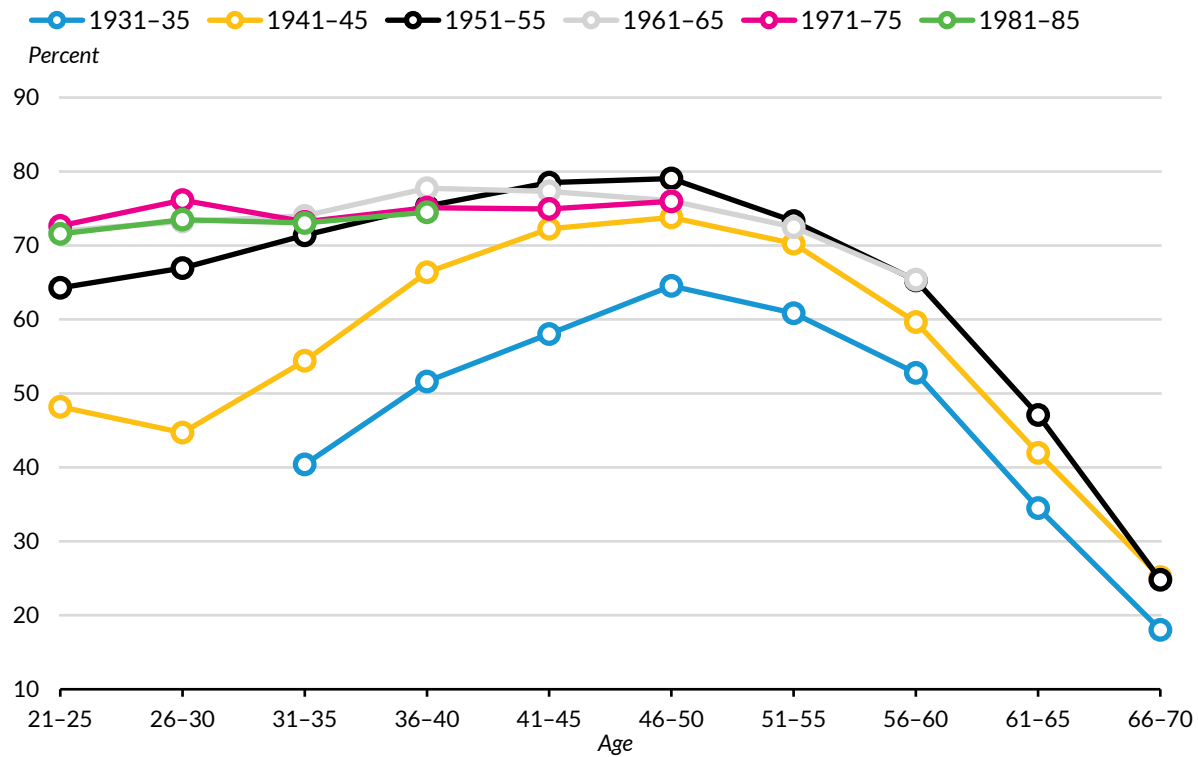
Women's Labor Force Participation Rates, by Age and Birth Cohort

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Notes: The labor force participation rate is the share of the civilian noninstitutionalized population that is working or looking for work. The vertical axis does not begin at zero. Table A.3 provides additional data.

Full-Time Employment

The percentage of young men working full time has fallen sharply over the past decade (figure 4). At ages 25 to 29, 69 percent of men in the 1981 to 1985 birth cohort were employed full time, down 13 percentage points relative to those born 10 years earlier and down 19 percentage points relative to those born 40 years earlier. Full-time employment has also been slowly declining in middle age, following the pattern observed for men's labor force participation. At ages 45 to 49, men born between 1971 and 1975 were 6 percentage points less likely to work full time than men born between 1951 and 1955. However, full-time employment rates at older ages (after age 60) have risen over the past two decades.

FIGURE 4

Men's Full-Time Employment Rates, by Age and Birth Cohort
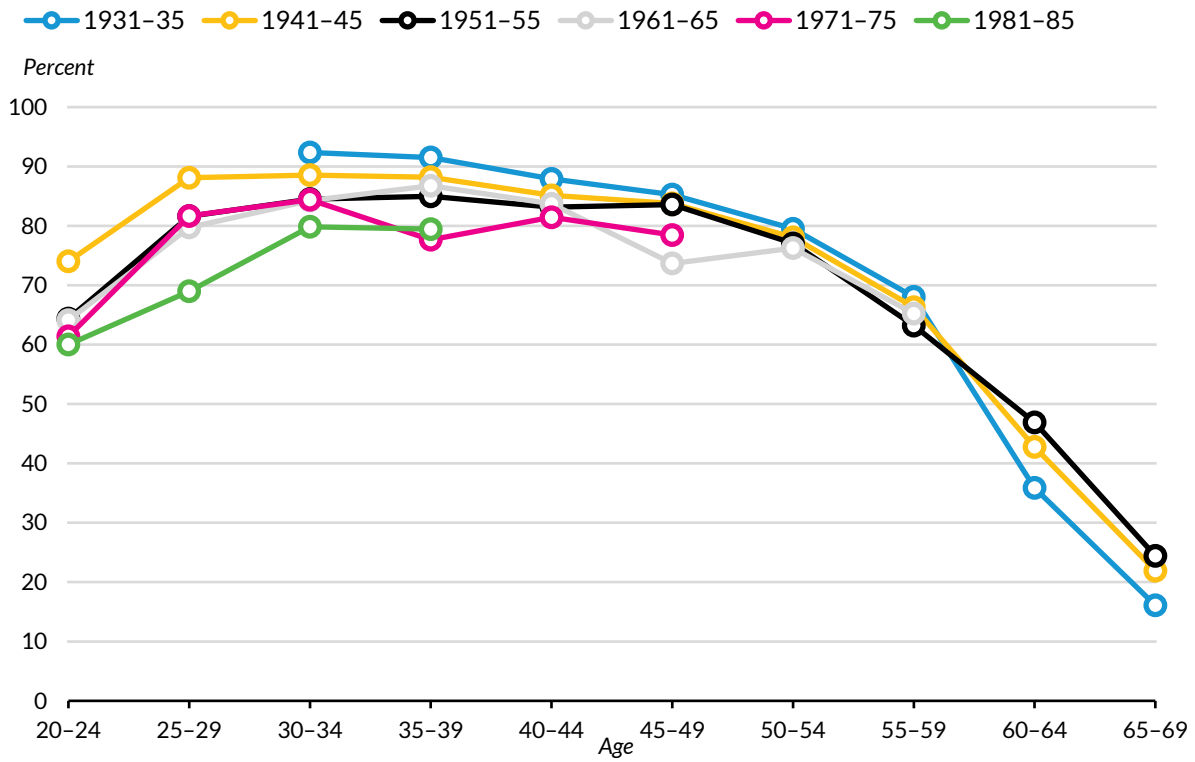
Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Notes: The figure shows the percentage of civilian noninstitutionalized men working at least 35 hours per week. The vertical axis does not begin at zero. Table A.4 provides additional data.

Full-time employment rates for women in their early 30s grew steadily for 30 years, from those born in the first half of the 1930s through those born in the second half of the 1960s (figure 5). Since then, women's full-time employment rates have generally stabilized at about 55 percent. So far, full-time employment rates for millennial women are similar to full-time employment rates for recent earlier cohorts and higher than the rates for cohorts born before 1955. (Full-time employment rates at ages 35 to 39 fell in 2011, when the unemployment rate was high, for the 1971 to 1975 birth cohort.) As with older men, full-time employment for older women has increased over the past 20 years.

FIGURE 5
Women's Full-Time Employment Rates, by Age and Birth Cohort

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Notes: The figure shows the percentage of civilian noninstitutionalized women working at least 35 hours per week. Table A.5 provides additional data.

Earnings

Although millennial men have generally earned less than men born 30 or more years earlier, their earnings so far have been roughly comparable with those in recent cohorts (figure 6). Among men ages 25 to 29 employed full time, median annual earnings were $44,700 (in inflation-adjusted 2021 dollars) for the 1981 to 1985 birth cohort, 23 percent lower than the median for the 1941 to 1945 cohort but only 5 percent lower than the median for the 1971 to 1975 cohort. As millennial men moved through their 30s, however, they closed and even eliminated the earnings gap. At ages 35 to 39, median earnings reached $65,400 for full-time male workers born between 1981 and 1985, 5 percent more than the median for their counterparts born 30 years earlier and only 2 percent less than the median for their counterparts born 40 years earlier.

FIGURE 6
Median Earnings for Full-Time Male Workers, by Age and Birth Cohort
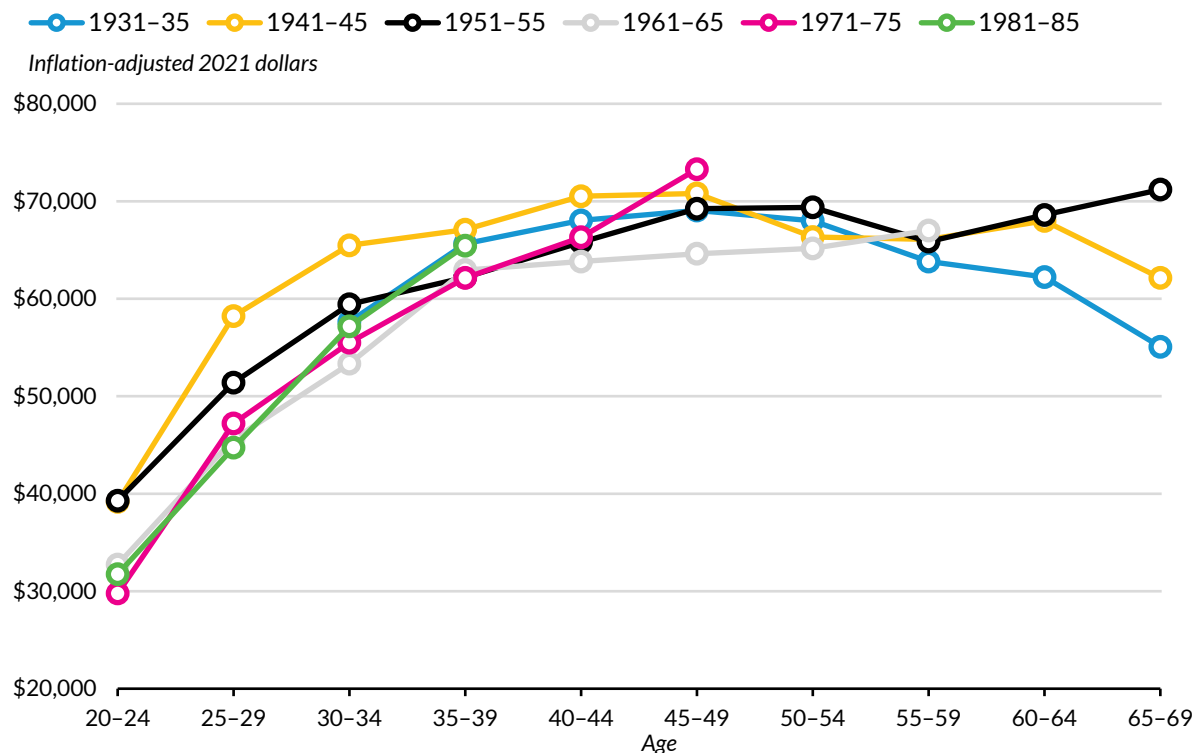
Inflation-adjusted 2021 dollars

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
**Notes:** The analysis defines full-time employment as 35 or more work hours per week. The vertical axis does not begin at zero.
Table A.6 provides additional data.

The recent stagnation in median earnings reflects deteriorating labor market prospects for low- and middle-skilled men. Technological advancements, increasing globalization, and declining union membership have increased earnings for men in the top quarter of the earnings distribution, even as earnings in the bottom half of the distribution fell or remained flat (Gottschalk and Danziger 2005; Holzer and Hlavac 2012; Kopczuk, Saez, and Song 2007; Mishel 2015; Rose 2016). Rising health care costs have also increased the share of compensation going to fringe benefits, suppressing growth in cash earnings (Burtless and Milusheva 2012).

Millennial women, by contrast, have generally earned more, on average, than previous cohorts of women employed full time, especially after they entered their 30s (figure 7). Median inflation-adjusted annual earnings for full-time workers ages 30 to 34 and ages 35 to 39 were higher for the 1981 to 1985 cohort than for any other cohort over the previous 50 years. For women ages 35 to 39 working full time,

median earnings for the 1981 to 1985 birth cohort were 19 percent higher than for the 1971 to 1975 cohort and 59 percent higher than for the 1931 to 1935 cohort.

