

ABSTRACT

In recent years, Americans have placed a renewed focus on our country's legacy of racial inequality. These inequalities extend to retirement, where White retirees have significantly higher assets and incomes than Black or Hispanic retirees, with the latter facing a substantially higher risk of poverty in old age. One possible explanation for Black and Hispanic retirees' lower levels of income and wealth is inadequate retirement saving during their working years. A second possible explanation is that Black and Hispanic workers save for retirement more or less as economic theory or financial planning advice would dictate, but that their lower levels of earnings during their working years lead to lower incomes in old age.

This study uses publicly available output from the Urban Institute's Dynamic Simulation of Income Model (DYNASIM) model, a microsimulation of the US population with a focus on retirement savings and retirement incomes, to analyze retirement outcomes by race. The results correspond with other data showing Black and Hispanic retirees with substantially lower incomes than White retirees. At the same time, Black and Hispanic retirees have retirement income replacement rates that are only slightly lower than those for White retirees, with majorities of all three racial groups exceeding common financial planning targets.

RETIREMENT PREPARATION: DIFFERENCES BY RACE AND ETHNICITY

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INTRODUCTION

The murder of George Floyd is one of many recent events that have led to a renewed focus on pervasive racial inequalities in the United States. The social and economic inequalities that divide Whites, Blacks, Hispanics, and other races during their working years carry through into retirement, with White retirees possessing dramatically higher incomes and assets than retirees of other races. Total retirement incomes—which include Social Security benefits, pensions, the drawdown of retirement account balances and other savings, and welfare benefits paid by governments—reflect the inequality of incomes between races that are seen throughout Americans' working years. Investments approach uses a portfolio of stocks and bonds, but there are other approaches that could be better suited to an investor's planning goals.

It is less clear, however, how policymakers should interpret these patterns. One possible explanation is that Black and Hispanic households fail to save adequately during their working years, due to a lack of access to retirement plans, lower levels of financial literacy, or other reasons. Another possible explanation is that Black and Hispanic households do tend to save adequately, whether benchmarked by theoretical economic models or practical financial planning tools, but that their lower levels of lifetime earnings result in low incomes both while working and in retirement. Policy responses to the former explanation may focus on expanding opportunities and incentives to save, while policy responses to the latter explanation may focus on changes to Social Security or other retirement programs to better protect against poverty in old age.

Neither category of policy responses is exclusive, though, nor does either rule out a range of other policies designed to equalize differences in preretirement earnings between different races. Nevertheless, clarifying the reasons for low incomes in retirement for Black and Hispanic households creates a more accurate picture of the challenges facing different groups of Americans and the policies that might best help them surmount these challenges.

This study draws on output from a large and well-developed microsimulation model called DYNASIM, which has been generated and maintained by researchers at the Urban Institute in Washington, DC.² A microsimulation model generates synthetic individuals and households who are representative of the US population; the model then follows them throughout the course of their lives, as various events and activities are simulated, such as attaining an education, finding and holding a job, getting married, having children, and eventually retiring. The DYNASIM model simulates all of these events and more, but includes a particular focus on retirement saving and incomes in retirement.

Any such model has limitations, of course, such as errors in accurately simulating various correlated life events and projecting how household formation, employment, and retirement savings could differ in the future relative to today. However, microsimulation models can also provide a more well-rounded view of the resources available to households in retirement than is available in any single data set, and can also project how future retirees will fare.

The study proceeds as follows. Part I presents background on the DYNASIM model that provides the figures used herein. Part II looks at how the racial composition of the retiree population is projected to change in coming decades, highlighting the importance of better understanding retirement saving patterns by race. Part III provides background on the theories of retirement saving that economists and financial planners use, and how different levels of retirement saving by race might be viewed in light of these models. Part IV looks at differences in lifetime earnings by race; these differences are important in that retirement saving is intended to replace earnings once household members cease working. Parts V and VI explore DYNASIM output on differences in financial assets and income by race, along with comparisons of retirement incomes to preretirement earnings (known as replacement rates). Discussions in those two parts illustrate how different definitions of income affect measured differences in relative retirement incomes. Part VII concludes with a consideration of the policy implications of the figures presented here.

I. THE DYNASIM MICROSIMULATION MODEL

The principal source of the analysis contained in this study is publicly available output from the Urban Institute's Dynamic Simulation of Income Model (DYNASIM) model, which began development in the 1970s. Retirement analysts often rely on models of the US population because no single data set contains all the data necessary to analyze the full range of assets and income sources available to retirees. For instance, the Current Population Survey (CPS) and the American Community Survey (ACS) have a wide range of income sources, but have considerable difficulty measuring retirees' incomes and contain little data on assets. The CPS has been shown to significantly undercount benefits paid from private retirement plans; for example, the income reported in Internal Revenue Service data for the median household over age 65 in 2012 was 30 percent higher than for the same household reported in CPS data (Bee and Mitchell 2017). The ACS also shares this shortcoming (O'Hara, Bee, and Mitchell 2016), as do, to a more limited degree, the Survey of Consumer Finances (SCF), the Health and Retirement Study (HRS), and the Survey of Income and Program Participation (SIPP). The CPS also undercounts the share of working-age households that participate in employer-sponsored retirement plans (Copeland 2016).

