

# **Reducing Retirement Inequality**

## **Building Wealth and Old-Age Resilience**

Edited by

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and  
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## Chapter 3

# **Changes in Racial Gaps in Retirement Security over Time**

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*Karen Dynan and Douglas Elmendorf*

This chapter explores changes over time in how prepared Americans are for retirement, with a focus on differences by race. Well-documented changes such as the decline in the prevalence of defined benefit (DB) pensions (Butrica and Wozniak 2009) and the limited savings being accumulated by many families (Dynan and Wozniak 2021) have raised questions about whether today's retirees and near-retirees will be as financially secure in their later years as were earlier cohorts. Understanding heterogeneity in financial security is especially important as the country considers possible changes in policies related to personal saving, pensions, social security, and other government programs that support older Americans.

The importance of understanding heterogeneity in retirement preparation by race has been underscored by a growing literature that documents stark differences in wealth by race. Bhutta et al. (2020) report that the typical Black family in 2019 had less than 15 percent of the wealth of the typical White family, and the typical Hispanic family had wealth not much higher than the typical Black family. The same study shows that the wealth of Black families, as well as the gap between the median wealth of Blacks and Whites, have changed little, on net, since the onset of the Great Recession. The low wealth of many Black families threatens various aspects of their economic security, including well-being in retirement (United States Department of the Treasury 2023).

Yet racial disparities in conventional wealth measures—which typically capture just financial and nonfinancial assets—do not translate directly into disparities in retirement security. Racial differences in DB pension payments and social security payments need to be considered as well, as do other factors such as family structure. The main dataset used for our analysis, the Panel Study of Income Dynamics (PSID), is sufficiently comprehensive to allow us to consider many of these factors, at least

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to some degree. In addition, the PSID oversamples low-income families, which means that it has a relatively large number of minority participants, allowing for more precise estimates of racial gaps.

We find that, between 2001 and 2019, the median ratio of wealth to income declined by about 15 percent for families with White heads in their 50s and dropped by nearly 60 percent for families with Black heads in their 50s.<sup>1</sup> The sharpest declines occurred following the Great Recession, and we find that long-term unemployment (which Black-headed families were about twice as likely to experience) is correlated with a smaller post-recession recovery in wealth. In addition, declines in home ownership during the early- and mid-2010s, especially for Black-headed families, meant that fewer families benefited from the post-recession recovery in home prices. The prevalence of DB pensions also fell sharply between 2001 and 2019, with only 27 percent of families with White heads in their 50s and only 15 percent of families with Black heads in their 50s reporting a DB plan in 2019. Altogether, these developments contributed to declines in estimated income replacement rates for families near retirement; on average, projected retirement replacement rates were about 9 percentage points lower for families with White heads and about 8 percentage points lower for families with Black heads in 2019 than in 2005. For low- and middle-income families, estimated income replacement rates are fairly similar for Black-headed and White-headed families—reflecting the importance of social security benefits for these groups—but for high-income families, estimated income replacement rates tend to be lower for Black-headed than White-headed families. These results represent a significant challenge for policymakers who are concerned about households' consumption in retirement.

### **Background**

There is a long history of research on whether Americans are financially prepared for retirement.<sup>2</sup> A running theme in this literature is the need to revisit the question over time, as many evolving factors influence prospects for retirement security. For example, household lifetime earnings have evolved over time due to changes in labor force participation, educational attainment, and productivity growth. Changing patterns of asset ownership and trends in financial returns have influenced how savings accumulate over the life cycle. The decline in DB pensions and the rise of defined contribution (DC) accounts have had substantial effects on the financial resources that families can tap into in their older years. Family structure and the cost

of living (including the cost of long-term care and medical expenses not covered by insurance) also have changed in ways that shape spending needs in retirement.

In addition, the large macroeconomic shocks of the past few decades have left significant imprints on Americans' preparedness for retirement. For example, Dettling et al. (2018) document the deep scars on household finances caused by the Great Recession. In 2016, nearly a decade after the start of the recession, the average wealth of working-age families in the lowest and next lowest 30 percent of the income distribution was down from pre-recession highs, by 31 percent and 35 percent respectively. Dynan and Wozniak (2021) show that working-age families in the lowest three income quintiles experienced only a modest catch-up in their net worth between 2016 and 2019, notwithstanding the strong labor market conditions of that period.

The COVID-19 pandemic presumably also left a large imprint, although the data needed to form a comprehensive assessment of that imprint (such as the 2021 wave of the PSID and the 2022 wave of the Survey of Consumer Finances (SCF)) have not yet been released to the public.<sup>3</sup> Other available evidence does not provide a clear picture.<sup>4</sup> Checking account balances for customers of a large commercial bank jumped dramatically in 2020, even for those near the bottom of the distribution (Wheat and Deadman 2022); this was presumably because of the combination of generous fiscal support and pandemic-constrained consumption. But those balances later fell considerably from their peaks, and 2022 saw a sharp rise in the fraction of families reporting they were having difficulty meeting expenses (Gilligan 2022). Average wage growth was strong in 2021 and 2022, but the high inflation in those years meant that spending power associated with earnings declined on net for most workers (Dynan and Powell 2022), making saving more difficult.

Moreover, macroeconomic, financial, and institutional developments often have differential impacts on population subgroups. Understanding the implications of these differences for retirement security is crucial for evaluating possible changes in policies that affect savings and pensions as well as possible changes in public programs that provide benefits for older Americans. For example, at some point in the coming decade, policymakers will need to address the looming financial shortfall in the social security program, without harming the more vulnerable among the older population.

Understanding racial gaps in retirement preparedness should be an important component of this research agenda. Recent decades have seen little progress in narrowing the vast racial gaps in conventional measures of wealth, which include financial and nonfinancial assets held directly.

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Derenoncourt et al. (2022) present an analysis of the estimated Black–White wealth gap back to the mid-1800s. The authors show that the gap closed from 60-to-1 in 1860 to 10-to-1 in the 1920s and to 7-to-1 in the 1950s, but that there has been very little further narrowing over the last 70 years.

However, gaps in conventional measures of wealth offer only a partial picture of retirement preparedness. Sabelhaus and Volz (2022) document the importance of considering DB pension wealth and projected social security benefits when evaluating heterogeneity in retirement preparation. Their findings suggest that the difference in preparation across income levels is somewhat smaller, on average, when incorporating these other sources of financial support.

The literature regarding racial gaps in pension coverage is, as of yet, fairly limited, yet it suggests that gaps in social security and DB wealth are very large, if not as vast as the gaps in conventional wealth measures. Veghte et al. (2016) show that the median White family approaching retirement in 2013 had slightly more than twice as much social security wealth as the median Black family, and about 50 percent more than the median Hispanic family. Thompson and Volz (2021) find that half of White families nearing retirement in the late 1980s were covered by DB pensions, compared with about one-third of Black families and one-quarter of Hispanic families; however, with the decline in the prevalence of DB pensions, these gaps have mostly (or entirely, in the case of the Black–White gap) disappeared. In line with these results, Sabelhaus and Thompson (2022) find that racial disparities are somewhat smaller when conventional wealth is augmented by DB pension wealth.<sup>5</sup>

Three other chapters in this current volume address the intersection of racial wealth gaps and financial preparedness for retirement, offering results that are complementary to our findings. Aubry et al. (2025) emphasize that inheritances can reinforce inequality across generations, and that the existence and structure of wills can significantly affect the value of inheritances. Compared with White individuals, Black and Hispanic individuals are less likely to have wills and generally have less wealth to bequeath, putting their descendants at a further disadvantage. Suarez et al. (2025) examine retirement wealth using the SCF. They find that social security benefits are a crucial part of retirement wealth, especially for Black and Hispanic families, and that DB pensions are an important part of wealth for Black families in the top portion of the wealth distribution. Wolff (2025) also uses data from the SCF. He concludes that retirement income replacement rates for Black and Hispanic households rose in absolute terms, and relative to those for White households, between 1989 and 2007, but that replacement rates for Black households declined between 2007 and 2019; we also find a reduction in income replacement rates for Black households between 2005 and 2019.