Median Earnings for Full-Time Female Workers, by Age and Birth Cohort
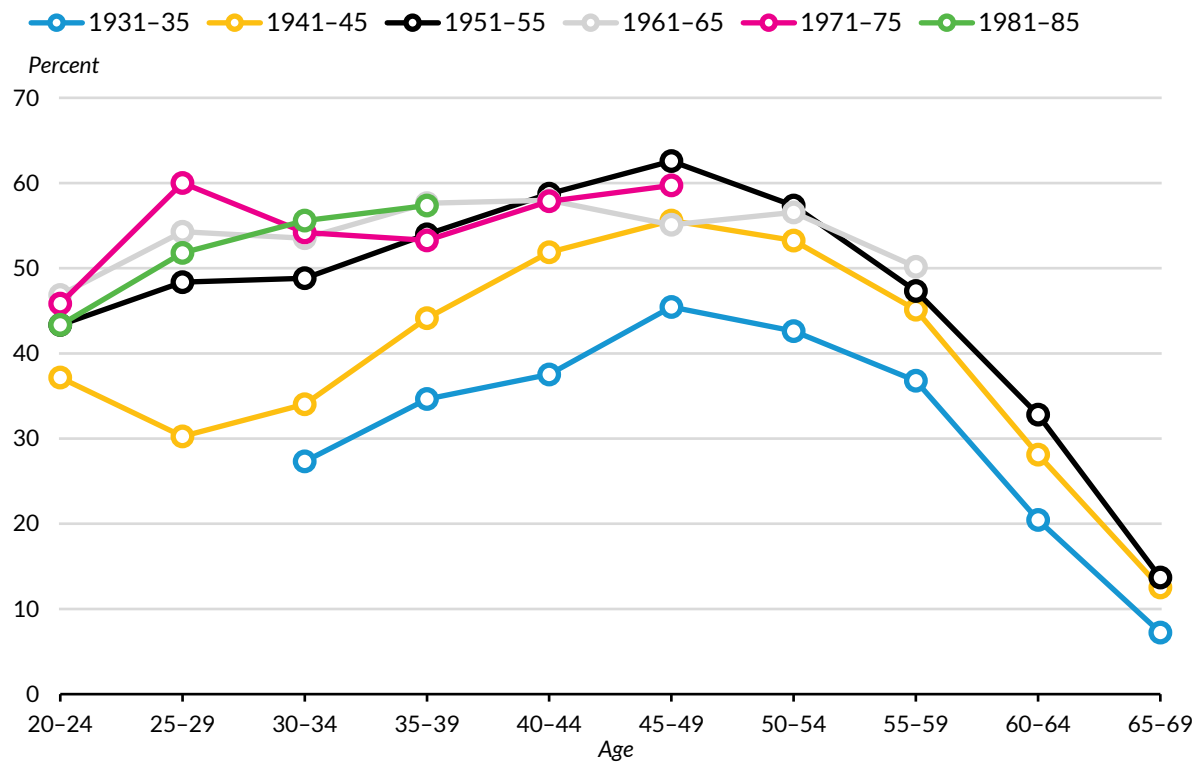

Inflation-adjusted 2021 dollars
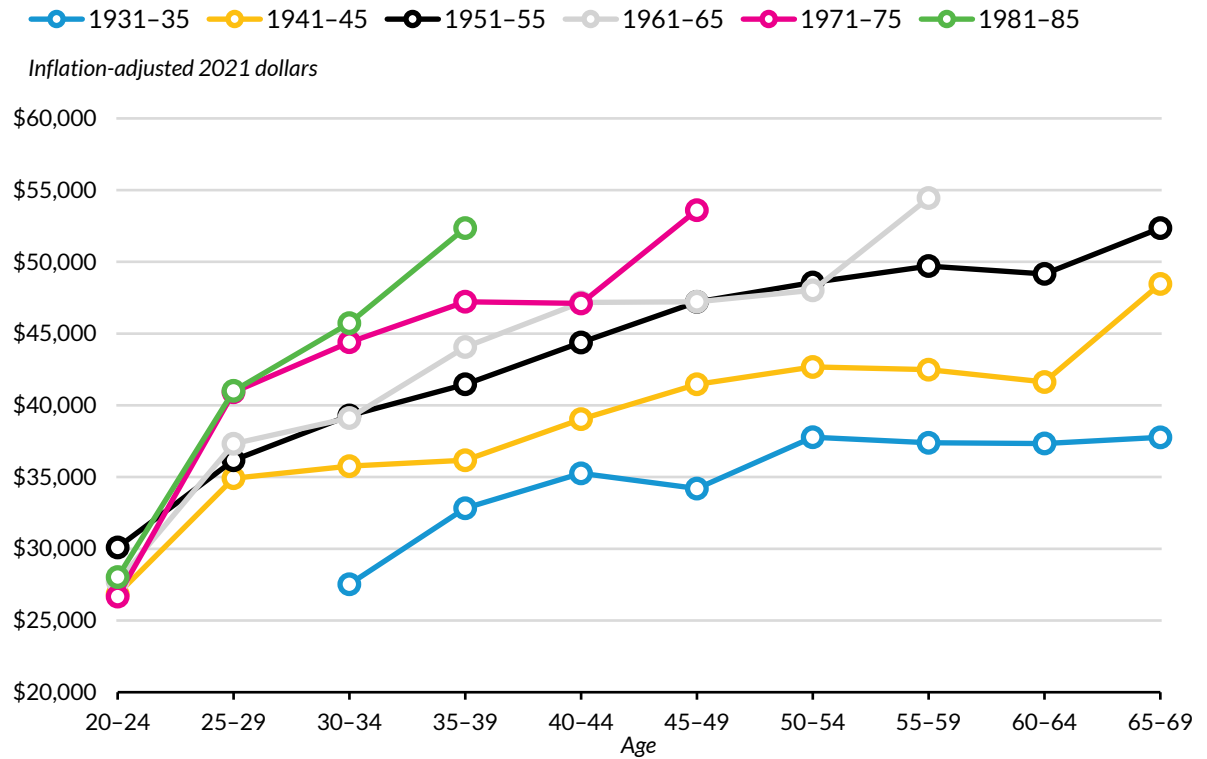
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Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Notes: The analysis defines full-time employment as 35 or more work hours per week. The vertical axis does not begin at zero. Table A.7 provides additional data.

Marriage

Marriage is an important source of retirement security because it allows spouses to pool resources, insure against risks, and qualify for spouse and survivor benefits from Social Security (and from employer pensions if they have them). However, marriage rates have been falling for decades for both men and women (Cherlin 2010). For men, each successive cohort has increasingly postponed marriage, and marriage rates for earlier cohorts have plateaued in middle age at successively lower levels (figure 8). At ages 51 to 55, 67 percent of men in the 1961 to 1965 cohort were married, compared with 78 percent of men born 20 years earlier. Millennial men have continued this trend. At ages 36 to 40, 63 percent of men born between 1981 and 1985 were married, compared with 67 percent of men born

between 1971 and 1975, 72 percent of men born between 1951 and 1955, and 89 percent of men between 1931 and 1935.

FIGURE 8
Percentage of Men Married, by Age and Birth Cohort

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: Table A.8 provides additional data.

Marriage patterns are similar for women, who have increasingly delayed marriage over the past four decades, perhaps to pursue education or a career (figure 9). At ages 26 to 30, 39 percent of women born between 1981 and 1985 were married, compared with 81 percent of women born between 1941 and 1945. Yet, the share of women who were married in middle age no longer appears to be declining. Women in the 1981 to 1985 birth cohort were just as likely to be married at ages 36 to 40 as those in the 1971 to 1975 birth cohort.

FIGURE 9
Percentage of Women Married, by Age and Birth Cohort
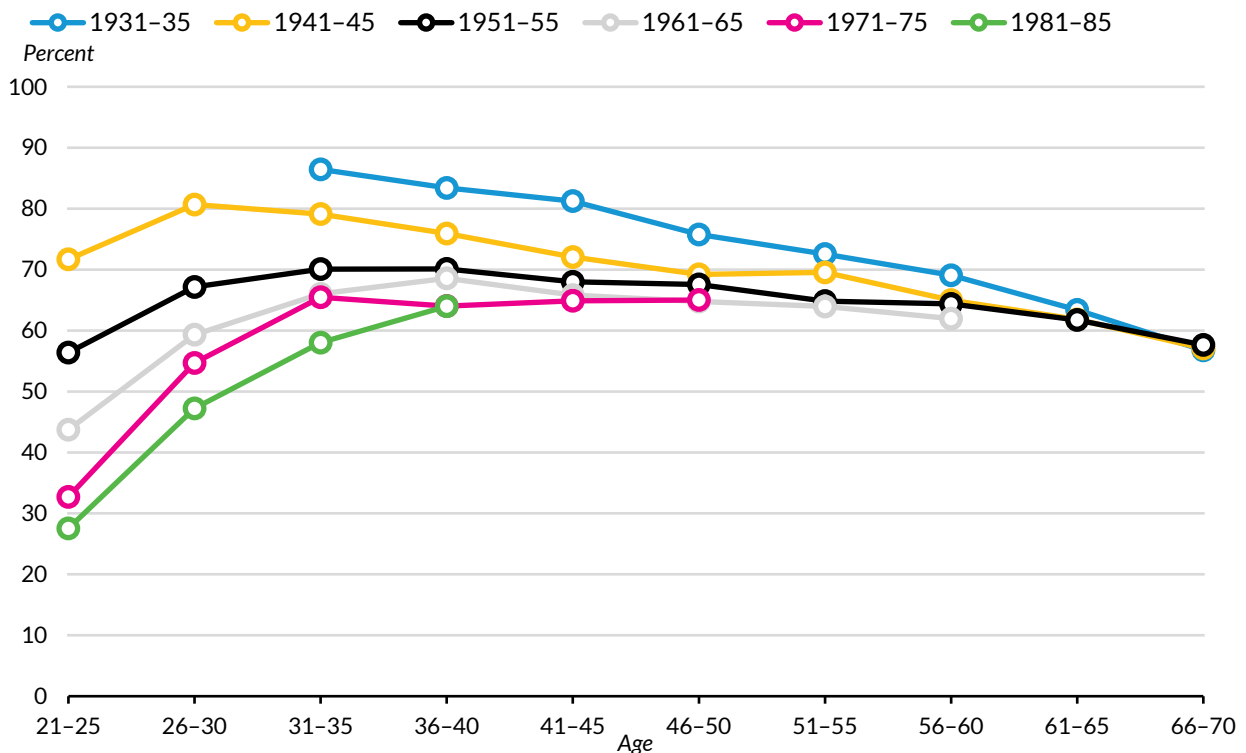
Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
**Note:** Table A.9 provides additional data.

Homeownership

Data from the CPS indicate that millennials are less likely to own a home than boomers and preboomers. At ages 31 to 35, only 44 percent of millennials born between 1981 and 1985 owned a home; that rate was about 10 percentage points lower than the rate for people born between 1971 and 1975, 1961 and 1965, or 1951 and 1955, and it was 20 percentage points lower than for people born between 1941 and 1945 (figure 10). Five years later, however, millennials had closed the homeownership gap with gen Xers born between 1971 and 1975, whose homeownership rate stagnated after 2006, in the wake of the housing market collapse. Nonetheless, at ages 36 to 40 millennials remained 9 percentage points less likely to own a home than people born 20 years earlier and 18 percentage points less likely than people born 40 years earlier.

FIGURE 10

Percentage of Adults Owning a Home, by Age and Birth Cohort
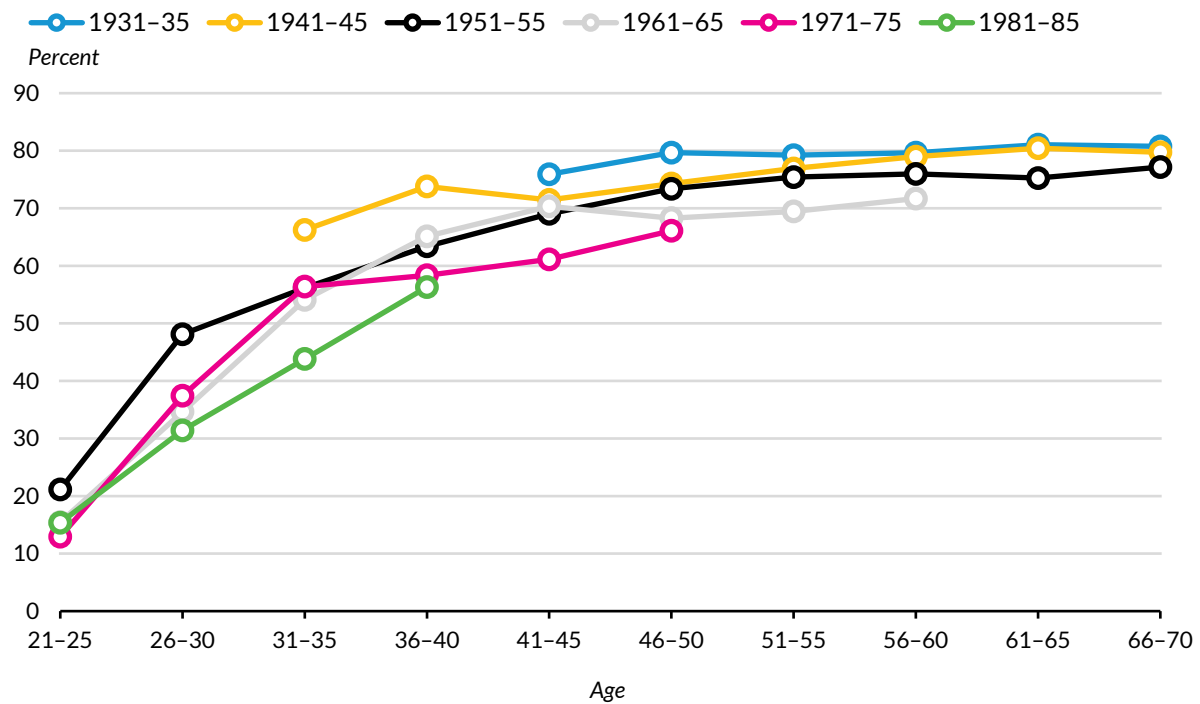
Percent

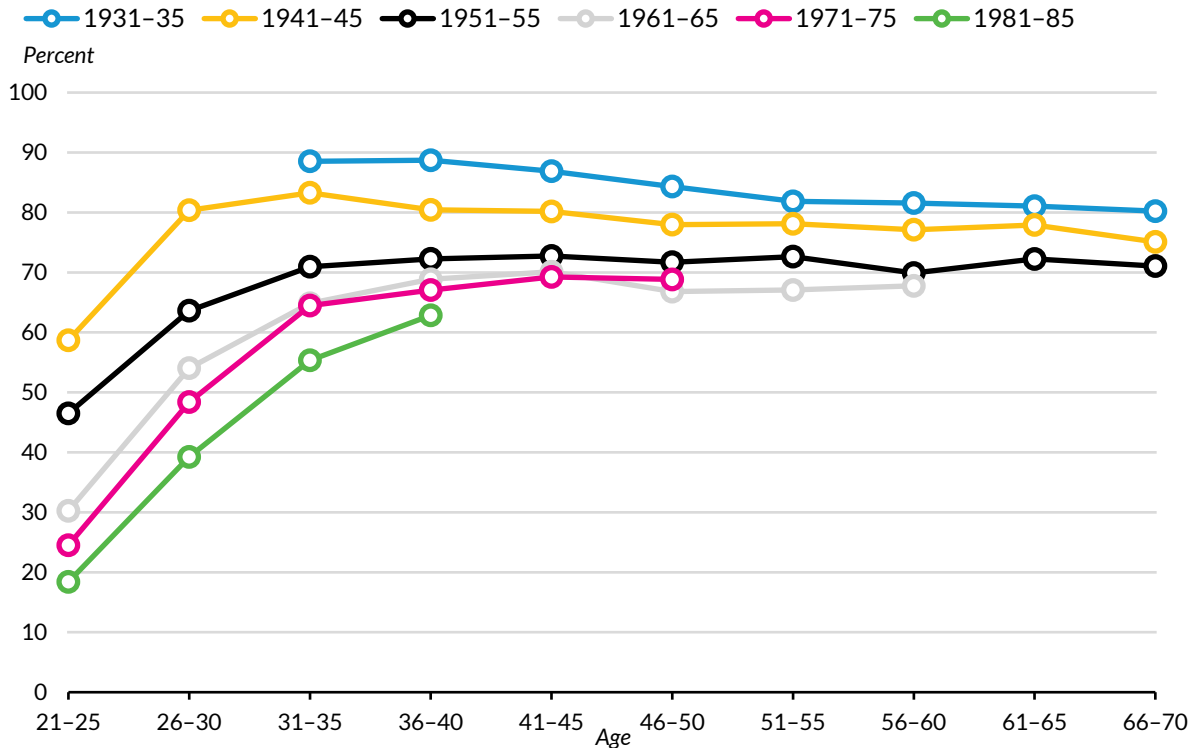Legend: 1931–35 · 1941–45 · 1951–55 · 1961–65 · 1971–75 · 1981–85

Age

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Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: The analysis classifies respondents who live in an owner-occupied housing unit as not owning a home if they are not the household head or the spouse or unmarried partner of the household head. Table A.10 provides additional data.