In response, dynamic microsimulation models build a population of simulated households designed to be representative of the US population, drawing on a range of data sources to help ensure that the array of assets and income sources is measured accurately across different household types. A microsimulation model generally begins with a sample of the population and then ages the population forward to future years. In any given year, a variety of different events are simulated, including education, work, marriage, the birth or adoption of children, home purchase, divorce, disability and other health disorders, retirement, and death, with probabilities assigned to each event based on the characteristics of the individual being simulated. (This semi-random evolution of household variables with each year is why such models are referred to as dynamic.) Each year an individual may earn credits

2. For additional background on DYNASIM, see Favreault, Smith, and Johnson (2015).

toward future Social Security benefits based on their labor force participation and earnings, as well as saving toward retirement if they are offered a retirement plan at work.

Obviously, this is not a flawless process, and microsimulation models are validated and improved over time. But microsimulation models have the advantage of being able to calibrate across multiple data sources to overcome the limitations of any single data set.

For instance, the Social Security Administration's (SSA) Model of Income in the Near Term (MINT), which is related to the DYNASIM model whose output is used in this study, has been shown to more closely match administrative data on retirement incomes than do household surveys such as the CPS (Smith and Favreault 2019). Thus, despite being simulations rather than data, microsimulation models have the potential to produce assessments of retirement savings adequacy that are more accurate than most household surveys.

A second goal of many microsimulation models is to project the current US population into the future so that analysts might, as in this case, assess the incomes that current working-age households are likely to receive once they retire. Such projections require a range of assumptions regarding future earnings, saving behavior, and a range of other variables. And, as might be expected, the more distant the year for which incomes are projected, the more uncertain those projections become. For that reason, this study will focus on current retirees and households that will be retiring in the near future.

But relative to other, often cruder, techniques of projecting retirement incomes, microsimulation models require the model builder to make explicit assumptions regarding savings-related factors. This exacting process makes it easier for the model to be checked and reassessed as new data become available.

DYNASIM includes many features that make it particularly useful for studying retirement preparedness, in particular across racial and ethnic groups. Unlike

household surveys such as the CPS or the SCF, DYNASIM reports not only whether an employee participates in a traditional defined-benefit pension plan, but also calculates the level of benefits the employee has accrued under that plan. Benefit accruals under traditional pensions may be particularly important in assessing the retirement prospects of Black households, who are disproportionately likely to work in the public sector where traditional pensions remain the common employer-sponsored retirement plan.³ DYNASIM also is more accurate than household surveys in tracking benefits paid from private retirement plans, including not only defined-benefit pensions, but also retirement accounts such as 401(k) and IRA plans. DYNASIM also projects retirement incomes from other sources, such as Supplemental Security Income (SSI), which is more common among minority households, and from implicit rent received via homeownership, which is more common among White households.

The current version of DYNASIM begins with a large sample of households from the 1990 to 1993 waves of the SIPP. These demographic data are then matched to lifetime earnings histories drawn from a different survey, the Panel Study of Income Dynamics (PSID), to create a picture of households' earnings over the course of their working lifetimes. Other data sources are used to fill in further details of these simulated households and various life events, including the National Longitudinal Survey of Youth (NLSY), the CPS, the ACS, the HRS, the National Center for Health Statistics (NCHS), the Medical Expenditure Panel Survey (MEPS), the SCF, and the SSA. For future years, DYNASIM calibrates to the Social Security Trustees Projections for things such as demographics or earnings growth.

DYNASIM simulates participation in employer-sponsored retirement plans, including differences in participation by gender, earnings level, race, and other factors.⁴ DYNASIM models savings in retirement accounts by assuming that stocks and bonds produce historical returns, minus 1 percentage point for administrative costs.⁵ It is worth noting that some analysts believe

3. In CPS data for 2020, Blacks made up about 12 percent of the overall workforce but nearly 18 percent of employment in the public sector.

4. DYNASIM does not simulate individuals who describe themselves as mixed race, nor does it categorize households as mixed race if the spouses or partners are of different races.

5. DYNASIM assumes mean real rates of return of 6.5 percent for stocks, 3.5 percent for corporate bonds, and 3.0 percent for government bonds.

that future investment returns may be lower than returns in the past when the equity premium was high. If so, DYNASIM would overestimate future retirement incomes, though not necessarily on a uniform basis between households of different races. Households holding greater financial assets would be more severely affected if future investment returns fall short of historical averages.

In DYNASIM, an individual's asset allocation between stocks and bonds depends on their age and risk tolerance, with risk tolerance estimated from the SCF. SCF responses generally find that Blacks are somewhat less willing than non-Blacks to take financial risk, though that finding is weakened when factors such as age, the number of children in a household, and household wealth are accounted for.⁶ The modeling of risk tolerances is relevant to retirement savings of African Americans, who on average tend to hold less-risky assets in their retirement plans (see Choudhury 2002). DYNASIM assumes that 40 percent of employers automatically enroll employees in retirement account plans. DYNASIM also assumes that employees will increasingly adopt target-date funds in their retirement accounts. DYNASIM simulates the cash-out of retirement account balances that sometimes occurs when employees switch jobs.

DYNASIM also simulates participation in traditional defined-benefit pensions, which are particularly relevant for workers in federal, state, and local government. This simulation might be important for projecting retirement incomes by race: Black employees have the highest rate of public sector employment, followed by White employees, and then Hispanic employees with the lowest rate.

Total retirement incomes are calculated from a variety of income sources. Obvious sources of income such as Social Security, traditional pensions and retirement account withdrawals, and earnings in retirement are included. But also included are income from financial assets outside of retirement plans⁷ and benefits from

SSI, which is a means-tested program that supplements incomes for the very poor.

DYNASIM also tracks home ownership and the value of home equity net of mortgage debt. From home equity, DYNASIM calculates imputed rent, which is designed to represent the reduction to housing costs that home equity provides to homeowners over households that rent. Imputed rent is calculated as 3 percent of housing equity each year. Imputed rent is not included in DYNASIM's standard output of retirement income, but I explore it in part V because it can be important for comparisons of retirement income adequacy across racial and ethnic groupings.