## Data

Our analysis is based primarily on the Panel Study of Income Dynamics (PSID), a longitudinal survey that has collected data on the same families (and their descendants, as well as families added over time) since the late 1960s. It includes information about a wide range of family traits, including demographics, household structure, employment, income, health spending, assets, debt, financial distress, and pension coverage. Families were interviewed annually through 1997, and since then, they have been interviewed biennially. Our analysis focuses principally on families approaching retirement. To offer a sense of our sample size, in each wave of the PSID that we examine in our 20-year sample, we have adequate information about future retirement security to conduct our analysis for about 1,400 to 1,700 families with family heads in their 40s, and about 800 to 1,600 with heads in their 50s.<sup>6</sup>

The availability of information varies by wave, with more detailed questions about some key household traits added over time. For example, the PSID began collecting wealth data every five years in 1984, and it switched to collecting data every wave from 1999 onward. Some basic measures of household consumption (e.g., spending on food) are available back to the early years of the study, but more comprehensive measures of consumption can be constructed back only to the late 1990s and early 2000s.

One advantage of using the PSID to evaluate heterogeneity in retirement security is its longitudinal nature, which means that we have full histories of many family outcomes that bear on their current and future economic security, such as their labor market experiences, incomes, asset ownership, and spending patterns. This feature allows for analysis that complements prior research using cross-sectional household survey datasets like the SCF (which at best rely on respondent recall of earnings or synthetic cohorts), and studies done with longitudinal administrative sources such as tax data or social security earnings records (which have little information about people beyond their income histories). The longitudinal nature of the PSID allows us to estimate the impact on retirement security of events such as extended job loss and house price cycles. In principle, the PSID earnings histories can also be used to estimate social security and DB wealth, although this chapter takes a somewhat different approach because of concerns that underreporting of income would cause bias in such estimates (particularly if the degree of underreporting changes over time).<sup>7</sup>

A key advantage of using the PSID to evaluate heterogeneity by race is the relatively large number of minority-headed families in the survey. Because understanding poverty dynamics was an original goal of the study, the PSID was designed to include an oversample of low-income families; given the correlation of race and ethnicity with income, that oversample includes a

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significant number of families with Black heads. As a result, depending on the survey wave, our findings are based on between 750 and more than 1,200 families with Black heads in their 40s or 50s. Having a fairly large number of lower-income Black-headed families means that there is less noise in our analysis of levels and trends in their retirement security than would be the case with other commonly used household surveys.<sup>8,9</sup>

The PSID also has limitations relative to some other data sources used to gauge retirement security. In particular, the PSID's information about household wealth is far less detailed than the information available in the SCF. One issue is that wealth at the very top of the distribution is poorly covered in the PSID, as highlighted by Bosworth and Smart (2009) and Pfeffer et al. (2016); however, retirement security for the wealthiest is presumably strong, so this limitation is not key for the issue we are studying. Of greater concern is that data about DC and DB wealth in the PSID are limited (particularly in earlier years, and despite the existence of a pension module) and difficult to use. Indeed, as Cooper et al. (2019) flag, the PSID summary measures of wealth do not include assets in DC retirement accounts.<sup>10</sup> Those authors discuss how to augment PSID wealth with estimated DC assets, generating estimated overall financial and nonfinancial wealth totals that align well with the SCF for most of the distribution at least back to the early 2000s. We use these methods in what follows, although the adjustment limits our analysis to beginning in 2001 because reliable estimates of the value of DC accounts are first available in that year.

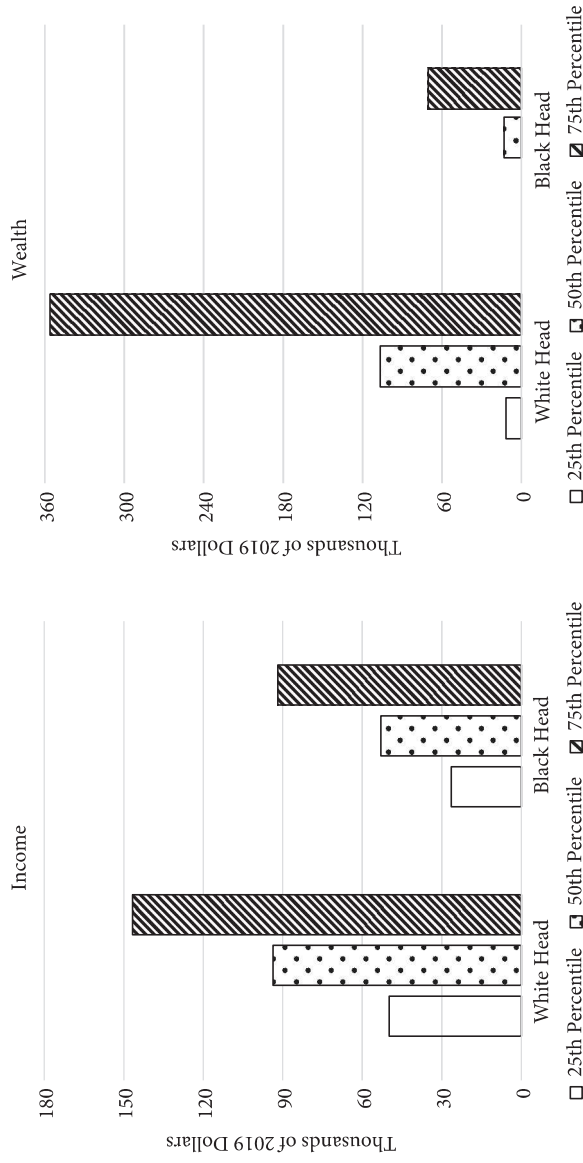
A related issue is that families often appear to underreport their retirement assets in some surveys; see, for example, Bee and Mitchell (2017). Such underreporting probably also occurs in the PSID, and thus our estimates of retirement income replacement rates should be considered lower bounds. Nevertheless, conclusions based on estimated differences in racial gaps over time would be affected only if trends in underreporting differ by race.

### **Results on Wealth**

We begin presenting results by focusing on income, wealth, and key components of wealth. In the following section we put these pieces together and provide estimates of replacement rates of income in retirement.

#### **Finding 1: Racial gaps in income and wealth are very large**

Analysis from the PSID corroborates findings from studies based on other data sources pointing to substantial racial gaps in income and enormous racial gaps in wealth. Figure 3.1 document the gaps as of 2019 for families with heads in their 40s and 50s.



**Figure 3.1** Real money income and real non-pension wealth for families with White and Black household heads in their 40s and 50s

*Note:* Real money income defined as the sum of the taxable income, transfer income, and social security income of all family members for the previous calendar year, adjusted using the current-methods CPI to 2019 dollars. Real wealth defined as the sum of non-financial assets, financial assets (including the value of DC retirement accounts) minus liabilities at the time of the survey, adjusted using the current-methods CPI to 2019 dollars; it does not include the value of future DB pension income or social security income. Statistics calculated using weights.

*Source:* Authors' calculations based on the Panel Study of Income Dynamics.