Household Wealth

We use data from the SCF to examine how household wealth and its components vary across generations. The SCF data we analyze span the 30 years from 1989 to 2019. The figures show outcomes for six-year age and birth cohort groups for household heads and their spouses. We begin with home equity, the largest source of wealth for most households, then consider financial assets, retirement accounts, and household debt. We conclude by combing these elements (as well as other unspecified assets such as the value of businesses and other real estate) into a measure of household net worth.

HOME EQUITY

Homeownership is an important financial resource in retirement. Retirees can avoid rental payments by owning a home, and homeowners may tap into their housing wealth to supplement their retirement income. The overall homeownership rate—the number of owner-occupied housing units divided by the

total number of occupied housing units—increased from World War II through 2005, when it hit a high of 69 percent, then fell to 64 percent in 2017 following the financial crisis, Great Recession, and collapse of the housing bubble (Garriga, Gavin, and Schlagenhauf 2006; US Census Bureau 2017). Much of the rise in homeownership through 2005 resulted from economic growth that made homeownership more affordable and from financial market innovations and regulatory changes that increased access to mortgage finance (Garriga, Gavin, and Schlagenhuaf 2006; Li 2005). The aging of the large baby boom generation, which moved into their 30s and 40s in the 1980s and 1990s, also appears to have raised the homeownership rate because homeownership generally becomes more common with age up to typical retirement ages.

Figure 11 shows how the share of adults with positive home equity—home value minus related housing debt—varies by age and birth cohort. The most notable feature of the chart is the drop in the share with positive home equity in 2013, following the 2007 collapse of the housing market that reduced the market value of many homes below the value of outstanding mortgages. Although the housing market had begun recovering by 2013, average home values, as measured by the S&P/Case-Shiller US National Home Price Index, remained below their 2007 values (Federal Reserve Bank of St. Louis 2022). These declines are most evident at ages 51 to 56 for the 1957 to 1962 birth cohort and at ages 39 to 44 for the 1969 to 1974 birth cohort. Except for these cyclical effects, few generational differences are evident in the share with positive home equity. Each generation appears to follow a similar homeownership trajectory, with homeownership rates increasing over the life course until they peak in the late 50s at nearly 85 percent and remain there through age 80. Rates of positive home equity for millennials, represented in the figure by the 1981 to 1986 birth cohort, lagged behind those for people born 12 years earlier and 24 years earlier at ages 27 to 32, but millennials reached that age range in 2013, when housing values were depressed. They had largely closed the gap by ages 33 to 38. This analysis, however, considers only household heads and spouses, and thus it does not reflect the increasing share of young adults who did not establish their own independent households.

FIGURE 11

Percentage of Adults with Positive Home Equity, by Age and Birth Cohort
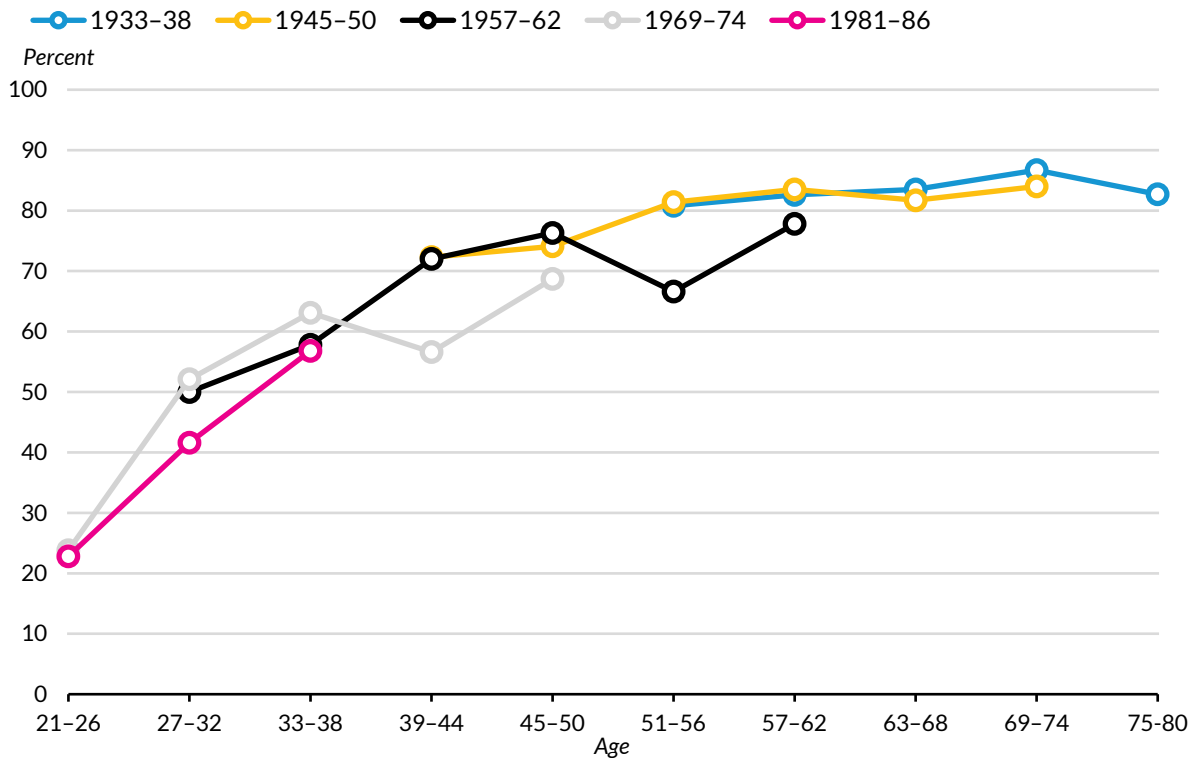
Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: The vertical axis does not begin at zero. Estimates are restricted to household heads and their spouses. Home equity is the value of a primary residence minus any outstanding housing debt, such as mortgages and home equity loans. Table A.11 provides additional data.

The median value of home equity for household heads and their spouses with positive amounts does not vary much over the life course, aside from sharp drops in values in 2013 (which occurred at ages 75 to 80 for the 1933 to 1938 birth cohort, ages 63 to 68 for the 1945 to 1950 cohort, ages 51 to 56 for the 1957 to 1962 cohort, and ages 39 to 44 for the 1969 to 1974 cohort; figure 12). Median home equity increases over the life course, reaching about $100,000 in inflation-adjusted 2021 dollars at ages 57 to 62 for the 1945 to 1950 cohort and the 1957 to 1962 cohort. Although no evidence exists on millennials lagging earlier cohorts in the accumulation of home equity, not much evidence of intergenerational gains in home equity exists either.

FIGURE 12
Median per Capita Value of Home Equity for Equity Holders, by Age and Birth Cohort
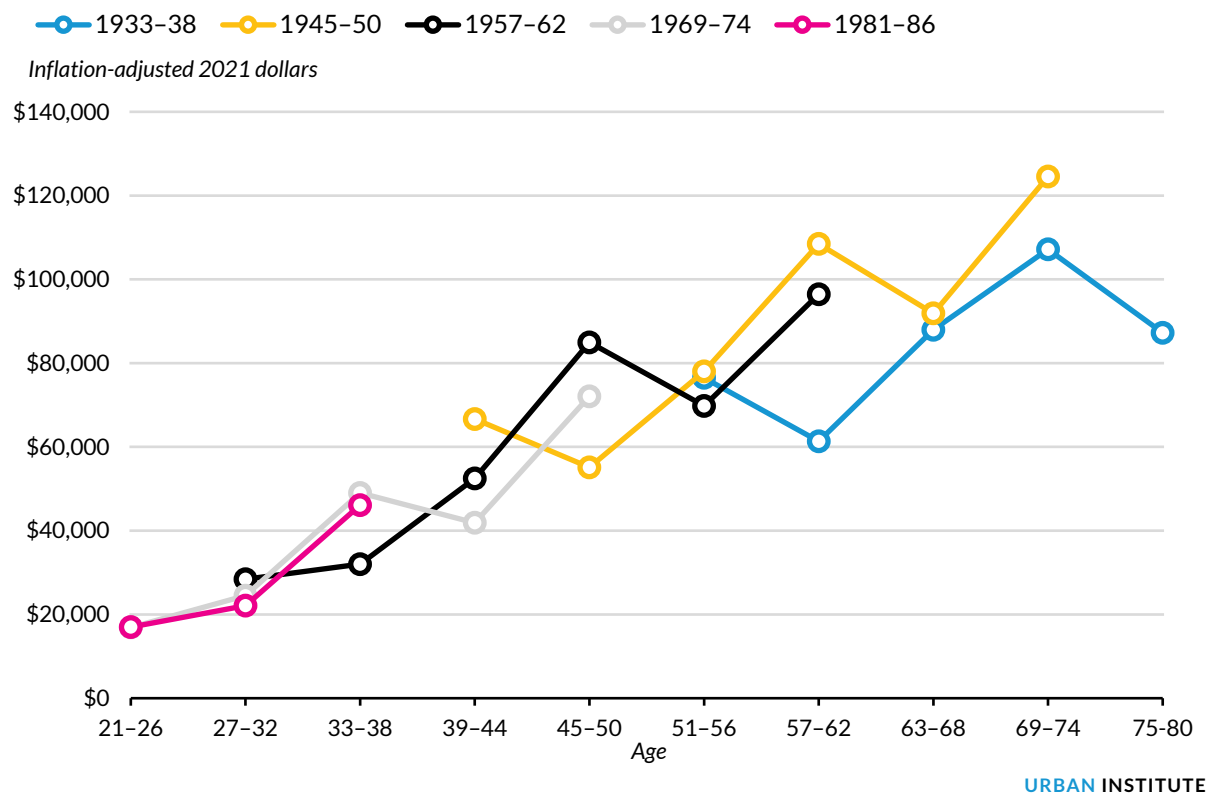
Inflation-adjusted 2021 dollars

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Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are restricted to household heads and their spouses in households with positive home equity. Home equity is the value of a primary residence minus any outstanding housing debt, such as mortgages and home equity loans. The analysis divides household estimates by two for married adults. Table A.12 provides additional data.

FINANCIAL WEALTH

Financial wealth is generally more liquid than real assets and thus can often help families weather emergencies or endure unexpected expenses. Like home equity, financial wealth generally increases over much of the life course, then declines at older ages as families spend down their assets. Among the cohorts we examine, median financial wealth peaked at ages 57 to 62 for the early boomers (the 1945 to 1950 cohort) at $69,500 in inflation-adjusted 2021 dollars (figure 13). This cohort's median financial wealth plunged 24 percent six years later, in 2013, in the aftermath of the 2008 stock market crash and Great Recession, and it fell an additional 7 percent in 2019. Accounting for the 2008 stock market crash, we see that the early boomers had accumulated much more financial wealth than the preboomers (the 1933 to 1938 cohort). Before the 2008 stock market crash, the late boomers (the 1957 to 1962 cohort) had accumulated more financial wealth than the early boomers, but the crash eliminated those gains, and despite subsequent asset growth, late boomers' median financial wealth

remained significantly lower than early boomers' median wealth. Later generations—gen Xers born between 1969 and 1974 and millennials born between 1981 and 1986—had accumulated about as much financial wealth as the late boomers by ages 33 to 38. Gen Xers, however, did not experience as much growth in financial assets in their 40s as late boomers, leaving gen Xers' median financial wealth nearly 20 percent lower than the median for late boomers at ages 45 to 50. It is too soon to determine how much millennials' financial portfolios will grow in their 40s.

Median per Capita Household Financial Wealth for Wealth Holders, by Age and Birth Cohort

Inflation-adjusted 2021 dollars

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Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are restricted to household heads and their spouses in households with positive financial wealth. Financial wealth includes retirement account balances plus financial assets held outside of retirement accounts, including the value of bank accounts, certificates of deposit, annuities, trusts, stocks, bonds, mutual funds, and the cash value of life insurance. The analysis divides household estimates by two for married adults. Table A.13 provides additional data.