DYNASIM also projects coresident income, which is the per capita value of income generated by household members other than a spouse or partner. Levels of coresident income differ by a retiree's income level, race, and other factors. As with imputed rent, coresident income is not included in DYNASIM's standard output of retirement income, but I illustrate how measured retirement incomes by race differ when coresident income is included or excluded.

DYNASIM projects outcomes by racial categories that include non-Hispanic Whites, non-Hispanic Blacks, Hispanics, and other races. Due to the fluidity of the composition of the other race category, only Whites, Blacks, and Hispanics are examined here.

The output file used for this study is run id963 of DYNASIM version 4, dated October 2018.⁸

Unfortunately, the DYNASIM output used in this study does not contain projections of health-care expenses in retirement, and the DYNASIM health-care projection figures that are available to the public are not easily integrated into this analysis.⁹ However, a separate 2018 analysis of health-care expenditures using the DYNASIM model concludes that, although current low-income seniors—who are disproportionately of minority groups—pay a substantially lower share of their incomes toward health-care costs than higher-income

6. For a review of the research, see Yao, Gutter, and Hanna (2005).

7. The measure of income focused on in this study assumes that 80 percent of financial assets are converted to an annuity, thereby producing an income stream that can be compared to other sources of retirement income.

8. These files are available in Excel format from the Urban Institute (n.d.a.).

9. DYNASIM projections of retirement health expenditures can be downloaded from the Urban Institute (n.d.b.).

retirees, costs for the poorest quintile of retirees could increase significantly by the year 2035 (Hatfield et al. 2018). The analysis does not specify what drives this increase for low-income retirees, since increases in health-care expenditures as a share of total retirement income are substantially smaller for other income groups. A reasonable conjecture is that, because incomes and assets for lower-income retiree households are projected to increase over time, a smaller share of these households would be eligible for means-tested Medicaid benefits. If realized, this change would disproportionately reduce the retirement readiness of low-income households, a group that includes a disproportionate share of Black and Hispanic retirees. It also is possible, however, that Congress will choose to adjust Medicaid eligibility thresholds over time, as it has done in the past.

A. THEORIES OF RETIREMENT SAVING

It is difficult to gauge the adequacy of retirement savings without first recognizing that retirement savings are a tool that households use for a purpose. Theories of retirement saving help elucidate that purpose, which provides a backdrop against which retirement savings adequacy can be judged.

Most economists think about retirement savings in the context of the life-cycle model of consumption.¹⁰ A basic assumption of the life-cycle model is that individuals and households care about maximizing their own well-being over time—that is, they make financial decisions such as borrowing and saving to make the most of the resources that are available to them over their lifetimes. Standard financial planning advice follows a similar, if less nuanced intuition, in that financial planners assume that households preparing for retirement wish to maintain roughly the same standard of living following retirement as they enjoyed during their working years. Thus, financial planners' common recommendation of a 70 percent target replacement rate—that is, retirement income as a percentage of pre-

retirement earnings—aims to produce the same material standard of living pre- and postretirement, after accounting for lower taxes, fewer work-related expenses, and other reduced costs of living following retirement.

Given this background, there is little in either economic theory or the practice of financial planning to indicate that households with different incomes during their working careers would seek to reach retirement with either the same total retirement income from Social Security, savings, or other sources; or the same dollar level of savings. Instead, one might expect that retirees of different income levels would seek to attain at least roughly similar replacement rates—that is, retirement incomes as a percentage of their preretirement earnings, where retirement income includes fixed benefits such as Social Security benefits, traditional pension benefits, and government transfers, along with the drawdown of retirement accounts and other savings.¹¹

Even then, however, one would not expect to see households with different levels of preretirement earnings reaching retirement with the same level of retirement savings, even relative to their preretirement earnings. The reason is that Social Security already provides a progressive replacement of preretirement earnings, thereby reducing the need for lower-earning households to save for retirement and increasing the need for high-earning households to do so. For individuals reaching age 62 in 2023, Social Security's benefit formula replaces 90 percent of annual earnings under \$1,024, 32 percent of earnings between \$1,024 and \$6,172, only 15 percent of annual earnings between \$6,172 and \$12,250, and 0 percent of annual earnings above approximately \$12,250. Thus, to attain the same replacement rate relative to preretirement earnings, a high-earning household must save a greater percentage of their preretirement earnings for retirement than a low-earning household saves.

Given differences in preretirement earnings and the progressivity of the Social Security benefit formula, much less differences in other circumstances, it is

10. Deaton (2005) provides a readable background on the origins of the life-cycle model with Modigliani and Brumberg and subsequent research. Angus Deaton was awarded the 2015 Nobel Prize in Economic Sciences for his work bringing attention to the importance of understanding consumption in a life-cycle setting.

11. It is generally held that lower-income households require higher replacement rates; that is, they will require higher retirement incomes relative to their preretirement earnings. However, simulations using an explicit life-cycle framework sometimes produce different outcomes. See Scholz and Seshadri (2009).