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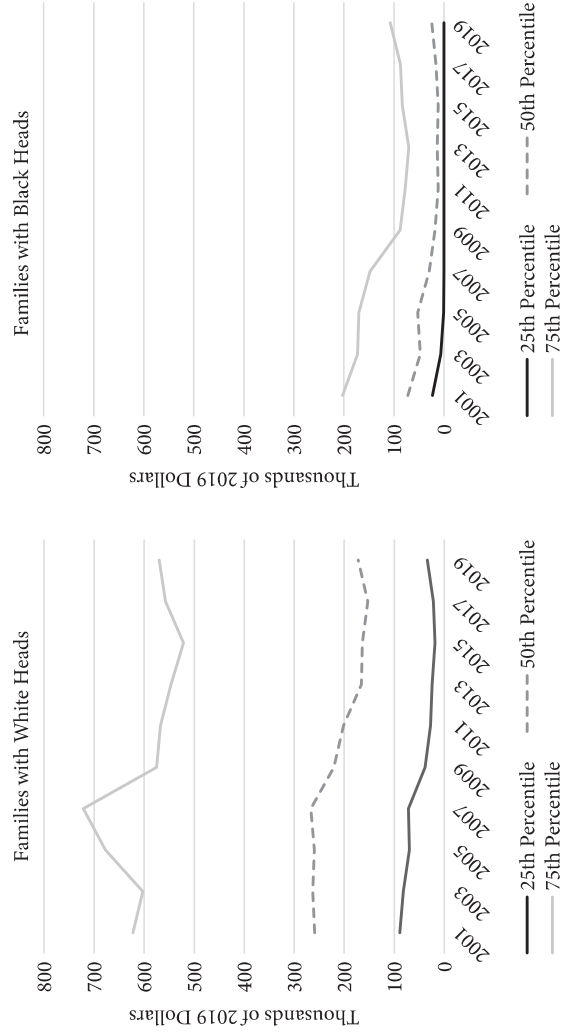
We define money income as the sum of taxable income, transfer income, and social security income of all family members. We define wealth as the sum of assets (the value of a primary residence, other real estate, farms, businesses, vehicles, stocks, bonds, IRAs, 401(k)-type accounts, checking and savings accounts, and other assets, including the value of DC retirement accounts) minus liabilities (debt associated with homes, other real estate, farms, businesses, and vehicles; as well as unsecured debt, such as credit card debt, medical debt, and student debt), not including the value of future defined-benefit pension income or social security income wealth. As noted above, the value of DC accounts is not part of the standard PSID wealth measures, so we calculate it based on information in the PSID pension module following the methodology suggested by Cooper et al. (2019). We adjust all income and wealth values to 2019 dollars using the current-methods Consumer Price Index.

To explore retirement preparedness at different points in the distributions of income and wealth, we look at the 25th, 50th, and 75th percentiles of those distributions for White-headed families and the same points in those distributions for Black-headed families. For the 2019 wave of the PSID (for which reported income corresponded to the previous calendar year), White-headed families at the 25th percentile reported income that was close to double that reported by Black-headed families (\$50,000 versus \$26,000). At the 50th percentiles, the income of White-headed families was 75 percent higher than that of Black-headed families (\$94,000 versus \$53,000), and, at the 75th percentiles, the income of White-headed families was 60 percent higher than that of Black-headed families (\$147,000 versus \$92,000).

The disparities between White- and Black-headed families are even more stark for wealth. At the 25th percentiles of the distributions in 2019, White-headed families had wealth of about \$12,000 and Black-headed families had zero wealth. At the 50th percentiles, White-headed families had about eight times as much wealth as Black-headed families (\$107,000 compared with \$13,000), and at the 75th percentiles, White-headed families had about five times as much wealth as Black-headed families (\$356,000 compared with \$71,000).

### **Finding 2: White and Black families nearing retirement in 2019 had substantially lower wealth across much of the distribution than their counterparts in 2001**

For families with White heads in their 50s, median real wealth fell from \$260,000 in 2001 to \$172,000 in 2019 (34 percent), while median real wealth for families with Black heads in their 50s dropped from \$72,000 to \$24,000 between those years (67 percent), as shown



**Figure 3.2** Real wealth at different points in the distribution for families with White and Black heads in their 50s

*Note:* Real wealth defined as the sum of non-financial assets, financial assets (including the value of DC retirement accounts) minus liabilities at the time of the survey, adjusted using the current-methods CPI to 2019 dollars; it does not include the value of future DB pension income or social security income. Statistics calculated using weights.

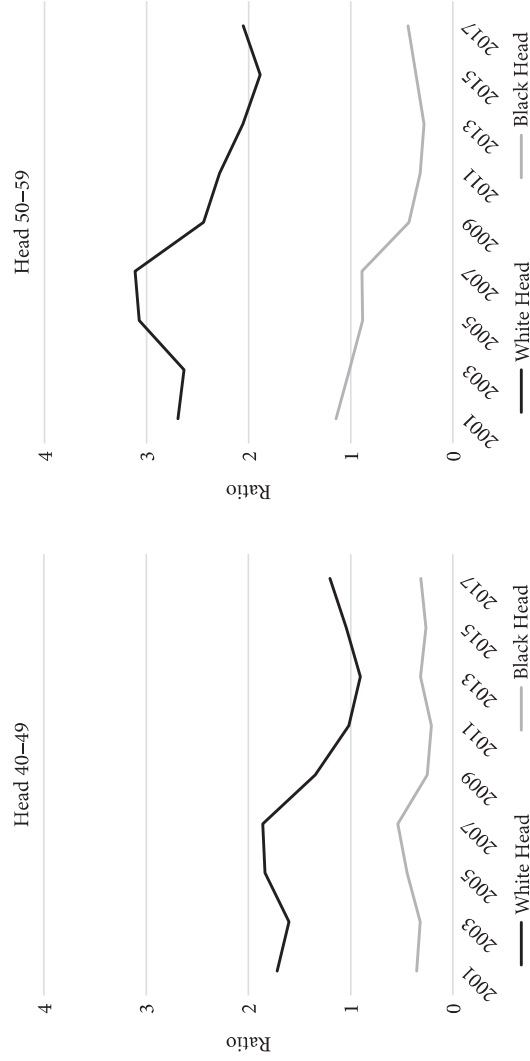
*Source:* Authors' calculations based on the Panel Study of Income Dynamics.

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in Figure 3.2. As a result of the larger percentage decline for Black-headed families, median wealth of White-headed families in their 50s was about 3½ times that of Black-headed families in 2000 and about seven times that in 2019. For families with heads in their 40s (not shown), median real wealth for White-headed families dropped from \$172,000 in 2001 to \$98,000 in 2019, while for Black-headed families, such wealth rose a bit, but remained very low, at \$13,000 in 2001 and \$17,000 at 2019. For families with heads in their 40s and 50s, the declines in wealth occurred across the wealth distribution and were sharpest in the years following the bursting of the early 2000s housing bubble.

Real money income at the 25th, 50th, and 75th percentiles was notably lower in 2019 for White- and Black-headed families in their 50s than it was for families of the same age in 2001 (available on request). The larger percentage drops tended to be at the lower ends of the distributions. For example, at the 25th percentiles, real money income was down 31 percent for families with White heads in their 50s and 53 percent for families with Black heads in their 50s. At the 50th percentiles, real money income was lower by 17 percent and 36 percent for White- and Black-headed families respectively. Comparisons over time are generally more favorable for families with heads in their 40s. The drops in income relative to their earlier counterparts are smaller for White-headed families in their 40s than for White-headed families in their 50s, and the incomes of Black-headed families in their 40s in 2019 were modestly ahead of those in 2001. The relative gains for Black-headed relative to White-headed families in their 40s may reflect larger proportional advances for Blacks in educational outcomes.<sup>11</sup>

Because declines in income during the past few decades were generally smaller than declines in wealth, median wealth-to-income ratios were lower in 2019 for both White-headed and Black-headed families in their 40s and 50s than they were for similar families in 2001, as shown in Figure 3.3. Between 2001 and 2019, the drops were about 25 percent for both White-headed and Black-headed families in their 40s, about 15 percent for White-headed families in their 50s, and more than 55 percent for Black-headed families in their 50s. These drops in wealth relative to income accentuate concerns that many families are less prepared financially for retirement today than a few decades ago.