RETIREMENT ACCOUNTS

We now consider the portion of financial wealth held in retirement accounts, where many families do the bulk of their savings. The share of household heads and their spouses who hold a retirement

account increases until it reaches about 66 percent in their mid-40s (figure 14). Retirement account ownership declines somewhat after age 60, as people retire and deplete their account holdings.

**Percentage of Adults with Retirement Accounts, by Age and Birth Cohort**
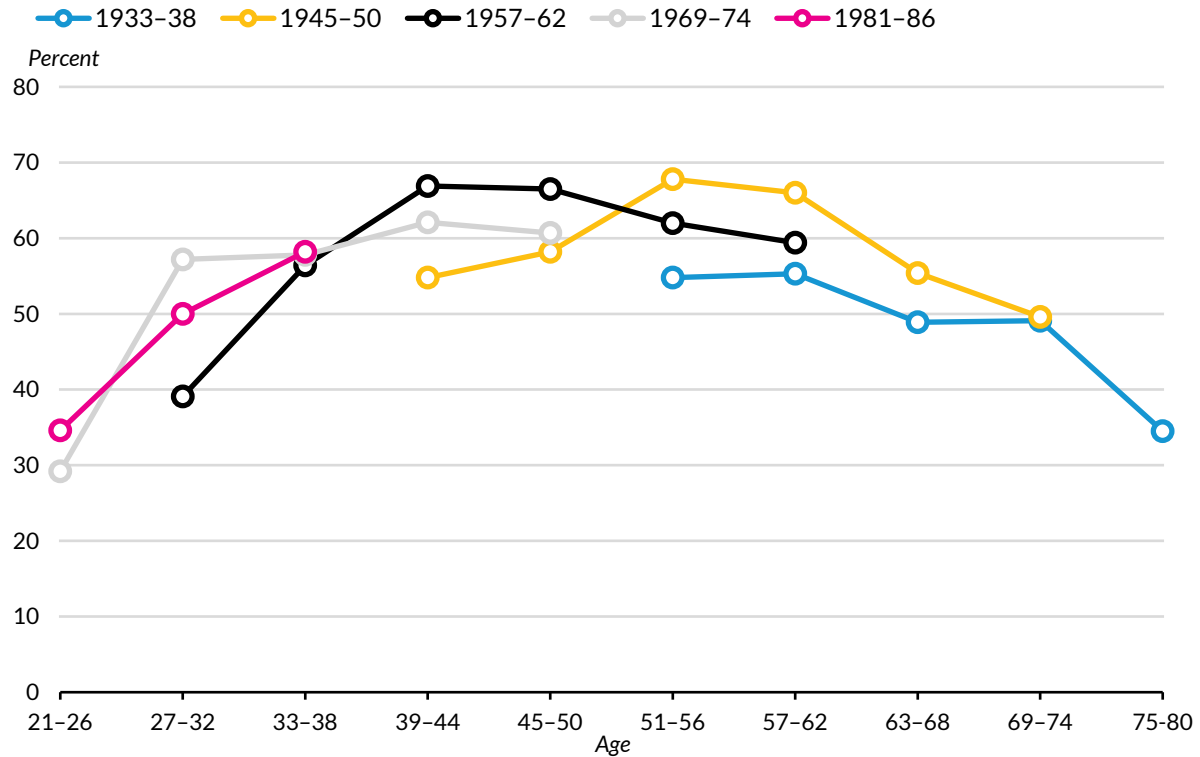
Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: The vertical axis does not begin at zero. Estimates are restricted to household heads and their spouses. Retirement accounts include IRAs, Keogh accounts, and employer-sponsored retirement accounts, such as 401(k) plans. Table A.14 provides additional data.

Retirement account ownership has generally increased with each successive birth cohort, although the pattern is not smooth and growth has slowed recently. At ages 33 to 38, 58 percent of millennial household heads and their spouses owned a retirement account, about the same percentage as for gen Xers and late boomers. However, gen Xers were about 5 percentage points less likely than early boomers to own a retirement account during their 40s. That pattern, if it persists, is a worrisome sign for millennials' retirement security.

The retirement outlook for millennials appears somewhat more promising when we consider retirement account balances for people with positive holdings. Inflation-adjusted median per capita

retirement account balances among account holders increased with each successive birth cohort through gen Xers born between 1969 and 1974 (figure 15). At ages 57 to 62, late boomers (born between 1957 and 1962) had a median per capita account balance that reached $106,000 in inflation-adjusted 2021 dollars, 21 percent higher than for early boomers (born between 1945 and 1950) and about three times as high as for preboomers (born between 1933 and 1938). At ages 45 to 50, the median per capita account balance for gen Xers who had an account reached $67,300, 29 percent higher than for late boomers and more than twice as high as for early boomers. Thus far, retirement account balances for millennials born between 1981 and 1986 have not experienced the same growth rate. At ages 33 to 38, millennials' per capita retirement account balance was $21,200, only 8 percent more than for gen Xers.

FIGURE 15

Median per Capita Value of Retirement Accounts for Account Holders, by Age and Birth Cohort

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are restricted to household heads and their spouses in households with at least one retirement account. Retirement account balances include the value of IRAs, Keogh accounts, and employer-sponsored retirement accounts, such as 401(k) plans. The analysis divides household estimates by two for married adults. Table A.15 provides additional data.
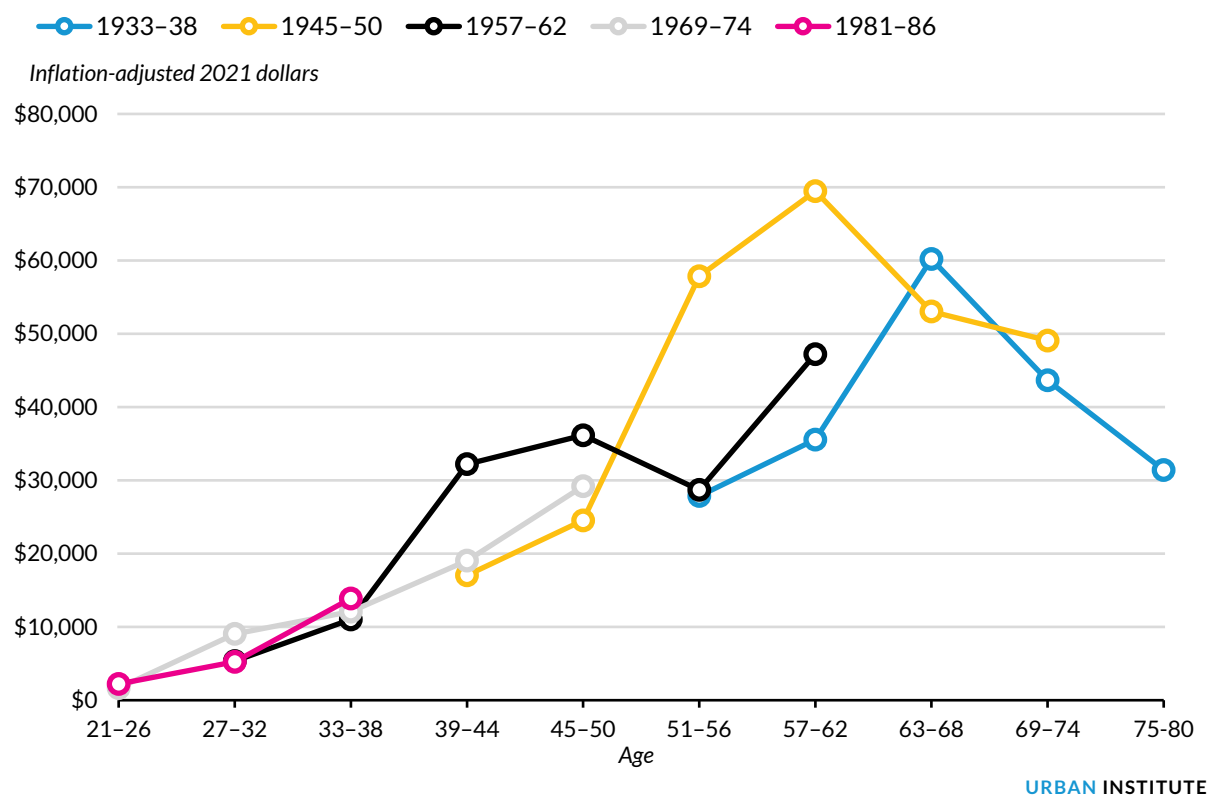
HOUSEHOLD DEBT

Household debt has grown significantly over the past quarter-century. The share of household heads and spouses with debt has not changed much at midlife or younger ages, although it has fallen somewhat over the past two decades for people in their 20s, 30s, and early 40s (figure 16). Older Americans, however, are now more likely to hold debt than in the past. At ages 69 to 74, 69 percent of early boomers born between 1945 and 1950 held debt, compared with 60 percent of preboomers born between 1933 and 1938.

FIGURE 16

Percentage of Adults with Outstanding Household Debt, by Age and Birth Cohort
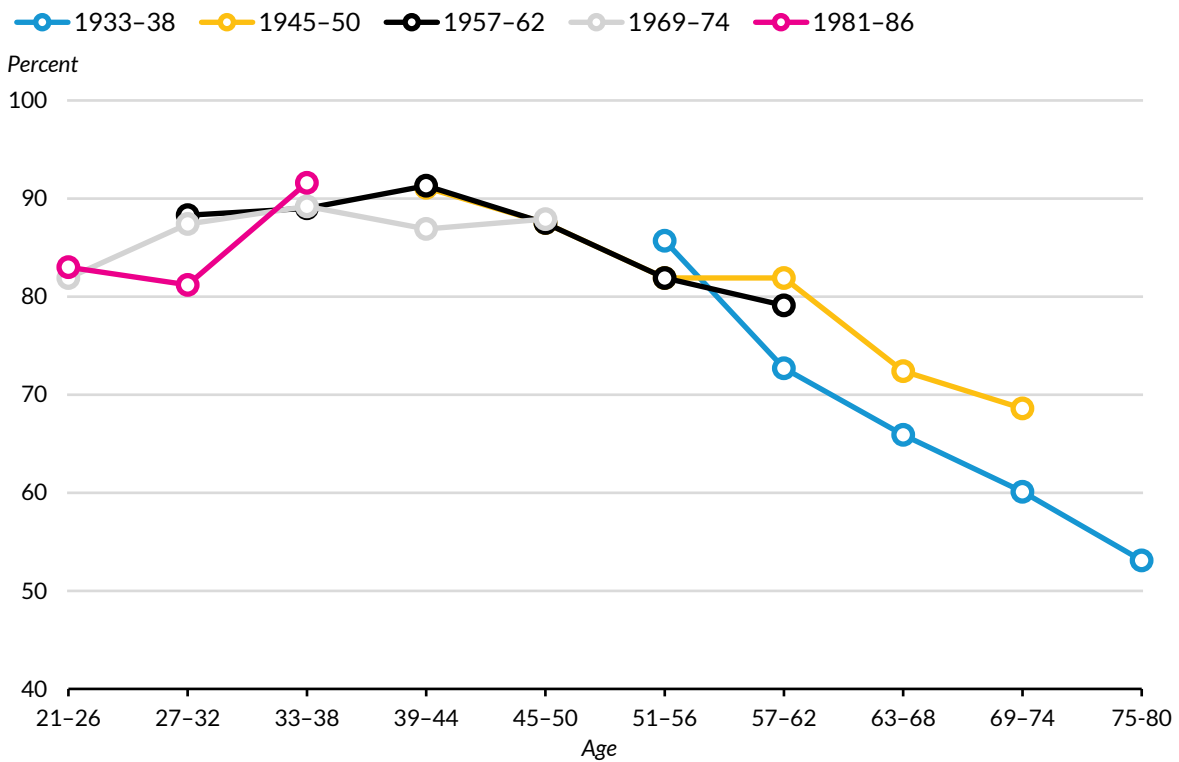
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Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: The vertical axis does not begin at zero. Estimates are restricted to household heads and their spouses. Debt includes outstanding housing debt, installment loans, credit card balances, and other debt held by a household. Table A.16 provides additional data.

Debt holdings among people with debt have risen sharply over time. At ages 51 to 56, median per capita outstanding debt for debt holders was $68,400 in inflation-adjusted 2021 dollars for late boomers born between 1957 and 1962, 52 percent higher than for early boomers born 12 years earlier, and more than three times as high as for preboomers born 24 years earlier (figure 17). Median per

capita debt peaked at $83,200 at ages 33 to 38 for gen Xers born between 1969 and 1974, more than twice as high as for late boomers. Median per capita debt levels for millennials have been about the same as for gen Xers, although slightly lower at ages 33 to 38, but they remain well above the levels for earlier generations.