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	75%	72%	68%	60%	57%	52%	47%	46%
Black	10%	10%	11%	11%	11%	13%	12%	12%
Hispanic	10%	11%	14%	20%	23%	25%	29%	31%
Other races	5%	7%	7%	9%	9%	10%	12%	11%
Total	100%	100%	100%	100%	100%	100%	100%	100%

TABLE 1. Shares of the Population Age 70, by Race and Birth Cohort

Source: DYNASIM model.

difficult or impossible to accurately judge whether households of different income levels are saving adequately for retirement simply by looking at data on the distribution of retirement savings. There is neither a dollar level of retirement savings nor a ratio of savings to household earnings that necessarily designates that a household is likely to be able to maintain its preretirement standard of living once it stops working. For a very-low-earning household, where Social Security replacement rates can be quite high, even no retirement savings might be appropriate under the most widely accepted theories of retirement savings.

This analysis will start by viewing retirement income resources in dollar terms, to illustrate inequality of income and wealth by race. Next, the analysis will switch to measures of retirement income replacement rates, which help illustrate whether the rate at which households of different races are saving is consistent with common financial planning guidelines, given the level of lifetime earnings they are expected to receive. Finally, the analysis looks at how retirement incomes can differ based on whether the definition of retirement income includes or excludes the full value of financial assets, implicit rent via home equity, and income from coresidents other than spouses.

All of these measures are group medians or averages, depending on the data output, and so can hide differences within groups based on factors such as family size, health status, work histories, financial needs of other family members, and so on. The median represents the middle value of a distribution, while the

average (or mean) is influenced by the entire range of values. Summary measures across different groups yield useful information, even if each household within a group faces unique conditions and challenges.

When this study examines levels of *retirement savings*, these savings are taken to include retirement account balances, accrued benefits in traditional pensions, accrued Social Security benefits, and even home equity, which provides rent-free housing in retirement. This is a limitation of the study. Households might prepare for retirement using nonfinancial assets that can generate income in old age, such as a business or a farm. Moreover, households may save for reasons other than retirement, and even assets held in retirement plans could eventually be passed on as a bequest. For a typical household, however, savings intended for retirement savings form the majority of their financial assets and are used to provide income in old age. Thus, notwithstanding this study’s limitations, the figures presented that focus on retirement savings contain significant analytical value.

B. SHARES OF THE ELDERLY POPULATION

In coming decades, the minority share of the older population will increase dramatically. Among 70-year-olds born between 1936 and 1945, 75 percent are White. Looking forward to when Americans born between 1976 and 1985 turn 70, only 57 percent will be White (table 1). When they turn 70, 11 percent of the future retiree population born between 1976 and 1985 will be

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
Non-Hispanic Black 70-year-olds	59%	64%	66%	64%	64%	66%	65%	65%
Hispanic 70-year-olds	30%	39%	47%	43%	48%	58%	58%	60%

TABLE 2. *Lifetime Earnings of Black and Hispanic 70-Year-Olds as Percent of White 70-Year-Olds, by Birth Cohort*

Source: DYNASIM model.

Black and 23 percent will be Hispanic, with the latter more than doubling its share of retirees born in the earlier 1936-45 cohort. DYNASIM projects that, although White retirees will remain the largest single group in future years, by the time children born at the turn of the twenty-first century reach age 70, the majority of the US retiree population will be members of a minority group.

As a result, if there are systemic factors that prevent non-White Americans from saving adequately for retirement, these could become more-significant problems for retirement income adequacy in the US population as a whole.

C. DIFFERENCES IN LIFETIME EARNINGS

In most cases, retirement incomes are derived from preretirement earnings. Workers pay a share of their earnings into Social Security, which then pays retirement benefits based on a progressive replacement of preretirement earnings. Traditional pension benefits, and employee contributions to traditional pensions where applicable, are generally based on employee earnings; contributions to 401(k) and 403(b) retirement accounts similarly tend to be higher among higher-earning households.

This is why it matters that annual income and lifetime earnings differ dramatically between Americans of different races. At any given age, DYNASIM projects that, contingent on working, Whites have higher median annual earnings than Blacks, and Hispanics have the

lowest median earnings. Moreover, Whites have higher probabilities of working at any given age, followed by Hispanics and then Blacks. Hispanics, however, because a larger share of that group are immigrants, often have truncated working careers and so have fewer years prior to retirement in which they can work and save for retirement. As a result, among retirees age 70 today, who were born between 1936 and 1945, DYNASIM projects that Whites of both genders have a median of 39 years of positive earnings, versus 34 years for Blacks and 21 years for Hispanics. DYNASIM projects that, over time, these differences will narrow: for Americans born between 1956 and 1965, DYNASIM projects median work years as of age 70 of 42 years, 38 years, and 31 years, for Whites, Blacks, and Hispanics, respectively.

DYNASIM projects that individuals born between 1936 and 1945 and who survive to age 70 have median annualized earnings of \$36,189 for Whites, \$21,373 for Blacks, and \$10,949 for Hispanics. Lifetime earnings are here calculated as the average of the highest 35 years of career earnings, after earnings are adjusted for inflation. Relative to White retirees, Black retirees had just 59 percent the level of lifetime earnings while Hispanics had just 30 percent. Again, DYNASIM projects that these gaps will narrow somewhat over time. When those who were born between the years 1956 and 1965 are 70 years old, DYNASIM projects that Blacks will have 66 percent the level of lifetime earnings as Whites, and that Hispanics will have 47 percent the level of lifetime earnings as Whites (table 2).