**Figure 3.3** Median wealth-to-income ratio for families with White and Black heads in their 40s and 50s

*Note:* Wealth defined as the sum of non-financial assets, financial assets (including the value of DC retirement accounts) minus liabilities; it does not include the value of future DB pension income or social security income. Money income defined as the sum of the taxable income, transfer income, and social security income of all family members for calendar year preceding survey. Ratios based on current wealth and average money income for the current and previous waves. Statistics calculated using weights.

*Source:* Authors' calculations based on the Panel Study of Income Dynamics.

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### **Finding 3: Home ownership rates for families nearing retirement—and especially for Black-headed families—declined during most of the 2010s, implying that fewer families benefited from the recovery in home prices**

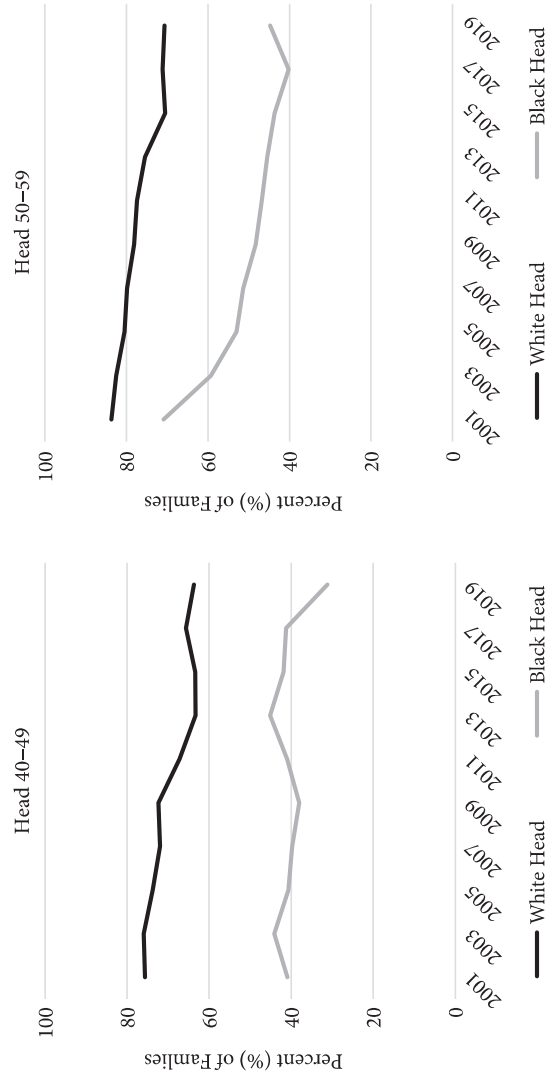
The lack of recovery in wealth and wealth-to-income ratios in the 2010s might seem surprising, given that home prices began to rebound in 2012 and surpassed their earlier high in the latter part of the decade. One contributing factor is that home ownership rates of PSID families with heads in their 40s and 50s, plotted in Figure 3.4, declined, so fewer families enjoyed the wealth gains associated with the rebound in home prices. For families with White heads in their 40s or 50s, the net drop in the home ownership rate between 2001 and 2019 was about 15 percent; for families with Black heads in their 40s or 50s, the net drop was between about 25 and 35 percent.<sup>12</sup> Those drops were most pronounced among lower- and middle-income families (not shown). For nearly all of the past two decades, reported PSID home ownership rates for families with White heads in their 40s and 50s were roughly 1½ to 2 times those for families with Black heads in those age groups.

### **Finding 4: Families' experiences during the Great Recession had significant effects on their wealth accumulation over the first two decades of the 2000s**

As discussed earlier, the longitudinal nature of the PSID allows for analysis of how families' lived experiences affected their financial positions. Because the declines in wealth over the first two decades of the twenty-first century were sharpest during and just after the Great Recession, we explore the correlation between a few key experiences during the Great Recession and changes in families' wealth-to-income ratios.<sup>13</sup>

As seen in the first two rows of Table 3.1, families whose heads experienced long-term unemployment during or immediately after the Great Recession lost wealth between 2007 and 2019, on balance, while families that experienced no unemployment gained wealth. Because the families that suffered long-term unemployment had significantly less wealth than other households *before* the Great Recession, the scarring effect of long-term unemployment was especially unfortunate. As shown in the next two rows of Table 3.1, families that transitioned out of home ownership during the Great Recession period lost most of their wealth by 2013 and regained only a portion of that loss by 2019, while families that remained homeowners enjoyed substantial wealth gains between 2007 and 2019. Families that lived in especially hard-hit states during the Great Recession period (the 10 states





**Figure 3.4** Homeownership rates for families with White and Black heads in their 40s and 50s  
*Note:* Homeownership rate defined as the percent of families in group that own their primary residence. Shares calculated using weights.  
*Source:* Authors' calculations based on the Panel Study of Income Dynamics.

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TABLE 3.1 Wealth-to-income (W/Y) ratios for families with different Great Recession experiences

	Median W/Y				Change in W/Y	
	2007	2009	2013	2019	2007–2013	2007–2019
Great Recession experience:						
Unemployment > 52 weeks	0.27	0.12	0.10	0.22	–0.18	–0.05
No unemployment	1.15	0.83	0.96	1.57	–0.18	0.43
Transitioned out of home ownership	1.37	0.75	0.18	0.63	–1.19	–0.74
Remained homeowner	2.00	1.58	1.90	2.86	–0.10	0.87
Lived in hard-hit state	0.96	0.49	0.66	1.54	–0.30	0.58
Lived in other state	0.96	0.79	0.83	1.29	–0.13	0.33

*Note:* Unemployment experiences are based on data corresponding to the 2009–2012 period (although the recession is formally dated to have begun in late 2007, unemployment conditions did not deteriorate significantly until 2009). Families were categorized as transitioning out of home ownership if they reported being homeowners in the 2007 wave and reported not being homeowners in the 2013 wave. Families were categorized as living in a hard-hit state if they lived at any point between 2009 and 2013 in one of the ten states reporting the largest increases in unemployment during the Great Recession period. Money income is defined as the sum of the taxable income, transfer income, and social security income of all family members for the previous calendar year. Wealth is defined as the sum of nonfinancial assets and financial assets (including the value of DC retirement accounts) minus liabilities at the time of the survey. Statistics are calculated using weights.