Median per Capita Value of Outstanding Household Debt for Debt Holders, by Age and Birth Cohort
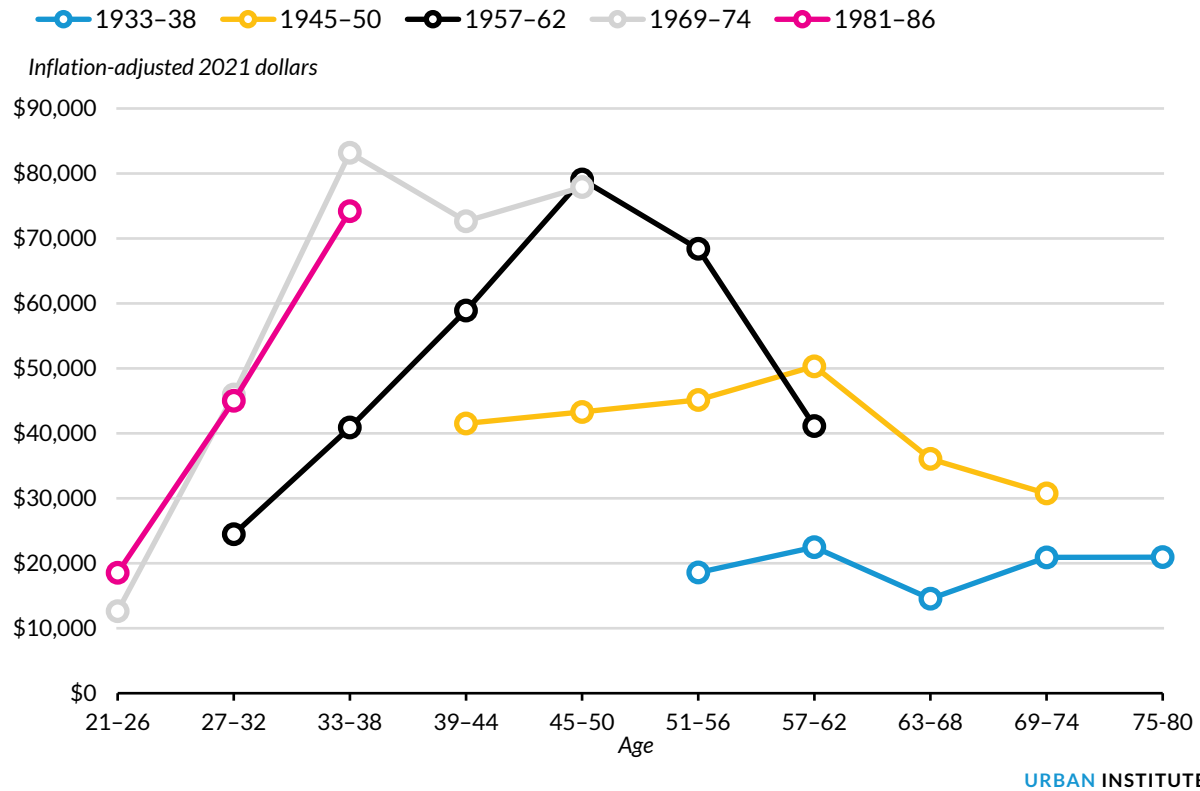
Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are restricted to household heads and their spouses in households with outstanding debt. Debt includes outstanding housing debt, installment loans, credit card balances, and other debt held by a household. The analysis divides household estimates by two for married adults. Table A.17 provides additional data.
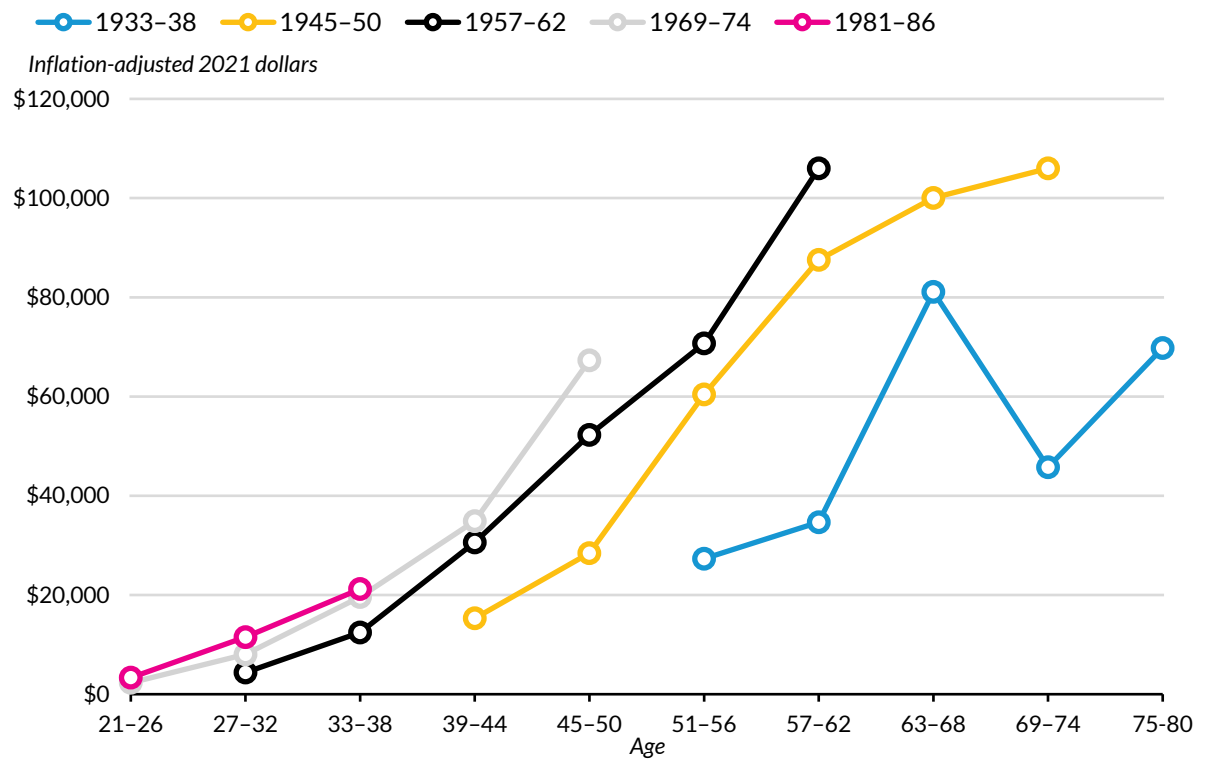
Increases in housing prices, financial innovations that increased access to credit, demographic shifts, and low and stagnating incomes spurred the rise in household indebtedness (Barba and Pivetti 2009; Dynan and Kohn 2007). Student loan debt has also been growing (Brown et al. 2014). The median debt level for debt holders declined between 2007 and 2019 but remained much higher than in the 1990s. As people enter retirement with more debt, debt service payments could strain their financial resources (Butrica and Karamcheva 2013; Karamcheva 2013).

Combining the various components of a household's balance sheet, figure 18 shows median per capita household net worth by age and birth cohort. Household net worth grows rapidly over the life course. For late boomers born between 1957 and 1962, median per capita household net worth increased from $23,600 in inflation-adjusted 2021 dollars at ages 27 to 32 to $187,900 at ages 57 to 62. From the preboomers to the late boomers, household net worth increased with each successive generation. At ages 45 to 50, for example, median per capita household net worth was 55 percent higher for late boomers than early boomers.

FIGURE 18

Median per Capita Household Net Worth, by Age and Birth Cohort
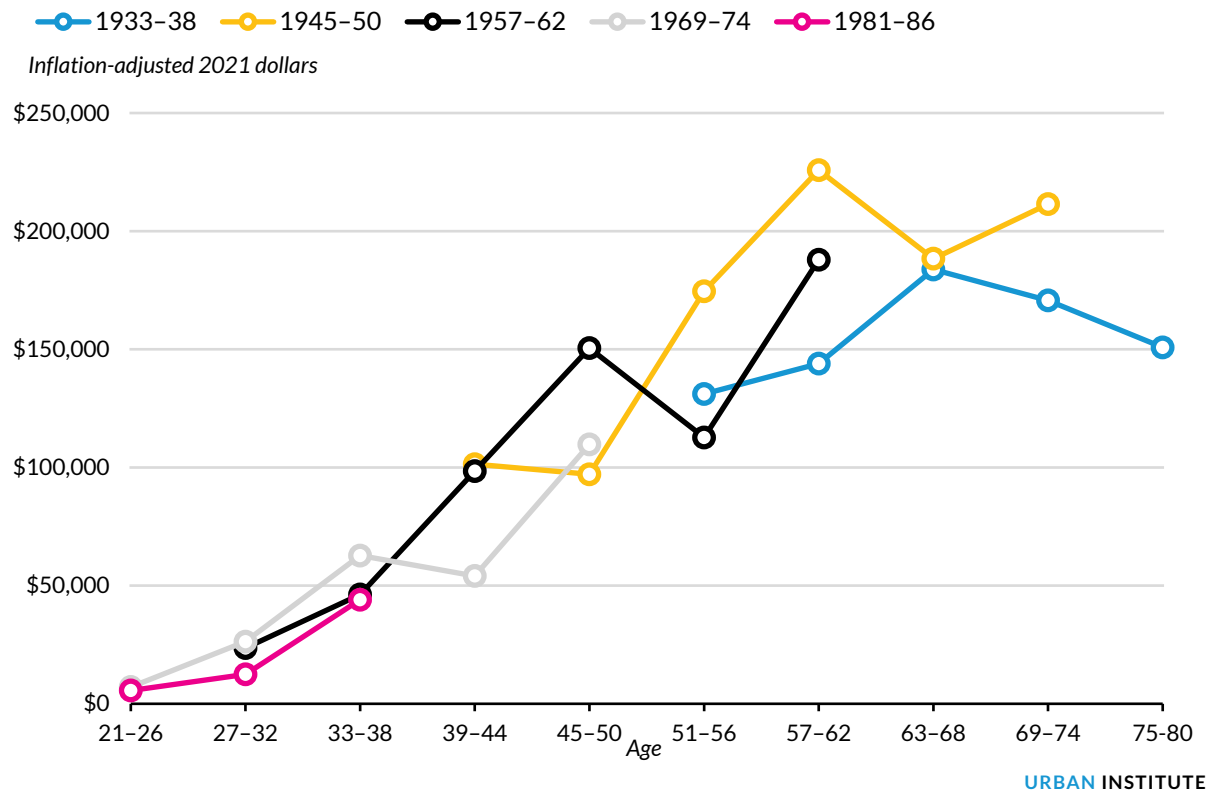
Inflation-adjusted 2021 dollars

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Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are restricted to household heads and their spouses. Net worth includes the value of a primary residence, other real estate, financial assets (including retirement accounts), and other real assets minus outstanding debt. The analysis divides household estimates by two for married adults. Table A.18 provides additional data.

Household net worth has been stagnating for gen Xers and millennials. Gen Xer's median per capita household net worth has generally been somewhat below the level for late boomers at the same age. At ages 33 to 38, median net worth for millennials roughly equaled that for late boomers.

Retirement Income Projections

Turning to future retirement income, we project that per capita family income at age 70 will increase over time (table 1). Average age-70 income for early millennials is projected to reach $80,300 in 2021 inflation-adjusted dollars, 35 percent higher than the $59,400 average for preboomers and 23 percent higher than the $65,400 for late boomers. Incomes vary widely. For early millennials, projected age-70 income ranges from $16,200 at the 10th percentile of the income distribution and $28,100 at the 25th percentile to $90,100 at the 75th percentile and $154,700 at the 90th percentile. Nonetheless, we project that income increases over time across the distribution.

Projected Mean and Distribution of per Capita Annual Family Income at Age 70, by Birth Cohort
2021 inflation-adjusted dollars

	Preboomers	Early boomers	Late boomers	Early gen Xers	Late gen Xers	Early millennials
Mean	59,400	61,800	65,400	71,700	73,500	80,300
Percentile of the distribution						
10th	12,000	13,200	13,300	14,000	14,400	16,200
25th	20,800	23,200	22,800	23,900	25,100	28,100
50th	38,800	42,400	42,100	43,500	45,600	50,700
75th	70,100	76,500	77,300	81,100	84,600	90,100
90th	116,500	126,600	132,800	138,000	149,400	154,700

Source: Authors' estimates from DYNASIM4 runid 999.
Notes: Estimates are rounded to the nearest $100. The analysis assumes that scheduled Social Security benefits are paid in full. The income measure includes Social Security, earnings, defined benefit pensions, Supplemental Security Income, other government cash benefits, and the annual income from an actuarially fair annuity valued at 80 percent of financial assets, including retirement accounts. The analysis divides total family income by two for married adults.

INCOME SOURCES

The projected composition of age-70 income varies across income levels (table 2). Social Security accounts for about three-quarters of total income in the bottom income quintile and about one-half of income in the middle income quintile. In the top income quintile, however, it accounts for less than one-fifth of income. Social Security, income from assets, and labor earnings will be the most important income sources for early millennials in the bottom and middle income quintiles when they reach age 70. In the top income quintile, labor earnings account for more income than any other source, followed closely by income from assets. Social Security is the third most important income source in the top income quintile.

We project that mean age-70 income will increase somewhat more rapidly for higher-income people than for lower-income people. Over the roughly 45 years that separate the preboomers and the

early millennials, projected mean income will grow 26 percent in the bottom income quintile, 31 percent in the middle income quintile, and 39 percent in the top income quintile. Growth differences are starker when we consider income levels, with mean income increasing $3,000 in the bottom income quintile and $62,300 in the top quintile.

Projected Annual per Capita Family Income at Age 70, by Birth Cohort, Income Source, and Income Quintile

	Preboomers		Early Millennials		Change	
	Mean ($)	% of total	Mean ($)	% of total	Mean ($)	% of total
Bottom quintile						
Social Security	8,700	75	10,900	75	2,200	25
Labor market	400	3	900	6	500	125
Assets	700	6	1,900	13	1,200	171
DB pension	500	4	200	1	-300	-60
SSI	1,100	9	400	3	-700	-64
Other source	200	2	300	2	100	50
Total	11,600	100	14,600	100	3,000	26
Middle quintile						
Social Security	17,400	45	27,100	53	9,700	56
Labor market	4,400	11	7,100	14	2,700	61
Assets	7,700	20	12,200	24	4,500	58
DB pension	7,900	20	2,100	4	-5,800	-73
SSI	0	0	0	0	0	na
Other source	1,200	3	2,300	5	1,100	92
Total	38,800	100	50,800	100	12,000	31
Top quintile						
Social Security	20,400	13	37,000	17	16,600	81
Labor market	37,300	23	82,100	37	44,800	120
Assets	61,800	39	73,200	33	11,400	18
DB pension	28,100	18	11,200	5	-16,900	-60
SSI	0	0	0	0	0	na
Other source	12,000	8	18,400	8	6,400	53
Total	159,500	100	221,800	100	62,300	39

Source: Authors' calculations using DYNASIM4 runid999.
Notes: DB = defined benefit. SSI = Supplemental Security Income. na = not applicable. Estimates are rounded to the nearest $100 and expressed in 2021 inflation-adjusted dollars. The analysis assumes that scheduled Social Security benefits are paid in full. See the notes to table 1 for details on the income measure.

Income sources are shifting. The importance of labor earnings at older ages is increasing, especially for older adults near the top of income distribution, while the importance of DB pensions is falling. Supplemental Security Income benefits are also declining, with participation rates falling because the program does not index eligibility thresholds for income growth or inflation (Favreault 2021). We project that Supplemental Security Income accounts for 9 percent of income for preboomers in the bottom income quintile, compared with only 3 percent for early millennials.