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
Non-Hispanic White	69%	77%	77%	80%	77%	75%	75%	76%
Non-Hispanic Black	51%	61%	60%	66%	63%	64%	63%	64%
Hispanic	34%	41%	44%	43%	46%	50%	51%	52%

TABLE 3. *Percentage of Individuals Age 70 Holding Defined-Contribution Assets and/or Accrued Defined-Benefit Benefits, by Race and Birth Cohort*

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	\$293,515	\$296,261	\$225,370	\$211,198	\$221,264	\$224,634	\$268,560	\$286,262
Black	\$199,003	\$153,093	\$114,036	\$101,137	\$109,218	\$127,704	\$155,288	\$152,455
Hispanic	\$91,178	\$127,236	\$97,029	\$84,143	\$76,132	\$118,998	\$133,489	\$158,218

TABLE 4. *Median Defined-Contribution Assets or Accrued Defined-Benefit Benefits, Contingent on Holding Such Assets, by Race and Birth Cohort*

Source: DYNASIM model.

Note: 2016 dollars.

Given the dramatically different levels of lifetime earnings by race, both the life-cycle model and the standard financial planning models would predict very different levels of retirement savings by race. Part II presents details on these retirement savings.

II. RETIREMENT SAVINGS BY RACE

In part II, I review different sources of retirement wealth, showing a snapshot across decades so that we can understand how savings have evolved among Americans of different races and ethnicities. Retirees call on various resources to generate income in old age, including Social Security, defined-benefit pensions, and government transfer payments. But retirees also draw down their savings, which could include retirement accounts, other financial assets, and housing equity. Thus, comparisons of retirement readiness by race must look at how income and wealth combine to produce total retirement income resources.

Table 3 shows wide disparities by race of the share of retirees who have a retirement account balance and/or who have accrued benefits under a traditional pension.

In 2015 69 percent of White 70-year-olds born between 1936 and 1945 held either retirement account assets and/or accrued traditional pension benefits. Only 51 percent of Black retirees held private retirement plan assets, which itself was far higher than the 34 percent rate among Hispanics. DYNASIM projects that gaps in holding private retirement plan asset will narrow over time, but White households will continue to participate in retirement plans at considerably higher rates than Black or Hispanic households.

Moreover, contingent on holding private retirement plan assets, White retirees born between 1936 and 1945 had nearly \$300,000 in median retirement plan balances, versus slightly under \$200,000 for Black retirees and under \$100,000 for Hispanic retirees (table 4). Combined, tables 3 and 4 show that substantially smaller shares of Black and Hispanic households than White households hold any retirement savings other than Social Security and that, contingent on having any non-Social Security savings, levels of savings among Black and Hispanic households are also substantially lower. These two stages of description—first, the chance that a household of a given race has saved for retirement;

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	\$32,564	\$33,376	\$46,086	\$50,120	\$70,575	\$85,543	\$101,002	\$108,247
Black	\$4,574	\$4,873	\$6,852	\$10,252	\$12,844	\$17,674	\$22,814	\$21,886
Hispanic	\$3,276	\$6,879	\$11,203	\$15,114	\$19,546	\$29,920	\$37,258	\$44,395

TABLE 5. Median Per Capita Nonretirement Account Financial Assets, by Race and Birth Cohort

25TH PERCENTILE	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	\$19,750	\$36,915	\$50,550	\$65,675	\$83,948	\$87,822	\$99,614	\$107,233
Black	0	\$167	\$2,813	\$7,675	\$10,979	\$12,112	\$18,358	\$16,695
Hispanic	0	\$19	\$3,817	\$6,406	\$8,984	\$16,021	\$20,920	\$21,989
75TH PERCENTILE								
White	\$352,284	\$483,581	\$545,951	\$578,423	\$628,707	\$687,841	\$794,991	\$862,570
Black	\$45,331	\$91,487	\$135,406	\$192,682	\$230,174	\$284,711	\$333,596	\$332,192
Hispanic	\$34,341	\$90,169	\$117,933	\$132,360	\$187,517	\$288,639	\$359,426	\$374,209

TABLE 6. Per Capita Financial Accounts Plus Retirement Account Balances at Age 70, by Race and Birth Cohort, at the 25th and 75th Percentiles

Source: DYNASIM model.

Note: 2016 dollars.

second, the level of savings for households that did save—help illustrate the significant disparities in non-Social Security retirement savings among households of different races.

Table 5 shows median per capita financial assets at age 70 held outside of retirement accounts. While nonretirement financial assets are much lower for all median households of all races than retirement wealth, disparities between Whites, Blacks, and Hispanics remain prevalent. The median White retiree holds more than \$32,000 in financial assets outside of retirement accounts, while the median Black retiree holds less than \$5,000, and the median Hispanic retiree barely more than \$3,000.

To add additional detail, table 6 shows combined financial assets and retirement account balances by race and year of birth at the 25th and 75th percentiles of the distribution. While these figures do not include all potential sources of income in retirement, the differences remain dramatic. For instance, among 70-year-olds born between 1956 and 1965, who generally will be retiring in the coming decade, Whites at the 25th percentile are projected to hold financial assets and retirement account balances totaling more than \$50,000 while Black and Hispanic retirees are projected to hold balances of \$2,813 and \$3,817, respectively. At the 75th percentile, White retirees are projected to hold financial assets and retirement account balances that are several multiples higher than those held by Black and Hispanic retirees.

RACE AND ETHNICITY	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	43%	43%	43%	44%	46%	46%	46%	46%
Black	54%	50%	52%	53%	54%	55%	54%	54%
Hispanic	60%	54%	53%	57%	55%	52%	51%	51%

TABLE 7. Social Security Benefits at Age 70 as a Percent of the Highest 35 Years of Career-Average Earnings, by Race and Birth Cohort, Adjusted for Inflation

Source: DYNASIM model.

Note: Figures are for Social Security beneficiaries.