*Source:* Authors' calculations based on the Panel Study of Income Dynamics.

that experienced the largest increase in unemployment) lost more wealth between 2007 and 2013 than families that lived in other states, but their average wealth exceeded that of families in other states by 2019.<sup>14</sup>

The prevalence of these different experiences is correlated to some extent with race. Black-headed families who were in their 40s and 50s as of 2019 were about twice as likely as White-headed families to have experienced long-term unemployment during or right after the Great Recession (13 percent versus 6.5 percent), and those Black-headed families were slightly more likely to have lived in hard-hit states (30 percent versus 27 percent). However, Black-headed families were *less* likely than White-headed families to transition out of home ownership during that period (4½ percent versus 7 percent). The latter result may seem surprising given evidence that Black families are disproportionately represented in the subprime mortgage market (see, for example, Austin 2008). However, as research since the financial crisis has highlighted, the pre-crisis rise in mortgage debt and

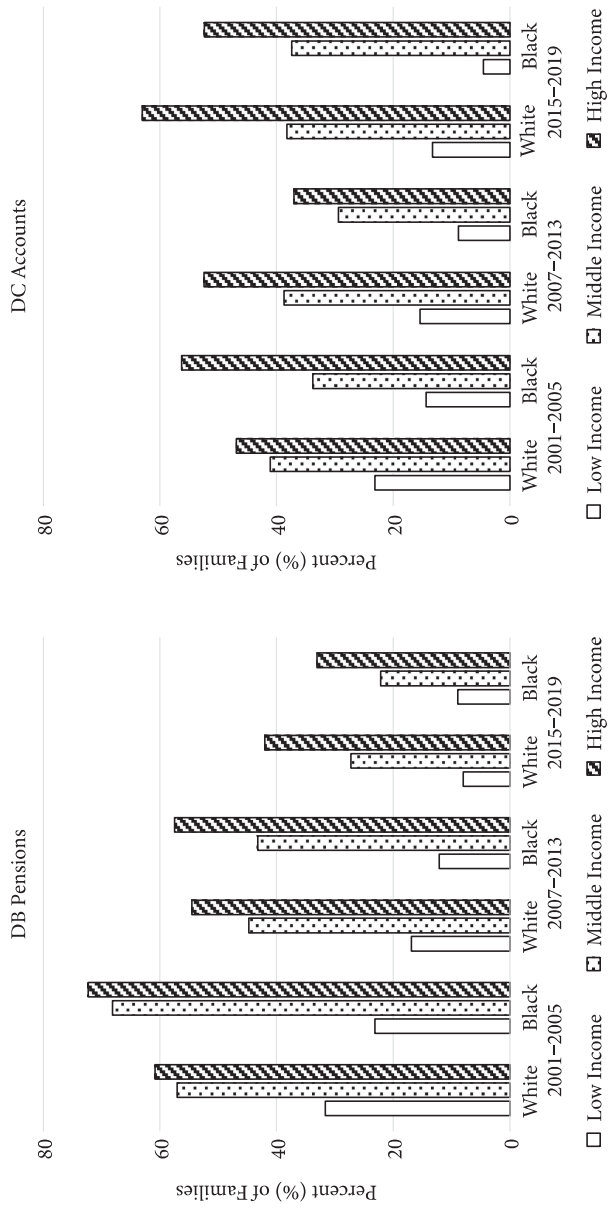
the subsequent payment problems were not especially concentrated among lower-income or higher-credit-risk borrowers (Foote et al. 2021).

**Finding 5: Coverage of DB and DC pensions varies significantly by income and by race; conditional on income, racial disparities differ across income levels and over time**

A well-known and discouraging aspect of financial preparedness for retirement is the sharp decline in the share of families with DB pensions—which traditionally have provided considerable retirement income—and the absence of a corresponding increase in the prevalence of DC accounts. As shown in the left panel of Figure 3.5, the share of families in their 50s with DB pensions has dropped markedly during the past two decades, across the income distribution and for both Black- and White-headed families. Within the low-income groups by race, White-headed families had greater DB coverage than Black-headed families at the beginning of the period but similar scant coverage, with shares below 10 percent for both groups, by the end. For the middle- and high-income groups, White-headed families had *less* DB coverage than Black-headed families at the beginning of the period and *more* coverage later. Patterns are broadly similar for families with heads in their 40s, although the shares are somewhat lower, as would be expected in an era of generally dropping DB coverage, since the heads and spouses in any given wave would have entered the labor force later than their older counterparts.

The left panel of Figure 3.5 also illustrates how, for all time periods, the differences across income groups are very large, with shares for the high-income groups between two and five times those for the low-income groups. Those differences are much larger than differences across race for any given time period and income group, with the conditional ratios of White to Black shares varying between 0.8 and 1.4. Thus, income appears to be a much more important factor affecting DB pension coverage than race per se. Yet, because Black-headed families are more likely to have low income than White-headed families, they have lower average rates of DB coverage. The share of all Black-headed families in their 50s with DB pensions was 52 percent in 2001 and collapsed to 15 percent in 2019; the share of all White-headed families in their 50s with DB pensions was 55 percent in 2001 and dropped to 27 percent in 2019. The share of all Black-headed families in their 40s with DB pensions was 32 percent in 2001, dropping to 16 percent in 2019, and the share of all White-headed families in their 40s with DB pensions was 48 percent in 2001, dropping to 25 percent in 2019.

Despite the striking decline in DB pension coverage, ownership of DC accounts has not risen in an offsetting way over the past two decades. As



**Figure 3.5** Percent of families with heads in their 50s reporting DB pensions and DC retirement accounts by income tertile, race, and year groupings

*Note:* Includes DB pension plans and DC retirement accounts associated with current and previous jobs for heads and spouses. Income groups are based on tertiles of real money income (the sum of the taxable income, transfer income, and social security income of all family members for the previous calendar year, adjusted using the current-methods CPI to 2019 dollars) for all families, and derived on a weighted basis for each year. Shares calculated using weights.

*Source:* Authors' calculations based on the Panel Study of Income Dynamics.

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shown in the right panel of Figure 3.5, the share of families in their 50s with DC accounts changed relatively little, on net, for Black- and White-headed families in both the middle- and high-income groups. In the middle-income groups, DC prevalence among Black-headed families increased (on net) over time to come in line with the prevalence among White-headed families, which was little changed. In the high-income groups, DC accounts were more common among Black-headed families than White-headed families in the 2010s', but that pattern reversed over time. Concerningly, reported prevalence of DC accounts declined to very low levels for both Black- and White-headed families in their 50s in the low-income groups, and, within the low-income groups by race, Black-headed families were less likely than White-headed families to have DC accounts throughout the past two decades.

For families in their 40s, the prevalence of DC accounts changed little through the mid-2010s for families in all income groups with both White and Black heads. Nevertheless, there was some increase in coverage in the late 2010s for both White-headed families and Black-headed families in the middle- and high-income groups. (For example, in the middle-income groups, the share of DC accounts among White-headed families rose by 6 percentage points to 44 percent between the 2007–2013 period and the 2015–2019 period, and the share for Black-headed families rose by 13 percentage points to 49 percent.)

As with DB pension coverage, rates of DC account ownership vary more widely by income than by race within income groups. With the Black population disproportionately concentrated in lower income groups, the average share of Black-headed families owning DC accounts is consistently lower than that of White-headed families (not shown). For families in their 50s, the gap averages about 20 percentage points across PSID waves, with 43 percent of White-headed families reporting DC accounts in the 2019 wave compared with 25 percent of Black-headed families. The gap for families in their 40s is somewhat smaller and closes a bit over time, with 45 percent of White-headed families reporting DC accounts in the 2019 wave versus 36 percent of Black-headed families.

## Results on Replacement Rates of Income in Retirement

The PSID includes sufficient detail on income over time to allow for a reasonable estimate of social security wealth and a rough estimate of DB pension wealth for each household. Combining those estimates with the data on financial wealth (including DC pension wealth), one could estimate

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a retirement income replacement rate for each household. Such calculations would be quite complex, however, and would involve considerable uncertainty given the noise and gaps in the data. Instead, we have done a rough approximation.

In our rough estimates of income replacement rates, the denominator for each family is its average income when the family head is in their 50s, and the numerator for each family is the sum of:

- An estimate of the family's future annual withdrawal from wealth, equal to financial plus housing wealth;
- An estimate of the family's future annual DB pension income (if it has a DB pension) equal to a random draw from the distribution of DB pension income for families in their 60s who reported having a DB pension and were in the same income tercile and race group when they were in their 50s; and
- An estimate of the household's future annual social security income, equal to estimated replacement rates from the Congressional Budget Office (2019).