INCOME DIFFERENCES BY DEMOGRAPHIC CHARACTERISTICS

Projected age-70 incomes are higher for men, non-Hispanic white adults, married adults, and people with a college education than for women, people of color, single adults, and people who did not attend college (table 3). However, we project that many of these differentials will narrow over the coming decades as projected retirement incomes grow rapidly for people of color and women, largely reflecting lifetime earnings gains for these groups. Comparing preboomers and early millennials, we project that median age-70 income will increase 97 percent for Hispanic adults and 63 percent for Black adults but only 33 percent for white adults. Consequently, the median income advantage for non-Hispanic white adults relative to Hispanic adults will fall from 175 percent among preboomers to 87 percent for early millennials, and the advantage for non-Hispanic white adults relative to Black adults will fall from 78 percent to 46 percent. We project that median age-70 income for women will be 40 percent higher among early millennials than preboomers, whereas median income for men will be only 23 percent higher among early millennials. The strong income growth for women will shrink men's income advantage from 22 percent among preboomers to only 8 percent among early millennials.

However, projected age-70 income differentials by lifetime earnings will increase over time. For people in the top quintile of the lifetime earnings distribution, median age-70 income will be 51 percent higher among early millennials than preboomers. Median age-70 income across the six generations will increase only 22 percent for people in the middle lifetime earnings quintile and only 31 percent for people in the bottom lifetime earnings quintile. This differential largely reflects ongoing growth in earnings inequality, as earnings have increased more rapidly near the top of the earnings distribution than in the middle or near the bottom (Piketty and Saez 2003).

TABLE 3
Projected Mean and Distribution of per Capita Annual Family Income at Age 70, by Birth Cohort
2021 inflation-adjusted dollars

	Preboomers	Early boomers	Late boomers	Early gen Xers	Late gen Xers	Early millennials
All	38,800	42,400	42,100	43,500	45,600	50,700
Gender						
Men	42,900	45,000	45,000	46,600	46,800	52,700
Women	35,100	40,500	39,900	41,200	44,500	49,000
Race and ethnicity						
Non-Hispanic white	44,900	49,000	49,400	53,800	55,300	59,900
Non-Hispanic Black	25,200	29,700	29,900	34,100	33,800	41,000
Hispanic	16,300	19,700	21,500	22,100	25,000	32,100
Other	31,000	33,300	39,300	47,200	60,000	59,900
Education						
No high school diploma	17,600	16,600	16,200	15,300	15,100	17,600
High school diploma	32,200	31,600	30,500	29,700	30,400	34,300
Some college	45,600	42,800	44,500	44,000	45,800	47,500
Four-year college degree or more	74,700	74,700	81,000	80,900	82,500	79,900
Marital status						
Married	43,000	47,500	48,800	50,200	52,900	56,600
Widowed	27,900	35,400	35,800	35,400	39,800	47,700
Divorced	33,200	35,100	34,500	37,400	38,200	45,500
Never married	25,700	31,000	27,700	27,200	28,500	37,000
Quintile of lifetime earnings						
Bottom	13,400	14,700	14,400	14,900	15,500	17,600
Second	25,200	28,500	27,100	27,400	28,600	33,200
Third	40,500	42,700	40,900	42,300	43,200	49,600
Fourth	53,800	61,900	61,700	65,300	68,200	73,300
Top	86,900	98,200	110,000	113,400	127,500	131,400

Source: Authors' estimates from DYNASIM4 runid 999.
Notes: Estimates are rounded to the nearest $100. The analysis assumes that scheduled Social Security benefits are paid in full. The income measure includes Social Security, earnings, defined benefit pensions, Supplemental Security Income, other government cash benefits, and the annual income from an actuarially fair annuity valued at 80 percent of financial assets, including retirement accounts. The analysis divides total family income by two for married adults. The lifetime earnings measure includes the annual average earnings of spouses in years when married.

INCOME ADEQUACY AT OLDER AGES

Despite an increase in age-70 incomes, the share of older adults unable to cover basic needs or maintain their preretirement living standards is projected to increase over time. Defining inadequate income at age 70 as income that falls below 25 percent of the annual national average wage or falls below 75 percent of average annual earnings received at ages 50 to 59 (unless age-70 income equals or exceeds the annual national average wage), we project that age-70 income will be inadequate for 38 percent of early millennials, compared with 28 percent of preboomers and early boomers and 30 percent of late boomers (table 4). These estimates assume that Social Security continues to pay full scheduled benefits

after the program's trust funds run out, which the Social Security trustees project will occur in 2035 (Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds 2022), before early gen Xers, late gen Xers, and early millennials reach age 70. The share of older adults with inadequate income increases over time because retirement incomes are growing more slowly than labor market earnings.

TABLE 4

Projected Percentage of Adults with Inadequate Income at Age 70, by Birth Cohort and Personal Characteristics

	Preboomers	Early boomers	Late boomers	Early gen Xers	Late gen Xers	Early millennials
All	28	28	30	35	39	38
Gender						
Men	29	28	29	33	38	38
Women	27	28	31	37	40	39
Race and ethnicity						
Non-Hispanic white	23	23	25	29	32	33
Non-Hispanic Black	35	35	37	39	45	42
Hispanic	54	50	48	54	56	53
Other	37	37	35	35	33	34
Education						
No high school diploma	49	54	54	64	70	66
High school diploma	31	31	35	42	46	45
Some college	23	27	27	32	36	38
Four-year college degree or more	14	17	19	22	26	28
Marital status						
Married	26	25	27	32	35	35
Widowed	29	26	28	32	34	33
Divorced	33	33	35	38	40	40
Never married	39	41	43	51	55	50
Quintile of lifetime earnings						
Bottom	50	53	61	65	67	64
Second	24	25	28	34	37	35
Third	23	25	25	32	36	35
Fourth	25	22	24	28	34	36
Top	17	16	15	18	19	23

Source: Authors' estimates from DYNASIM4 runid 999.

Notes: We classify adults as having inadequate income if their age-70 income falls below 25 percent of the annual average national wage or if they are unable to replace at least 75 percent of the average amount they earned from ages 50 to 59 (unless their age-70 income equals or exceeds the annual average national wage). The analysis assumes that scheduled Social Security benefits are paid in full. See the notes to table 3 for details on the income and lifetime earnings measures.

Lacking adequate retirement income is especially common among people of color, people who did not attend college, people who never marry, and people with limited lifetime earnings. We project that

among early millennials, 53 percent of Hispanic adults, 42 percent of Black adults, 66 percent of people who did not complete high school, 45 percent of people with no more than a high school diploma, and 50 percent of people who never marry will have inadequate income to meet basic needs at age 70 or to maintain their preretirement living standards. Additionally, 64 percent of people in the bottom quintile of the lifetime earnings distribution are projected to have inadequate income at age 70. Even relatively privileged groups face a meaningful financial risk at older ages. We project that 28 percent of early millennials with a four-year college degree and 23 percent of those in the top quintile of the lifetime earnings distribution will lack an adequate income at age 70.

Although we project that financial security in retirement will deteriorate for nearly all demographic groups, certain early millennial groups will not face much more financial risk than their preboomer counterparts. Compared with preboomers, the projected share of early millennials receiving inadequate income at age 70 is only 7 percentage points higher among Black adults and a few percentage points lower among Hispanic adults and other nonwhite adults. The share with inadequate income will increase only 4 percentage points for widowed adults, 7 percentage points for divorced adults, and 6 percentage points for adults in the top quintile of the lifetime earnings distribution.

IMPACT OF SOCIAL SECURITY'S FINANCING GAP

Our retirement income projections hinge on what happens to Social Security payments after the program's trust funds run out. Using the Social Security trustees' intermediate projections, the program's actuaries projected in 2022 that the trust funds will run out in 2035, after which the program will be able to pay only about 75 percent of scheduled benefits, unless it receives more revenue (Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds 2022). Our scheduled scenario, which we have incorporated into the projections presented so far, assume that policymakers will find the additional revenues needed to pay full scheduled benefits. The payable scenario assumes that policymakers do not alter Social Security's revenue streams and implement across-the-board benefit cuts when the trust funds run out. The balanced scenario splits the difference, assuming that Congress implements a balanced reform that closes half the financing gap by cutting benefits and half the gap by raising revenues.

We project that the share of early millennials with age-70 income insufficient to meet basic needs or maintain their preretirement living standards will increase to 43 percent under the balanced scenario and 49 percent under the payable scenario (table 5). Under the payable scenario, 53 percent of Black adults in the early millennial cohort, 62 percent of Hispanic adults, 75 percent of adults who did not

complete high school, 57 percent of adults with only a high school diploma, and 74 percent of adults in the bottom quintile of the lifetime earnings distribution will receive inadequate retirement income.

Projected Percentage of Preboomers and Early Millennials with Inadequate Income at Age 70, by Personal Characteristics
Under alternative scenarios about how Social Security benefits will be paid after the trust funds run out

	Preboomers	Early Millennials		
	All scenarios	Scheduled scenario	Payable scenario	Balanced scenario
All	28	38	49	43
Gender				
Men	29	38	47	43
Women	27	39	50	44
Race and ethnicity				
Non-Hispanic white	23	33	44	38
Non-Hispanic Black	35	42	53	46
Hispanic	54	53	62	56
Other	37	34	42	39
Education				
No high school diploma	49	66	75	68
High school diploma	31	45	57	50
Some college	23	38	50	43
Four-year college degree or more	14	28	36	33
Marital status				
Married	26	35	46	43
Widowed	29	33	45	33
Divorced	33	40	49	41
Never married	39	50	59	50
Quintile of lifetime earnings				
Bottom	50	64	74	64
Second	24	35	50	41
Third	23	35	46	41
Fourth	25	36	45	43
Top	17	23	29	28

Source: Authors' estimates from DYNASIM4 runid 999.
Notes: The scheduled scenario assumes all Social Security benefits currently scheduled will be paid after the trust funds run out, the payable scenario assumes that only benefits that can be financed under existing revenue streams will be paid, and the balanced scenario assumes that half the financing shortfall will be closed through benefit cuts and half will be closed through revenue increases. We classify adults as having inadequate income if their age-70 income falls below 25 percent of the annual average national wage or they are unable to replace at least 75 percent of the average amount they earned from ages 50 to 59 (unless their age 70 income equals or exceeds the annual average national wage). See the notes to table 3 for details on the income and lifetime earnings measures.

SENSITIVITY TO THE DEFINITION OF ADEQUATE INCOME

Our projections of income adequacy depend on the share of earnings that we assume retirees need to replace to maintain their preretirement living standards. The projections we have presented so far

assume a replacement rate of 75 percent is required. When we reduce the replacement rate to 60 percent, our projection of the share of early millennials with inadequate retirement income falls from 38 to 29 percent (table 6). When we increase the required replacement rate to 90 percent, the share with inadequate income rises to 46 percent. Under all our replacement rate assumptions, the projected share of financially insecure retirees is substantially higher for the early millennial cohort than for the preboomer cohort.

Projected Percentage of Preboomers and Early Millennials with Inadequate Income at Age 70, by Personal Characteristics
Under alternative adequacy measures

	75% Replacement Rate		60% Replacement Rate		90% Replacement Rate	
	Pre-boomers	Early millennials	Pre-boomers	Early millennials	Pre-boomers	Early millennials
All	28	38	21	29	34	46
Gender						
Men	29	38	22	29	34	45
Women	27	39	21	30	34	47
Race and ethnicity						
Non-Hispanic white	23	33	16	23	29	41
Non-Hispanic Black	35	42	29	34	41	50
Hispanic	54	53	49	45	58	59
Other	37	34	30	25	43	42
Education						
Not high school grad	49	66	43	64	55	70
High school diploma	31	45	22	37	39	53
Some college	23	38	17	26	29	48
Four-year college degree or more	14	28	9	18	17	35
Marital status						
Married	26	35	19	25	32	45
Widowed	29	33	21	25	35	39
Divorced	33	40	27	33	39	46
Never married	39	50	34	42	42	55
Quintile of lifetime earnings						
Bottom	50	64	48	64	52	66
Second	24	35	17	26	33	46
Third	23	35	14	20	32	47
Fourth	25	36	16	21	33	48
Top	17	23	13	17	20	25

Source: Authors' estimates from DYNASIM4 runid 999.
Notes: We classify adults as having inadequate income if their age-70 income falls below 25 percent of the annual average national wage or is insufficient to replace the specified minimum percentage of the average amount they earned from ages 50 to 59 (unless their age-70 income equals or exceeds the annual average national wage). The analysis assumes that scheduled Social Security benefits are paid in full. See the notes to table 3 for details on the income and lifetime earnings measures.

Although our overall estimate of the share of adults with inadequate income at age 70 changes when we vary our replacement rate assumption, the replacement rate does not have much impact on projected income adequacy for adults near the top and bottom of the lifetime earnings distribution. As we increase the replacement rate threshold from 60 to 90 percent, the share of early millennials in the bottom quintile of the lifetime earnings distribution projected to have inadequate retirement income increases only 2 percentage points, and the share in the top lifetime earnings quintile with inadequate income increases only 8 percentage points. Many people with limited lifetime earnings are projected to have inadequate retirement income because their annual income falls below 25 percent of the annual national average wage, not because their projected replacement rate is too low. Many people with substantial lifetime earnings are projected to have adequate income because their income equals or exceeds the annual national average wage, not because they can replace a substantial portion of their preretirement earnings.