III. SOCIAL SECURITY BENEFITS AND REPLACEMENT RATES

As discussed in part II, Social Security’s progressive benefits can cause households with different levels of preretirement earnings levels to seek to accumulate very different amounts of non-Social Security retirement savings. Table 7 presents DYNASIM calculations of the replacement rate provided by Social Security, which in this case measures Social Security benefits received as of age 70 as a percentage of the highest 35 years of preretirement earnings, adjusted for inflation.¹² These figures are restricted to 70-year-olds who receive Social Security benefits. Among retiree households born between 1936 and 1945, the median retiree of all races received a Social Security benefit equal to 46 percent of their average preretirement earnings. Due to higher earnings coupled with Social Security’s progressive benefit formula, the median White retiree’s replacement rate was only 43 percent of preretirement earnings. Black retirees received higher median replacement rates of 54 percent of earnings.

Hispanic Social Security beneficiaries born between 1936 and 1945 received a median Social Security replacement rate of 60 percent of preretirement earn-

ings. These higher replacement rates for Hispanic retirees derive from several factors: First, similar to Blacks, Hispanic workers have lower average earnings than Whites, which leads to a higher replacement rate via Social Security’s progressive benefit structure. Second, Hispanic retirees tend to have fewer years of preretirement earnings than White or Black retirees, presumably due to the larger share of immigrants with truncated US working careers among the Hispanic population.¹³ And third, female Hispanic retirees are more likely than female White or Black retirees to receive a spousal supplement to their own Social Security benefit. In DYNASIM, 56 percent of Hispanic female retirees born between 1936 and 1945 were either dually entitled, meaning that they received a spousal supplement to their own benefit, or they received a spouse-only benefit. In either case, spousal supplements increase Social Security replacement rates relative to the baseline benefit formula. Importantly, however, the Social Security replacement rate figures in table 7 are for retirees who receive Social Security benefits. Relative to White or Black retirees, there are substantially more Hispanic retirees who fail to qualify for benefits due to insufficient years of covered earnings.¹⁴ DYNASIM estimates that, in 2015, only 67 percent of Hispanic-headed households age 62 and over

12. Benefits are measured as of age 70 because nearly all retirees have claimed benefits by then, due to the lack of actuarial adjustments for delayed claiming beyond age 70.

13. In DYNASIM, White individuals in the 1956-65 birth cohort had accumulated a median of 42 years of earnings by age 70, while Black individuals had accumulated 38 years of earnings. In both cases, these were sufficient to fill each year of Social Security’s 35-year wage-averaging formula with positive earnings. However, Hispanic seniors in the same birth cohort had a median of only 31 years of earnings by age 70, likely due to a combination of lower earnings contingent on work and to a higher proportion of immigrants in this group, for whom part of their working lives would have taken place outside of the United States. In the DYNASIM model, Hispanics have rates of employment that are between those of Whites and Blacks.

14. Cohen and Iams (2007) find that, among immigrants, there is a bimodal rate of return from Social Security, where immigrants who qualify for Social Security receive high benefits relative to their earnings and contributions, while those who fail to qualify receive no benefits. While immigrants and Hispanics are not entirely overlapping groups, the relatively high number of immigrants among the Hispanic population may cause this pattern of treatment by Social Security to appear among Hispanics.

received Social Security benefits, versus 99 percent of White or Black households. Thus, Social Security replacement rates for Hispanic retirees are high, but only contingent on qualifying to receive benefits. The substantial number of Hispanic retirees who do not qualify for benefits obviously receive zero replacement rates from the program, though they might have spouses who receive Social Security benefits and so might qualify for a spousal benefit on that basis. This issue will be explored in greater depth in the analysis of total retirement income replacement rates in part IV.

DYNASIM projects that, over time, differences in Social Security replacement rates by race will narrow. From the 1936–45 birth cohort through the 2006–15 birth cohort, median White replacement rates are projected to increase from 43 to 46 percent of preretirement earnings. Over that same period, replacement rates for Black retirees are projected to remain constant at 54 percent of preretirement earnings, while replacement rates for Hispanic retirees are projected to decline from 60 to 51 percent. While White retirees will continue to need higher levels of non-Social Security retirement income than Black or Hispanic retirees in order to achieve the same replacement rate from total retirement income, the differences between races are projected to be smaller than they were in the past.

IV. TOTAL RETIREMENT INCOME REPLACEMENT RATES

DYNASIM also projects replacement rates calculated from total retirement income, which provides a fuller picture of a household's ability to maintain its preretirement standard of living once it has ceased working. Parts IV and VI will present different iterations of total retirement income replacement rates that include various sources of retirement income. The baseline measure of retirement income I will focus on is referred to in DYNASIM output as stylized annuitizable income. Annuitizable income does not assume that retirees actually purchase an annuity; instead, annuitizable income is income that creates a steady annual income that can be received from a range of retire-

ment income sources, such as Social Security, traditional pension benefits, SSI benefits, and means-tested and non-means-tested welfare benefits. Rather than estimate the annual withdrawals that retirees make from retirement accounts and other financial assets, annuitizable income assumes that 80 percent of such assets are used to purchase an inflation-adjusted annuity that pays the same benefit throughout retirement.¹⁵ Annuitizable income as presented in table 8 does not include income from coresidents, or income from the 20 percent of financial assets that are assumed not to be annuitized, or implicit rent derived from housing equity. These potential income sources are examined in parts IV-A, IV-B, and V.

For the purpose of calculating replacement rates, annuitizable income is measured as of age 70, since by this age nearly all individuals eligible for Social Security have claimed benefits. Total retirement income replacement rates are calculated from annuitizable income at age 70 as a percentage of the highest 35 years of preretirement earnings, adjusted for inflation.