We recognize that there are various sources of possible error in these calculations, but also point to some mitigating considerations. For example, by using the same annuitization percentage for all families, we are effectively ignoring differences in longevity and rates of return for different groups. For comparisons between White- and Black-headed families, however, the likely biases from these limitations run in opposite directions, as Blacks tend to have shorter lifespans (see, for example, Schwandt et al. 2021), which would justify a higher annuitization rate, and tend to earn lower rates of return on their savings (see Aliprantis and Carroll 2019), which would justify a lower annuitization rate. Moreover, any error in the annuitization calculation will make little difference for the material share of families that have very little accumulated wealth.

For the DB pension income component, given that families nearing retirement probably have a limited understanding of their likely future DB income, it is not clear to us that using estimates based on actual realizations of DB income from families' counterparts in their 60s is worse than estimating DB income based on families' reported expectations. Similarly, using CBO's estimates of social security replacement rates (based on social security earnings records linked to data from the Survey of Income and Program Participation) may be as good or better than estimating social security income based on PSID families' reported income history, given the potential for misreporting, and gaps in families' survey participation. We also note that qualitative comparisons across race

groups, income groups, and time should hold to the extent that any inaccuracies in the calculation are not systematically correlated with these variables.

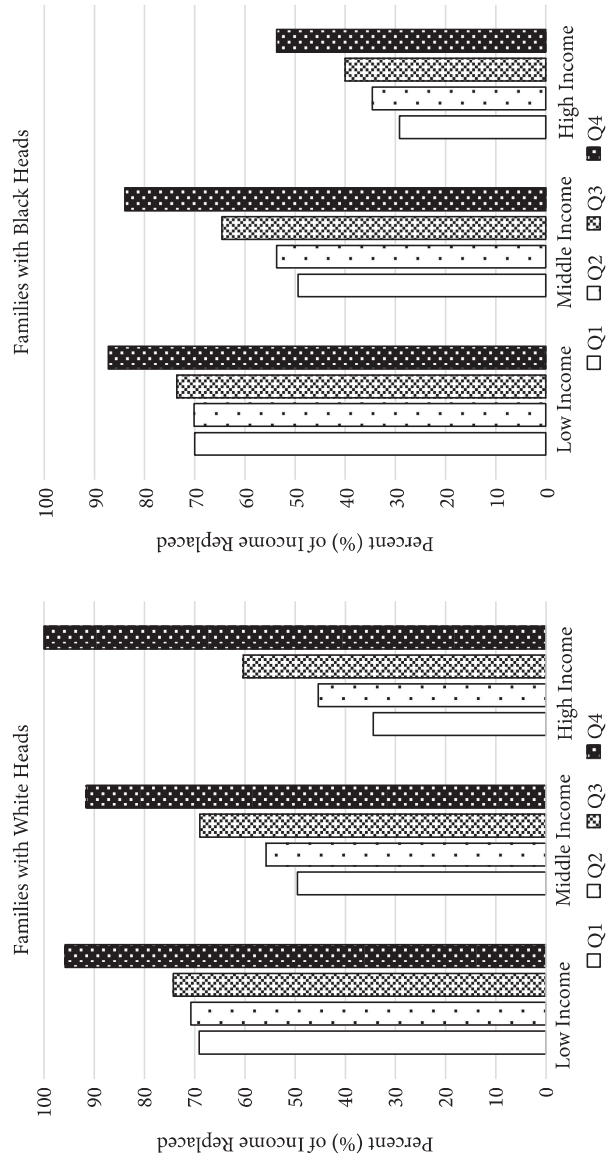
**Finding 6: Estimated income replacement rates for Black families are generally lower than for White families, with the differences most pronounced among families with high income**

For families with heads in their 50s in 2019, median income replacement rates in retirement are estimated to vary between roughly 30 and 100 percent, as shown in Figure 3.6 depending on race, income tercile, and place within the distribution of replacement rates for that race and income tercile. To summarize the distributions of replacement rates, we report median rates for each quartile of preparation by race and income. Income terciles are calculated for all families as a group; Black families are disproportionately represented in the lower tercile and underrepresented in the upper tercile.

For low-income families, estimated replacement rates rise from about 70 percent in the bottom quartiles of preparation for both Black- and White-headed families, to about 90 percent in the top quartile for Black-headed families and about 100 percent in the top quartile for White-headed families. These fairly high estimated replacement rates and their rough similarity between White- and Black-headed families reflect the importance of social security benefits, since these groups generally have little wealth and no DB pensions.

For middle-income families, estimated replacement rates rise from about 50 percent in the bottom quartile of preparation for both Black- and White-headed families, to about 85 percent in the top quartile for Black-headed families and about 90 percent for White-headed families.

For high-income families, estimated replacement rates rise from about 30 percent for both Black- and White-headed families in the bottom quartile of preparation, to about 60 percent in the top quartile for Black-headed families and nearly 100 percent for White-headed families. In the lower quartiles of preparation, the estimated replacement rates and rough similarity between White- and Black-headed families again reflect the importance of social security benefits (even though such benefits offer lower replacement rates at these higher income levels). In the highest quartile of preparation, the difference in replacement rates between White- and Black-headed families primarily reflects differences in their financial wealth. Replacement rates are concerningly low for some high-income families, and especially for some Black families.



**Figure 3.6** Estimated retirement income replacement rates by income tercile for families with White and Black heads in their 50s in 2019

*Note:* Calculations based on annuity value of household wealth, a random draw of DB pension income from households in their 60s with the same race and income group when they were in their 50s, and social security replacement rates from CBO (2019). Income terciles based on money income (as the sum of the taxable income, transfer income, and social security income of all family members) and derived on a weighted basis for each year. The four bars for each income group represent the medians for families in the lowest through highest quartiles of the group in terms of replacement rates. Statistics calculated using weights.

*Source:* Authors' calculations based on the Panel Study of Income Dynamics.



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TABLE 3.2 Median estimated retirement income replacement rates by income tercile for families with White and Black heads in their 50s in 2005 and 2019

	Families with White Heads			Families with Black Heads		
	2005 (%)	2019 (%)	Change (pp)	2005 (%)	2019 (%)	Change (pp)
Low income	78.2	71.3	-6.9	73.4	70.5	-2.9
Middle income	71.6	60.1	-11.6	71.9	57.8	-14.1
High income	62.3	53.6	-8.7	45.7	40.0	-5.7

*Note:* Calculations are based on annuity value of household wealth, a random draw of DB pension income from households in their 60s with the same race and income group when they were in their 50s, and social security replacement rates from CBO (2019). Income terciles are based on money income (as the sum of the taxable income, transfer income, and social security income of all family members) and derived on a weighted basis for each year. The four bars for each income group represent the medians for families in the lowest through highest quartiles of the group in terms of replacement rates. Statistics are calculated using weights. Changes are in percentage points and may not reflect the difference between the numbers in the preceding columns because of rounding.

*Source:* Authors' calculations based on the Panel Study of Income Dynamics.

### **Finding 7: Estimated income replacement rates for families near retirement were roughly 9 percentage points lower for White-headed families and roughly 8 percentage points lower for Black-headed families, on average, in 2019 than in 2005**

Reductions in estimated replacement rates can be seen in Table 3.2 for White- and Black-headed families in their 50s with low, middle, and high incomes.<sup>15</sup> The reductions result from the declines in non-pension wealth and DB pension coverage that were discussed earlier. For both races, the reductions were larger for middle-income households than for low- or high-income households, because DB pensions play a relatively larger role for the middle group.

### **Conclusion**

In the past two decades, non-pension wealth has declined relative to income for families with White heads or Black heads nearing retirement. Moreover, the prevalence of DB pensions has fallen sharply. Based on our

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estimates, retirement income replacement rates appear to be under 60 percent for many middle- and high-income families with heads in their 50s. The challenge of receiving adequate income in retirement is especially acute for Black-headed families, as these families have far less wealth, on average, than do White-headed families, and they are notably less likely to have DB pensions.