Conclusions

How future generations fare in retirement will depend largely on how much they earned and saved when they were younger. Many recent trends are discouraging. Men's labor force participation rates continue to decline before age 55, and their median wages have been stagnant for decades. Early millennials and late gen Xers are continuing the trend toward later marriage that began a few generations ago, and it seems likely that the share of people born in the last half of the 1970s and the first half of the 1980s who marry by their 40s will fall far short of marriage rates for people born in the 1930s. Falling marriage rates threaten retirement security because marriage helps people pool resources, insure against risks, and access Social Security spouse and survivor benefits. People born after 1970 are not accumulating household wealth any faster than those born in the 1960s, reversing the generational growth experienced by earlier cohorts. The collapse in home prices and the stock market in the late 2000s reduced household wealth for nearly a decade. Although median levels of outstanding debt have been falling for the past decade, debt levels remain substantially higher now than they were two decades ago, especially at older ages. Early millennials and late gen Xers are also much less likely than previous generations to own a home in their 30s.

Other trends have been more encouraging, however. Millennial women worked and earned more in their 20s and 30s than now-retired women did at those ages. Labor force participation has risen sharply over the past two decades at older ages, which allows people to receive higher monthly Social Security benefits, save part of their additional earnings, and shrink the period over which their retirement

savings are spread. Millennial men and women are much more likely to have four-year college degrees than previous cohorts. For all cohorts, household net worth grows rapidly with age, and millennials generally seem to be following the path set by earlier cohorts. They continue to accumulate wealth in retirement accounts at a faster rate than much earlier generations. At ages 33 to 38, median per capita household net worth for millennials roughly equals that for late boomers. And the financial turmoil of the late 2000s did not affect millennials much because they were too young to have accumulated much wealth when prices plummeted.

Our DYNASIM4 estimates combine data from multiple high-quality sources to project how these various trends might play out over the next 30 years to shape future retirement incomes. Our projections show that median age-70 income will be higher for early millennials than previous generations, but this group still faces a higher risk of lacking sufficient retirement income to meet basic needs or maintain preretirement living standards. Classifying age-70 income as inadequate if it falls below 25 percent of the annual national average wage or if it replaces less than 75 percent of annual preretirement earnings (unless it equals or exceeds the annual national average wage), we project that 38 percent of early millennials born in the 1980s will have inadequate age-70 income, compared with 28 percent of preboomers (born between 1937 and 1945) and 30 percent of late boomers (born between 1955 and 1964). Retirement security is projected to be especially precarious for early millennials of color, those with little education and limited lifetime earnings, and those who are not married.

These projections assume that Social Security will pay all future retirees the full benefits they are scheduled to receive under current law. However, because Social Security faces a long-term financing shortfall, the program's trustees project that if policymakers fail to act Social Security's trust funds will run out within the next 15 years and the program will be able to pay only about three-quarters of scheduled benefits (Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds 2022). Under that scenario, 48 percent of early millennials are projected to have inadequate income at age 70.

Retirement is still more than two decades away for Americans born in the 1980s, and their financial security in old age will hinge on several factors that have yet to play out. The future course of stock market returns, interest rates, housing prices, and inflation will affect future retirement incomes. How long people work, which depends partly on how health trajectories evolve, will surely help determine financial security for future retirees.

How rapidly future wages grow will also shape future retirement security. Wage growth will depend on labor productivity, which will likely continue to rise, although perhaps more slowly than in the past (Fernald 2016; Gordon 2014). Yet, the relationship between wage growth and labor productivity growth has been weakening, reducing the share of the nation's output that goes to labor. Over the past decade, productivity in the nonfarm business sector increased 12.3 percent, while real labor compensation grew only 5.1 percent (Solow 2015). Declining unionization, the shift from labor to capital, and rising employer health care costs may explain why wages have not been keeping pace with productivity growth (Ginsburg 2014; Karabarbounis and Neiman 2013).

Rising out-of-pocket spending on health care and long-term services and supports poses an additional threat to future retirees' financial security. Although Medicare covers nearly all older adults, out-of-pocket spending on Medicare premiums, premiums for supplemental private insurance, copayments, and uncovered services can be financially burdensome. Hatfield and colleagues (2018) projected that the median share of income that adults ages 65 and older spend on medical services will increase from 10 to 14 percent between 2012 and 2030. Fronstin and VanDerhei (2017) estimated that a 65-year-old man needs $127,000 in savings to be 90 percent certain of covering all future medical expenses, and a 65-year-old woman needs $143,000. Spending on long-term services and supports, which includes nursing home care, residential care, and home care, can be even more burdensome for families because Medicare does not usually cover them, relatively few people have private long-term care insurance, and Medicaid pays only for people who have already depleted virtually all their wealth. Favreault and Dey (2015) projected that people turning 65 today need to set aside $36,000 by age 65 to cover expected lifetime out-of-pocket costs for intensive long-term services and supports, and about 1 in 10 will need to set aside more than $100,000. DYNASIM4 now projects out-of-pocket and third-party spending on medical care and long-term services and supports, and future analyses will incorporate these estimates into studies of retirement income adequacy.

Despite the uncertainty surrounding our projections, current trends indicate that many millennials will likely face serious financial challenges in retirement. If these trends and existing policies continue, people born in the 1980s will be less likely than people born 20, 30, or 40 years earlier to receive sufficient income in retirement to meet basic needs or maintain their preretirement living standards. Millennials who earn relatively little over their lifetime, who are disproportionately people of color, will face the greatest risk.

Policymakers could take action to bolster financial security for future generations of retirees. Shoring up Social Security's finances is a crucial step that would forestall significant benefit cuts and prevent older adults from becoming even more financially fragile. Adding a meaningful minimum benefit

to Social Security and making the benefit formula more progressive would increase payments to low-income retirees. Relaxing eligibility rules for Supplemental Security Income, which provides limited cash benefits to older adults and people with disabilities with very little financial resources, and increasing program payments so that they cover basic needs would also help the most vulnerable retirees. Policymakers could create or strengthen other types of social insurance to support people who develop work disabilities, need help with basic personal care, or experience catastrophic medical expenses. To help workers build retirement savings, policymakers could require employers that offer retirement plans to automatically enroll workers in those plans and periodically increase the share of pay set aside for retirement, a mandate Congress is now considering. Requiring employers that do not offer retirement plans to automatically deposit a portion of workers' pay into individual retirement accounts would also promote retirement savings. Although the current retirement outlook may be grim, sound policy reforms could place millennials on a more secure retirement path.

Appendix Tables

**Percentage of Adults Ages 31 to 35 with a Four-Year College Degree,
by Gender and Birth Cohort**

	Men	Women
1931–35	19.0	9.2
1936–40	19.8	11.1
1941–45	25.8	15.7
1946–50	29.8	21.0
1951–55	28.7	24.3
1956–60	25.1	24.7
1961–65	26.5	26.0
1966–70	30.2	30.5
1971–75	30.7	34.2
1976–80	31.7	37.0
1981–85	36.7	41.5
1986–90	40.0	48.9

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.

TABLE A.2
Men's Labor Force Participation Rates, by Age and Birth Cohort (%)

	Age									
	21–25	**26–30**	**31–35**	**36–40**	**41–45**	**46–50**	**51–55**	**56–60**	**61–65**	**66–70**
1931–35			97.2	96.8	94.6	92.4	88.0	77.5	47.3	27.9
1936–40		97.4	97.1	95.4	94.8	92.3	87.9	75.7	50.5	29.1
1941–45	87.8	95.8	96.2	95.6	93.5	92.3	85.1	74.9	53.6	36.0
1946–50	84.7	94.8	96.8	94.8	93.9	90.9	85.6	75.4	54.4	33.9
1951–55	86.7	94.4	95.1	95.0	91.6	89.8	85.0	76.2	58.0	34.5
1956–60	87.6	94.1	94.1	92.8	91.9	89.8	83.4	75.6	58.1	
1961–65	87.9	93.6	94.0	93.3	91.2	87.6	84.0	74.9		
1966–70	86.3	93.5	94.0	92.7	89.8	88.5	83.7			
1971–75	85.8	92.2	93.3	91.8	90.5	87.8				
1976–80	85.1	91.4	90.9	89.9	87.9					
1981–85	83.2	88.7	90.8	90.6						
1986–90	78.2	89.2	90.0							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: The labor force participation rate is the share of the civilian noninstitutionalized population that is working or looking for work.

TABLE A.3
Women's Labor Force Participation Rates, by Age and Birth Cohort (%)

	Age									
	21–25	26–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	66–70
1931–35			40.4	51.6	58.0	64.5	60.9	52.8	34.5	18.0
1936–40		37.4	47.0	58.4	67.0	68.1	64.9	55.9	37.3	20.8
1941–45	48.2	44.7	54.4	66.4	72.3	73.8	70.3	59.6	42.0	25.2
1946–50	55.6	57.1	66.9	72.8	78.1	77.3	72.5	63.5	47.0	25.7
1951–55	64.3	67.0	71.4	75.3	78.5	79.1	73.3	65.3	47.1	24.8
1956–60	69.4	70.8	73.6	76.9	79.2	77.2	72.3	65.6	48.3	
1961–65	72.0	73.2	74.0	77.7	77.3	76.0	72.5	65.4		
1966–70	70.7	75.1	75.7	74.7	76.8	75.3	73.7			
1971–75	72.7	76.1	73.2	75.1	74.9	76.0				
1976–80	74.9	73.8	73.1	74.9	74.6					
1981–85	71.6	73.5	73.1	74.5						
1986–90	70.4	75.2	75.1							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: The labor force participation rate is the share of the civilian noninstitutionalized population that is working or looking for work.

TABLE A.4
Men's Full-Time Employment Rates, by Age and Birth Cohort (%)

	Age									
	21–25	26–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	66–70
1931–35			92.4	91.5	87.9	85.3	79.5	68.0	35.9	16.1
1936–40		90.8	90.9	88.8	87.8	84.4	78.5	65.2	38.7	18.8
1941–45	74.0	88.1	88.6	88.2	85.1	83.8	78.1	66.3	42.8	21.9
1946–50	64.8	83.6	87.6	85.8	85.1	83.6	78.3	66.3	41.7	22.6
1951–55	64.4	81.6	84.5	85.0	83.1	83.6	77.1	63.2	46.9	24.4
1956–60	65.8	81.2	83.0	84.4	85.5	82.6	70.8	66.2	47.8	
1961–65	64.1	79.7	84.3	86.8	83.7	73.7	76.3	65.2		
1966–70	62.1	80.3	86.4	84.8	75.6	80.4	74.0			
1971–75	61.4	81.7	84.4	77.7	81.5	78.5				
1976–80	63.3	79.6	75.1	80.8	77.6					
1981–85	60.0	69.0	79.8	79.5						
1986–90	45.0	75.2	78.6							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: The table shows the percentage of civilian noninstitutionalized men working at least 35 hours per week.

TABLE A.5
Women's Full-Time Employment Rates, by Age and Birth Cohort (%)

	21–25	26–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	66–70
						Age				
1931–35			27.3	34.6	37.5	45.5	42.6	36.8	20.4	7.2
1936–40		26.4	29.8	38.5	46.5	49.4	47.9	41.0	23.4	10.1
1941–45	37.2	30.3	34.0	44.1	51.9	55.6	53.3	45.1	28.1	12.5
1946–50	39.9	40.5	44.6	50.8	58.2	60.1	57.9	48.1	31.5	13.5
1951–55	43.3	48.4	48.8	54.0	58.7	62.6	57.4	47.3	32.8	13.7
1956–60	48.1	51.0	53.0	55.4	60.6	60.5	54.0	50.5	35.2	
1961–65	46.9	54.3	53.5	57.6	58.0	55.1	56.6	50.2		
1966–70	46.1	56.2	56.7	55.9	55.2	58.2	57.0			
1971–75	45.9	60.0	54.2	53.3	57.9	59.7				
1976–80	48.1	56.0	51.8	56.6	58.2					
1981–85	43.3	51.8	55.6	57.4						
1986–90	36.0	56.9	58.4							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: The table shows the percentage of civilian noninstitutionalized women working at least 35 hours per week.

TABLE A.6
Inflation-Adjusted Median Earnings for Full-Time Male Workers, by Age and Birth Cohort
Inflation-adjusted 2021 dollars

	21–25	26–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	66–70
						Age				
1931–35			55,050	62,700	64,980	65,960	64,940	60,950	59,440	52,600
1936–40		49,300	62,040	64,430	65,520	66,870	65,350	59,440	57,110	49,620
1941–45	37,400	55,610	62,540	64,080	67,350	67,620	63,350	63,130	64,940	59,350
1946–50	41,170	52,920	57,170	64,220	65,350	66,910	67,990	66,260	65,280	65,520
1951–55	37,520	49,090	56,770	59,410	62,840	66,130	66,260	62,910	65,520	68,000
1956–60	36,120	48,110	53,470	57,740	63,130	64,940	62,310	65,520	65,000	
1961–65	31,270	43,560	50,950	60,120	60,960	61,720	62,240	64,000		
1966–70	29,700	42,460	54,110	59,630	59,350	65,520	66,000			
1971–75	28,440	45,090	53,010	59,350	63,330	70,000				
1976–80	31,260	42,410	49,850	58,970	67,000					
1981–85	30,320	42,730	54,600	62,500						
1986–90	29,670	43,680	55,000							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Notes: Estimates are rounded to the nearest $10. The analysis defines full-time employment as 35 or more work hours per week.

TABLE A.7

Inflation-Adjusted Median Earnings for Full-Time Female Workers, by Age and Birth Cohort

Inflation-adjusted 2021 dollars

	Age									
	21–25	**26–30**	**31–35**	**36–40**	**41–45**	**46–50**	**51–55**	**56–60**	**61–65**	**66–70**
1931–35			55,050	62,700	64,980	65,960	64,940	60,950	59,440	52,600
1936–40		49,300	62,040	64,430	65,520	66,870	65,350	59,440	57,110	49,620
1941–45	37,400	55,610	62,540	64,080	67,350	67,620	63,350	63,130	64,940	59,350
1946–50	41,170	52,920	57,170	64,220	65,350	66,910	67,990	66,260	65,280	65,520
1951–55	37,520	49,090	56,770	59,410	62,840	66,130	66,260	62,910	65,520	68,000
1956–60	36,120	48,110	53,470	57,740	63,130	64,940	62,310	65,520	65,000	
1961–65	31,270	43,560	50,950	60,120	60,960	61,720	62,240	64,000		
1966–70	29,700	42,460	54,110	59,630	59,350	65,520	66,000			
1971–75	28,440	45,090	53,010	59,350	63,330	70,000				
1976–80	31,260	42,410	49,850	58,970	67,000					
1981–85	30,320	42,730	54,600	62,500						
1986–90	29,670	43,680	55,000							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Notes: Estimates are rounded to the nearest $10. The analysis defines full-time employment as 35 or more work hours per week.