Table 8 shows that the median White household born between 1936 and 1945 had a total annuitizable income at age 70 equal to 111 percent of its career-average earnings, adjusted for inflation. DYNASIM projects that the median replacement rate for White retiree households will gradually decline, reaching 98 percent for retirees born between 1976 and 1985. For Black households, DYNASIM estimates a total retirement income replacement rate of 102 percent of preretirement earnings for retirees born between 1936 and 1945. DYNASIM projects that the median replacement rate for Black retirees will increase to 105 percent for those born between 1966 and 1975, but decline to 97 percent for retirees born between 1976 and 1985. DYNASIM estimates a total retirement income replacement rate of 98 percent of preretirement earnings for Hispanics born between 1936 and 1945, declining to 86 percent for Hispanic households born between 1976 and 1985. Note that these replacement rates do not account for the late-life health-care costs that households may need to cover.

Relative to conventional replacement rate targets, in which financial planners generally recommend a total

15. Annuities are assumed to be purchased at an actuarially fair rate with no fees and with payments calculated based on a 3 percent real rate of return. DYNASIM also assumes that annuities provide a 50 percent survivors payment.

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	111%	110%	103%	98%	98%	95%	94%	92%
Black	102%	102%	101%	105%	97%	95%	97%	92%
Hispanic	98%	95%	91%	90%	86%	87%	86%	81%

TABLE 8. Median Total Retirement Income Replacement Rate, by Race and Birth Cohort

	WHITE	BLACK	HISPANIC
0 - < 50%	8%	8%	14%
50 - < 75%	18%	21%	21%
75 - < 100%	17%	19%	16%
100 - < 150%	26%	22%	20%
150 - < 200%	13%	13%	10%
200% +	18%	17%	19%
< 75%	26%	29%	34%

TABLE 9. The Distribution of Total Retirement Income Replacement Rates at Age 70 for Birth Cohort 1936-45, by Race

Source: DYNASIM model.

Note: Replacement rates are equal to annuitizable income at age 70 divided by the highest 35 years of preretirement earnings, adjusted for inflation.

retirement income equal to about 70 percent of preretirement earnings, the median replacement rates reported in table 8 appear to be more than sufficient for the typical household of all races to maintain its preretirement standard of living, at least according to common financial planning benchmarks. These figures do not necessarily imply that each household would consume retirement income at such a rate, because most households do not annuitize and many draw down their assets at a slower rate than an annuity formula would imply. However, these figures provide a shorthand for the resources available for consumption by retiree households.

It is noteworthy that Hispanic retirees, despite receiving the highest Social Security replacement rates, also had the lowest total retirement income replacement rates. While the sensitivity of this result to the inclusion of coresident income will be examined in IV-A, these baseline results may reflect insufficient personal

retirement savings outside of Social Security by Hispanic-headed households.

Moreover, even if the median retirement income replacement rate is above financial advisors' recommended levels, this does not guarantee that all retirees will be able to maintain their standards of living in old age. The median is the midpoint of the distribution, and thus half of retirees would have replacement rates below the median values reported in table 8. Table 9 shows the distribution of total retirement income replacement rates, by race, for retirees born between the years 1936 and 1945. For instance, table 9 shows that 8 percent of White retirees born between 1936 and 1945 had total retirement incomes equal to less than 50 percent of their career-average preretirement earnings, 18 percent had retirement incomes equal to between 50 and 75 percent of their prior earnings, 17 percent had replacement rates between 75 and 100 percent of prior earnings, and so forth.

The final line of table 9, which shows the percentage of retiree households with incomes below 75 percent of their career-average earnings, is particularly relevant because it may indicate the share of retirees who are unable to maintain their preretirement standard of living. It is common for financial planners to recommend a 70 percent replacement rate as sufficient for a retiree to maintain their preretirement standard of living (see Biggs and Springstead 2008). For the 1936 to 1945 cohort, there are no dramatic differences in total retirement income replacement rates between races: 26 percent of White retirees had replacement rates below 75 percent, versus 29 percent of Black retirees and 34 percent of Hispanic retirees.

More troubling is the higher share of Hispanic retirees—14 percent versus 8 percent for White and Black retirees—with replacement rates below 50 percent of preretirement earnings. As discussed above, despite high median replacement rates from Social Security for those who receive benefits, Hispanics also have higher levels of retirees who fail to qualify for benefits due to insufficient years of covered earnings. Lower incidence of Social Security receipt appears to reduce total retirement income replacement rates in Hispanic households.

Moreover, DYNASIM projects that low retirement income replacement rates could worsen for Hispanic households over time, while White and Black retiree households are projected to experience only small increases in the share of retirees with incomes below 75 percent of their preretirement earnings. By the time the 1966 to 1975 birth cohort reaches age 70, 16 percent of Hispanic retiree households are projected to have total retirement income replacement rates below 50 percent of preretirement earnings, with 30 percent of Hispanic households projected to have replacement rates below 75 percent. By contrast, only 7 percent of White and Black households born between 1966 and 1975 are projected to have replacement rates below 50 percent, a decline of 1 percentage point from the 1936 to 1945 birth cohort, with 30 percent of White and 31 percent of Black households having replacement rates below 75 percent.

A. INCLUDING CORESIDENT INCOME AND SPENDING NEEDS

It is conventional to think of retirees living either as singles or as couples. Extended and multigenerational households that include retirees are not uncommon, however, and present challenging analytical questions as to how retirement income adequacy should be assessed. Moreover, Americans of different races have different probabilities of living in extended or multigenerational households, such that consideration of extended households could affect conclusions regarding retirement security as considered by race.