These findings represent a significant challenge for policymakers. Many families whose heads retire in coming years will be even more dependent on social security benefits in retirement than their predecessors were. Any reductions in social security benefits—even if concentrated among higher-income families—could significantly constrain retirement consumption.

In light of the significant decline in families' wealth seen after the Great Recession, understanding the impact on wealth of the COVID recession and its aftermath will be important. As discussed earlier, the available information does not paint a clear picture, with some evidence that families saved more during the pandemic, but also reasons to believe that at least some of these savings has been drawn down later. When the necessary data become available, researchers should update analyses of retirement security, including racial disparities in retirement preparation.

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## **Notes**

1. For the 2017 wave, the PSID replaced the term 'head' with the term 'reference person.' According to the PSID website, '[o]riginally, if the family contained a husband–wife pair, the husband was arbitrarily designated the Reference Person to conform with Census Bureau definitions in effect at the time the study began,' but the designation has since changed to be the person with the most financial responsibility for the family unit. We use the traditional term throughout our chapter.
2. The literature is vast. For an early example, see Congressional Budget Office (1987). Congressional Budget Office (2017) cites some more recent research, as well as various measurement and conceptual considerations that can lead different studies to different conclusions.
3. The 'early release' file for the 2021 wave of the PSID was made available to the public in February 2022. Our preliminary exploration of this file suggests that the information is limited in various ways that are likely to make analysis of retirement security unreliable.

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4. In addition to the work cited in the text, a number of papers at the 2022 Pension Research Council Symposium presented evidence related to the effects of the COVID-19 pandemic on retirement security (Wharton Pension Research Council 2022).
5. There is a growing literature on racial disparities in DC wealth. See, for example, Banerjee (2022), who explores gaps in access, take-up, and balances for different race and ethnicity groups, and Choukhmane et al. (2022), who examine racial disparities in contributions to employer-sponsored retirement accounts using tax data. There is also a literature on racial differences in retirement-related knowledge and expectations; see Viceisza et al. (2022) for a comprehensive review.
6. The ranges reflect differences across waves, with the lower end of the range for families with heads in their 50s associated with earlier waves. We use all PSID samples except for the Latino sample that was included only in the early to mid-1990s.
7. Future work will look at this issue in more depth and consider whether we can create estimates of social security wealth based on family-specific earnings histories in the PSID that are better than the more straightforward approach we take in this chapter.
8. The number of minority-headed families in the SCF has grown over time, and the SCF began to oversample minority-headed families with its 2022 wave (Moore and Pence 2021); however, SCF waves of the 1990s and early 2000s have 200 or fewer Black families in their 40s or 50s. In the PSID, the greater precision in estimates for minority-headed families occurs only for those in the lower-income oversample, but that is the portion of the income distribution for which vulnerability in retirement is a particular concern. The PSID asks about race and ethnicity separately, and we create our Black and White samples based on the 'first mention' response to the question about the race of the family head. Accordingly, Hispanic-headed families are included in the Black and White samples. Although it is possible to separate Hispanic families as a separate category in some waves, we do not do so because the available information does not allow us to do so on a consistent basis over our full sample period and because the number of Hispanic families is limited, with around 300 families with heads in their 40s and 50s. We acknowledge, though, that there is a significant gap between the wealth of non-Hispanic White families and Hispanic families that warrants separate attention from researchers.
9. A further potential advantage of the PSID for analyzing racial trends is that the longitudinal structure could allow us to hold a family head's race constant at what was reported at a given point in the past. As Bhutta et al. (2020) note, there appear to be changes over time in how survey respondents self-identify in terms of race and ethnicity, so holding race constant would ensure that we were looking at the same families over time. In our sample, there are indeed differences across waves in reported race for a small share of families, but we decided not to hold a family's race constant over time in our analysis because we do not know the reasons for the changes in reported race.
10. We do not know the reason for this surprising feature of the survey given that most (if not all) families would consider such assets to be an explicit component

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of their financial wealth. One explanation is that the PSID (like most surveys) never included information about DB pension wealth in its summary measures and that DC accounts, when introduced, were viewed mostly as a replacement for retirement ‘saving’ through DB plans.

11. For example, according to Census Bureau tabulations of Current Population Survey data, the share of White individuals 25 and older who had completed high school rose from 79 percent in 1990 to 88 percent in 2010, whereas the share of Black individuals having done so rose from 66 percent to 84 percent. In addition, the share of White individuals completing four years of college rose from 22 percent to 30 percent over this period, and the share of Black individuals completing four years of college rose from 11 percent to 20 percent (United States Census Bureau 2023).
12. See Young (2019) for a more extensive discussion of the causes and implications of the pronounced decline in Black homeownership after the financial crisis.
13. To illustrate the effects of different experiences most clearly, we do not show data for all variations of the experiences; for example, we compare families experiencing long-term unemployment with those experiencing no unemployment and do not report results for families that experienced only short-term unemployment. The results for the variations of experiences we omit generally fit the pattern that would be expected relative to the variations shown.
14. The hard-hit states by this metric were Nevada, Michigan, Florida, Alabama, California, Arizona, North Carolina, Oregon, Rhode Island, and Illinois. As shown in Dynan and Elmendorf (2020), all states had experienced a robust recovery in their unemployment rate by 2019, at which time the national unemployment rate was lower and the range of state unemployment rates smaller than just before the Great Recession.
15. Pension income in the PSID is not available before 2005.

## References

- Aliprantis, D. and D. Carroll (2019). ‘What is Behind the Persistence of the Racial Wealth Gap?’ *Economic Commentary*, Federal Reserve Bank of Cleveland Economic Commentary 2019-03.
- Aubry, J.-P., A.H. Munnell, and G. Wettstein (2025). ‘Wills, Wealth, and Race.’ In O.S. Mitchell and N. Roussanov, eds., *Reducing Retirement Inequality: Building Wealth and Old-Age Resilience*. Oxford, UK: Oxford University Press, pp. 107–134.
- Austin, A. (2008). ‘Subprime Mortgages Are Nearly Double for Hispanics and African Americans.’ Economic Policy Institute Economic Snapshot, Washington, DC: Economic Policy Institute. [www.epi.org/publication/webfeatures\\_snapshots\\_20080611/](http://www.epi.org/publication/webfeatures_snapshots_20080611/).
- Banerjee, S. (2022). *Race, Retirement, and the Savings Gap*. T. Rowe Price Insights on Retirement. Baltimore, MD: T.RowePrice. [www.troweprice.com/institutional/us/en/insights/articles/2022/q1/race-retirement-savings-gap-na.html](http://www.troweprice.com/institutional/us/en/insights/articles/2022/q1/race-retirement-savings-gap-na.html).
- Bee, A. and J. Mitchell (2017). ‘Do Older Americans Have More Income than We Think?’ *Proceedings of the Annual Conference of the National Tax Association*. <https://ntanet.org/2018/03/110th-annual-conference-proceedings-2017/>.