TABLE A.8

Percentage of Men Married, by Age and Birth Cohort

	Age									
	21–25	**26–30**	**31–35**	**36–40**	**41–45**	**46–50**	**51–55**	**56–60**	**61–65**	**66–70**
1931–35			88.5	88.7	86.9	84.3	81.9	81.6	81.1	80.2
1936–40		82.1	87.6	86.5	82.7	81.4	81.2	81.5	79.5	75.8
1941–45	58.7	80.4	83.3	80.4	80.2	78.0	78.1	77.1	77.9	75.1
1946–50	53.8	73.7	75.9	78.0	76.4	77.2	76.8	76.2	73.4	73.7
1951–55	46.5	63.6	71.0	72.3	72.8	71.7	72.6	69.9	72.3	71.1
1956–60	36.4	57.6	66.6	70.6	70.9	70.7	69.5	68.2	67.8	
1961–65	30.3	54.0	64.9	68.9	70.1	66.8	67.1	67.8		
1966–70	25.1	51.0	64.4	69.4	67.4	67.9	67.2			
1971–75	24.5	48.4	64.5	67.1	69.3	68.8				
1976–80	21.4	46.3	58.0	67.1	66.7					
1981–85	18.4	39.2	55.4	62.8						
1986–90	14.7	36.3	52.9							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.

TABLE A.9
Percentage of Women Married, by Age and Birth Cohort

	21–25	26–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	66–70
					Age					
1931–35			86.5	83.4	81.2	75.8	72.6	69.1	63.4	56.8
1936–40		85.9	83.4	78.9	75.6	72.9	71.1	68.2	62.9	58.0
1941–45	71.7	80.7	79.1	75.9	72.1	69.2	69.6	65.0	61.8	57.1
1946–50	65.1	75.3	73.0	72.2	70.0	69.6	66.8	64.5	61.6	57.6
1951–55	56.4	67.2	70.1	70.1	68.0	67.6	64.8	64.4	61.7	57.6
1956–60	48.1	62.3	67.5	68.2	68.3	66.6	64.6	62.5	59.2	
1961–65	43.7	59.3	66.0	68.6	65.8	64.8	64.0	62.0		
1966–70	36.8	56.5	65.6	65.9	66.4	65.6	64.4			
1971–75	32.7	54.7	65.5	64.0	64.9	65.0				
1976–80	30.6	53.4	61.6	64.5	66.1					
1981–85	27.5	47.2	58.0	64.0						
1986–90	21.4	42.8	57.5							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.

TABLE A.10
Percentage of Adults Owning a Home, by Age and Birth Cohort

	21–25	26–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	66–70
					Age					
1931–35					75.9	79.7	79.2	79.7	81.1	80.8
1936–40				72.0	77.8	75.4	77.6	79.1	79.7	78.5
1941–45			66.2	73.8	71.5	74.3	76.9	79.0	80.4	79.7
1946–50		49.6	64.9	66.7	69.7	74.0	77.3	79.5	77.8	77.7
1951–55	21.1	48.1	56.2	63.4	69.0	73.4	75.4	76.0	75.3	77.2
1956–60	21.9	38.8	53.0	63.0	70.4	73.0	71.8	73.3	74.6	
1961–65	15.5	34.6	54.1	65.1	70.3	68.3	69.5	71.7		
1966–70	12.4	36.6	56.2	65.4	65.9	65.0	68.8			
1971–75	12.9	37.4	56.4	58.4	61.1	66.1				
1976–80	14.8	38.9	48.3	54.1	62.9					
1981–85	15.4	31.4	43.8	56.3						
1986–90	11.0	27.7	47.9							

Source: Authors' estimates from the Annual Social and Economic Supplement to the Current Population Survey, 1966 to 2021.
Note: The analysis classifies respondents who live in an owner-occupied housing unit as not owning a home if they are not the household head or the spouse or unmarried partner of the household head.

TABLE A.11

Percentage of Adults with Positive Home Equity, by Age and Birth Cohort

	Age									
	21–26	**27–32**	**33–38**	**39–44**	**45–50**	**51–56**	**57–62**	**63–68**	**69–74**	**75–80**
1933–38						80.8	82.6	83.5	86.7	82.7
1939–44					77.1	82.2	83.7	84.8	83.2	84.4
1945–50				72.3	74.1	81.4	83.5	81.7	84	
1951–56			64.7	71.2	77.3	80.7	72	78.7		
1957–62		50	57.8	72	76.3	66.6	77.8			
1963–68	29.8	49	64	69.8	61.2	72.3				
1969–74	23.8	52.1	63.1	56.6	68.7					
1975–80	26.8	53	50.8	64.4						
1981–86	22.8	41.6	56.8							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.

Notes: Estimates are restricted to household heads and their spouses. Home equity is the value of a primary residence minus any outstanding housing debt, such as mortgages and home equity loans.

TABLE A.12

Median per Capita Value of Home Equity for Equity Holders, by Age and Birth Cohort

Inflation-adjusted 2021 dollars

	Age									
	21–26	**27–32**	**33–38**	**39–44**	**45–50**	**51–56**	**57–62**	**63–68**	**69–74**	**75–80**
1933–38						76,500	61,300	88,000	107,200	87,200
1939–44					67,700	64,000	93,300	122,800	104,700	106,000
1945–50				66,600	55,100	78,000	108,500	91,900	124,500	
1951–56			43,700	39,100	58,900	98,000	78,800	106,000		
1957–62		28,400	32,000	52,500	84,900	69,800	96,500			
1963–68	18,600	19,600	36,000	65,300	60,500	82,100				
1969–74	16,900	24,500	49,000	41,900	72,100					
1975–80	13,800	28,100	28,500	56,200						
1981–86	17,000	22,100	46,100							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.

Notes: Estimates are rounded to the nearest $100. The sample is restricted to household heads and their spouses in households with positive home equity. Home equity is the value of a primary residence minus any outstanding housing debt, such as mortgages and home equity loans. The analysis divides household estimates by two for married adults.

TABLE A.13
Median per Capita Household Financial Wealth for Wealth Holders, by Age and Birth Cohort
Inflation-adjusted 2021 dollars

	Age									
	21–26	27–32	33–38	39–44	45–50	51–56	57–62	63–68	69–74	75–80
1933–38						27,900	35,600	60,200	43,600	31,400
1939–44					17,200	31,000	65,600	56,200	56,100	39,900
1945–50				17,000	24,500	57,900	69,500	53,000	49,100	
1951–56			11,900	16,900	38,000	59,300	41,900	45,900		
1957–62		5,300	11,000	32,200	36,100	28,700	47,200			
1963–68	1,600	8,400	15,500	21,900	23,100	36,600				
1969–74	1,700	9,100	12,100	19,000	29,200					
1975–80	2,300	7,500	8,500	22,200						
1981–86	2,200	5,200	13,900							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are rounded to the nearest $100. The sample is restricted to household heads and their spouses in households with positive financial wealth. Financial wealth includes retirement account balances plus financial assets held outside of retirement accounts, including the value of bank accounts, certificates of deposit, annuities, trusts, stocks, bonds, mutual funds, and the cash value of life insurance. The analysis divides household estimates by two for married adults.

TABLE A.14
Percentage of Adults with Retirement Accounts, by Age and Birth Cohort

	Age									
	21–26	27–32	33–38	39–44	45–50	51–56	57–62	63–68	69–74	75–80
1933–38						54.8	55.3	48.9	49.1	34.5
1939–44					52.5	58.0	67.1	55.3	47.4	41.6
1945–50				54.8	58.2	67.8	66.0	55.4	49.6	
1951–56			49.7	60.9	64.7	69.7	61.1	52.6		
1957–62		39.1	56.4	66.9	66.5	62.0	59.4			
1963–68	15.7	53.4	62.0	63.0	61.0	61.9				
1969–74	29.2	57.2	57.8	62.1	60.7					
1975–80	36.7	52.7	54.2	60.2						
1981–86	34.6	50.0	58.2							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are restricted to household heads and their spouses. Retirement accounts include IRAs, Keogh accounts, and employer-sponsored retirement accounts, such as 401(k) plans.

TABLE A.15

Median per Capita Value of Retirement Accounts for Account Holders, by Age and Birth Cohort

Inflation-adjusted 2021 dollars

	21–26	27–32	33–38	39–44	45–50	51–56	57–62	63–68	69–74	75–80
						Age				
1933–38						27,300	34,700	81,100	45,700	69,800
1939–44					17,500	31,100	46,700	86,400	98,900	66,200
1945–50				15,300	28,400	60,400	87,600	100,000	106,000	
1951–56			9,800	17,800	33,700	65,300	76,800	106,000		
1957–62		4,400	12,400	30,600	52,300	70,700	106,000			
1963–68	2,200	8,000	17,600	33,100	54,100	84,300				
1969–74	2,300	8,000	19,600	34,900	67,300					
1975–80	2,700	9,100	21,200	53,000						
1981–86	3,300	11,500	21,200							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are rounded to the nearest $100. The sample is restricted to household heads and their spouses in households with at least one retirement account. Retirement account balances include the value of IRAs, Keogh accounts, and employer-sponsored retirement accounts, such as 401(k) plans. The analysis divides household estimates by two for married adults.

TABLE A.16

Percentage of Adults with Outstanding Household Debt, by Age and Birth Cohort

	21–26	27–32	33–38	39–44	45–50	51–56	57–62	63–68	69–74	75–80
						Age				
1933–38						85.7	72.7	65.9	60.1	53.1
1939–44					88.1	83.4	75.5	74.6	62.5	55.5
1945–50				91.1	87.5	81.9	81.9	72.4	68.6	
1951–56			89.7	88.0	86.8	87.8	80.5	74.7		
1957–62		88.3	89.0	91.3	87.5	81.9	79.1			
1963–68	79.8	88.1	88.8	87.0	86.9	84.8				
1969–74	81.9	87.4	89.2	86.9	87.9					
1975–80	81.7	89.3	85.5	87.8						
1981–86	83.0	81.2	91.6							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are restricted to household heads and their spouses. Debt includes outstanding housing debt, installment loans, credit card balances, and other debt held by a household.

TABLE A.17

Median per Capita Value of Outstanding Household Debt for Debt Holders, by Age and Birth Cohort

Inflation-adjusted 2021 dollars

	21–26	27–32	33–38	39–44	45–50	51–56	57–62	63–68	69–74	75–80
1933–38						18,600	22,500	14,500	20,900	20,900
1939–44					28,400	35,700	26,800	42,700	26,200	22,800
1945–50				41,500	43,300	45,100	50,300	36,100	30,700	
1951–56			41,600	46,200	55,100	71,200	47,900	28,600		
1957–62		24,500	40,900	58,900	79,100	68,400	41,100			
1963–68	11,800	32,900	57,400	84,900	67,300	64,500				
1969–74	12,600	46,000	83,200	72,600	77,900					
1975–80	15,300	59,500	69,800	86,800						
1981–86	18,500	45,000	74,200							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are rounded to the nearest $100. The sample is restricted to household heads and their spouses in households with outstanding debt. Debt includes outstanding housing debt, installment loans, credit card balances, and other debt held by a household. The analysis divides household estimates by two for married adults.

TABLE A.18

Median per Capita Household Net Worth, by Age and Birth Cohort

Inflation-adjusted 2021 dollars

	21–26	27–32	33–38	39–44	45–50	51–56	57–62	63–68	69–74	75–80
1933–38						131,100	143,900	183,800	170,700	150,800
1939–44					122,000	146,500	223,700	230,600	185,900	198,600
1945–50				101,400	97,100	174,600	225,800	188,400	211,400	
1951–56			57,300	69,200	120,200	195,700	142,900	179,500		
1957–62		23,600	46,200	98,500	150,500	112,700	187,900			
1963–68	5,600	26,800	50,100	95,400	82,900	134,100				
1969–74	7,100	26,300	62,700	54,100	109,700					
1975–80	6,300	20,900	25,400	91,400						
1981–86	5,600	12,400	44,000							

Source: Authors' estimates from the Survey of Consumer Finances, 1989 to 2019.
Notes: Estimates are rounded to the nearest $100. The sample is restricted to household heads and their spouses. Net worth includes the value of a primary residence, other real estate, financial assets (including retirement accounts), and other real assets minus outstanding debt. The analysis divides household estimates by two for married adults.

Notes

[1] For consistency with the data sources used in this report, we use the term "Hispanic" to refer to people of Latin American origin living in the United States. However, we recognize that the terms "Latinx" and "Latine" may better reflect how this group self-identifies.

[2] We accessed CPS data through the Integrated Public Use Microdata Series (Ruggles et al. 2015).

[3] For more information about DYNASIM4 and an earlier version of the model, see Urban Institute (2015) and Favreault, Smith, and Johnson (2015).

[4] We model the balanced benefit scenario after a Social Security reform proposal developed by the Bipartisan Policy Center's Commission on Retirement Security and Personal Savings (Bipartisan Policy Center 2016). That proposal would increase Social Security revenues by increasing the payroll tax rate, raising the maximum taxable earnings level, and increasing taxes on benefits for higher-income beneficiaries. It would cut benefits by indexing the retirement age to longevity, capping the spousal benefit, reducing cost-of-living adjustments, and cutting benefits for higher-income beneficiaries. The proposal would also increase payments to lower-income beneficiaries by establishing a basic minimum benefit and enhancing survivor benefits. The commission projected that Social Security would attain long-range solvency if the proposal had been implemented in 2016, but not if implemented later. We revised the proposal to include more revenue for Social Security and additional benefit cuts so that it would achieve long-range solvency if implemented in 2023.

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