## Changes in Racial Gaps in Retirement Security over Time 77

- Bhutta, N., A.C. Chang, L.J. Dettling, and J.W. Hsu (2020). *Disparities in Wealth by Race and Ethnicity in the 2019 Survey of Consumer Finances*. FEDS Notes. Washington: Board of Governors of the Federal Reserve System.
- Bosworth, B. and R. Smart (2009). 'Evaluating Micro-Survey Estimates of Wealth and Saving.' CRR WP 2009-4. Chestnut Hill, MA: Center for Retirement Research at Boston College. <https://papers.ssrn.com/sol3/papers.cfm?abstractid=1368830>.
- Butrica, B.A., H.M. Iams, K.E. Smith, and E.J. Toder (2009). 'The Disappearing Defined Benefit Pension and Its Potential Impact on the Retirement Incomes of Baby Boomers.' *Social Security Bulletin*, 69(3): 1–27.
- Choukhmane, T., J. Colmenares, C. O’Dea, J. Rothbaum, and L. Schmidt (2022). *Who Benefits from Retirement Saving Incentives in the US? Evidence on Racial Gaps in Retirement Wealth Accumulation*. Cambridge, MA: MIT.
- Congressional Budget Office (CBO) (1987). *Retirement Income for an Aging Population*. Washington, DC: CBO.
- Congressional Budget Office (CBO) (2017). *Measuring the Adequacy of Retirement Income: A Primer*. Washington, DC: CBO.
- Congressional Budget Office (CBO) (2019). *Social Security Replacement Rates and Other Benefit Measures: An In-Depth Analysis*. Washington, DC: CBO.
- Cooper, D.H., K. Dynan, and H. Rhodenhiser (2019). 'Measuring Household Wealth in the Panel Study of Income Dynamics: The Role of Retirement Assets.' Federal Reserve Bank of Boston Research Department Working Paper 19-6. Boston, MA: Federal Reserve Bank of Boston.
- Derenoncourt, E., C.H. Kim, M. Kuhn, and M. Schularick (2022). 'Wealth of Two Nations: The US Racial Wealth Gap, 1860–2020.' NBER Working Paper No. 30101. Cambridge, MA: National Bureau of Economic Research.
- Dettling, L., J. Hsu, and E. Llanes (2018). 'A Wealthless Recovery? Asset Ownership and the Uneven Recovery from the Great Recession.' FEDS Notes, Washington, DC: Board of Governors of the Federal Reserve System.
- Dynan, K. and D. Elmendorf (2020). 'National Fiscal Policies to Fight Recessions in US States.' *AEA Papers and Proceedings*, 110: 1–7.
- Dynan, K. and W. Powell III (2022). 'US Job and Wage Growth Beat Expectations, Making the Fed’s Job Harder.' Peterson Institute of International Economics (PIIE) Realtime Economics. Washington, DC: PIIE. [www.piie.com/blogs/realtime-economics/us-job-and-wage-growth-beat-expectations-making-feds-job-harder](http://www.piie.com/blogs/realtime-economics/us-job-and-wage-growth-beat-expectations-making-feds-job-harder).
- Dynan, K. and A. Wozniak (2021). 'Family Wealth as an Engine for Macroeconomic Growth.' In R. Boshara and I. Rademacher, eds., *The Future of Building Wealth: Brief Essays on the Best Ideas to Build Wealth—for Everyone*. Washington, DC: The Aspen Institute, pp. 481–487.
- Foote, C.L., L. Loewenstein, and P.S. Willen (2021). 'Cross-Sectional Patterns of Mortgage Debt during the Housing Boom: Evidence and Implications.' *Review of Economic Studies*, 88(1): 229–259.
- Gilligan, C. (2022). 'Economic Pinch Hits the Gulf Coast Hardest.' US News & World Report. October 3: [www.usnews.com/news/best-states/articles/2022-10-03/survey-40-of-americans-are-struggling-to-pay-household-expenses](http://www.usnews.com/news/best-states/articles/2022-10-03/survey-40-of-americans-are-struggling-to-pay-household-expenses).
- Moore, K.B. and K.M. Pence (2021). 'Improving the Measurement of Racial and Ethnic Disparities in the Survey of Consumer Finances.' FEDS Notes, Washington, DC: Board of Governors of the Federal Reserve System.

## 78 Reducing Retirement Inequality

- Pfeffer, F.T., R.F. Schoeni, A. Kennickell, and P. Andreski (2016). 'Measuring Wealth and Wealth Inequality.' *Journal of Economic and Social Measurement*, 41(2): 103–120.
- Sabelhaus, J. and J. P. Thompson (2022). 'Racial Wealth Disparities: Reconsidering the Roles of Human Capital and Inheritance.' Federal Reserve Bank of Boston Working Paper 22-3. Boston, MA: Federal Reserve Bank of Boston.
- Sabelhaus, J. and A.H. Volz (2022). 'Social Security Wealth, Inequality, and Life-Cycle Saving.' in R. Chetty, J.N. Friedman, J.C. Gornick, B. Johnson, and A. Kennickell, eds., *Measuring Distribution and Mobility of Income and Wealth*. Chicago, IL: University of Chicago Press.
- Schwandt, H., J. Currie, M. Bär, J. Banks, P. Bertoli, A. Bütikofer et al. (2021). 'Inequality in Mortality between Black and White Americans by Age, Place, and Cause, and in Comparison to Europe, 1990–2018.' *Proceedings of the National Academy of Sciences*, 118(40).
- Suarez, G., J. Thompson, and A.H. Volz (2025). 'Retirement Assets and Wealth Gaps for Black and Hispanic Households.' In O.S. Mitchell and N. Roussanov, eds., *Reducing Retirement Inequality: Building Wealth and Old-Age Resilience*. Oxford, UK: Oxford University Press, pp. 17–52.
- Thompson, J.P. and A.H. Volz (2021). 'A New Look at Racial Disparities Using a More Comprehensive Wealth Measure.' *Federal Reserve Bank of Boston Current Policy Perspectives*. Boston, MA: Federal Reserve Bank of Boston.
- United States Census Bureau (2023). 'CPS Historical Time Series Tables.' Washington, DC: United States Census Bureau. [www.census.gov/data/tables/time-series/demo/educational-attainment/cps-historical-time-series.html](http://www.census.gov/data/tables/time-series/demo/educational-attainment/cps-historical-time-series.html).
- United States Department of the Treasury (2023). 'Racial Differences in Economic Security: Non-Housing Assets.' January 10: <https://home.treasury.gov/news/featured-stories/racial-differences-in-economic-security-non-housing-assets>.
- Veghte, B.W., E. Schreur, and M. Waid (2016). 'Social Security and the Racial Gap in Retirement Wealth.' Washington, DC: National Academy of Social Insurance Brief 48.
- Viceisza, A., A. Calhoun, and G.J.O. Lee (2022). 'Racial And Ethnic Disparities in Retirement Outcomes: Impacts of Outreach.' NBER Working Paper No. w30456. Cambridge, MA: National Bureau of Economic Research.
- Wharton Pension Research Council (2022). '2022 PRC Symposium Report: "Real-World Shocks and Retirement System Resiliency."' Pension Research Council RetireSecure Blog. <https://pensionresearchcouncil.wharton.upenn.edu/blog/2022-prc-symposium-report-real-world-shocks-and-retirement-system-resiliency/>.
- Wheat, C. and E. Deadman (2022). 'Household Pulse through June 2022: Gains for Most, but Not All.' JP Morgan Chase Institute, [www.jpmorganchase.com/institute/research/household-income-spending/household-pulse-cash-balances-through-june-2022](http://www.jpmorganchase.com/institute/research/household-income-spending/household-pulse-cash-balances-through-june-2022).
- Wolff, E.N. (2025). 'Understanding Trends in Hispanic and African American Retirement Preparedness in the US.' In O.S. Mitchell and N. Roussanov, eds., *Reducing Retirement Inequality: Building Wealth and Old-Age Resilience*. Oxford, UK: Oxford University Press, pp. 79–106.
- Young, C. (2019). 'These Five Facts Reveal the Current Crisis in Black Homeownership.' Urban Institute Urban Wire. July 31: [www.urban.org/urban-wire/these-five-facts-reveal-current-crisis-black-homeownership](http://www.urban.org/urban-wire/these-five-facts-reveal-current-crisis-black-homeownership).