In the SSA's MINT model, which is similar in many respects to DYNASIM, Black and Hispanic retirees are approximately twice as likely as White retirees to live in a household that includes a member other than a spouse or partner (Smith et al. 2007). The 2007 version of the MINT model projected that 14.5 percent of Americans age 62 and over in 2020 would reside with a family member other than a spouse. Among Whites, 11.6 percent of retiree households had a non-spouse member, with 20.9 percent of Black and 22.4 percent of Hispanic retirees living in extended households.

An extended household can improve retirement income adequacy by including income brought in by coresidents and by reducing the costs of living per person through economies of scale. In addition, access to an extended household, when or if needed, can serve as an economic backstop in the case of a health-care or financial emergency.

Coresident income can flow in both directions, however. In the SSA's MINT model, the inclusion of coresident income increases per capita retiree incomes among low-income retirees, where coresident family members have higher incomes than retirees. Among higher-income retirees, however, the opposite is true, and retirees appear to be subsidizing other household members rather than being supported by them (Smith et al. 2007). A similar dynamic appears to hold when households are examined by race: coresidents in Black and Hispanic households have higher incomes than coresidents in White households, though in all three groups the inclusion of coresident incomes increas-

	Dollars	Percent of household income
White	\$4,102	6%
Black	\$7,080	22%
Hispanic	\$10,247	38%

TABLE 10. *Other Family Income in Dollars Per Capita and Percent of Total Household Income, by Race, for Households Age 62+ in 2015*

Source: Author's calculations from DYNASIM model.

es average household incomes relative to the poverty threshold.

In some circumstances, extended households are a matter of tradition or preference, in which case the additional income and cost efficiencies generated by living in a larger household should be included in calculations of retirement income adequacy. On the other hand, living in an extended household can also be the result of financial need, in which case incorporating the effects of household size and income could serve to hide inadequate retirement incomes. Because it is difficult to differentiate the two causes of retirees living in extended households, this section illustrates the upper and lower bounds of incorporating coresident income in measures of retirement income adequacy.

Table 10, which is drawn from DYNASIM output, shows mean amounts of coresident income in dollars and the percent by which the inclusion of coresident income raises the per capita income of retirees. Note that much of the previous analysis was focused on medians rather than on means, but median levels of coresident income are not available in the public DYNASIM output. Mean levels of coresident income will exceed the median. These figures show that mean coresident income is larger both in dollar terms and as a percentage of mean total retiree income for Black and Hispanic than it is for White retiree households. The inclusion of coresident income would increase mean per capita incomes among White retirees by only 6 percent, but would raise incomes among Black and Hispanic retirees by 22 and 38 percent, respectively. Replacement rates by race would rise by similar percentage (not percentage

point) terms, though the retirees for whom coresident income projections are available differ from those for whom replacement rates are calculated. The former group is households age 62 and over while replacement rates are calculated at age 70 for households of a given set of birth years.

As noted earlier, it is unclear whether coresident income imparts a financial advantage on a retiree household or is merely a reflection of financial need. Within any racial group, however, a retiree with access to an extended household in times of need might have better prospects for retirement income security than a retiree who does not have an extended household to fall back on if needed. While the data presented here cannot answer the question of preference versus need in causing retirees to live in extended households, the inclusion of income figures that include coresident income provide a maximum value by which extended households might be considered to improve retirement income adequacy.

The figures on coresident income presented in table 10 are for the mean household by race, whereas the retirement income replacement rate figures presented in parts IV and V are medians. Thus, using the publicly available DYNASIM output, it is not possible to calculate how the inclusion of coresident income would increase retirement income replacement rates. Most likely there would be little change at the median, given that only a minority of retirees of any race receive coresident income. However, replacement rates could increase among lower-income retirees where extended households are more common.

PANEL 11A: BALANCES			
	RETIREMENT ACCOUNTS	OTHER FINANCIAL ASSETS	TOTAL
White	\$94,459	\$324,184	\$418,643
Black	\$39,244	\$45,405	\$84,649
Hispanic	\$27,224	\$67,046	\$94,270
PANEL 11B: INCOME FROM FINANCIAL ASSETS			
	RETIREMENT ACCOUNTS	OTHER FINANCIAL ASSETS	TOTAL
White	\$5,948	\$20,415	\$26,363
Black	\$2,343	\$2,711	\$5,054
Hispanic	\$1,621	\$3,993	\$5,615
PANEL 11C: INCREASE IN MEAN TOTAL INCOME IF FINANCIAL ASSETS FULLY ANNUITIZED			
	RETIREMENT ACCOUNTS	OTHER FINANCIAL ASSETS	TOTAL
White	2.2%	7.7%	9.9%
Black	1.8%	2.1%	4.0%
Hispanic	1.5%	3.7%	5.2%

TABLE 11. Mean Per Capita Financial Assets, Income from Financial Assets, and Increase in Total Income from Fully Annuitizing Financial Assets, by Race

Source: Author's calculations from DYNASIM model.

Note: Figures are for households age 62+ in 2015.

B. INCLUDING THE FULL VALUE OF FINANCIAL ASSETS

The annuitizable income methodology in DYNASIM converts financial assets such as retirement accounts to an income stream, under the stylized assumption that retirees purchase an annuity using 80 percent of the value of their financial assets. The remaining 20 percent is assumed not to be spent; or is assumed to be held either as a reserve against an unusually long lifespan, to cover late-in-life health-care costs, or as a bequest for children or others. While this methodological approach might be a reasonable representation of how retiree households tend to spend down their

financial assets, by counting only 80 percent of financial assets as income, it also understates the resources that are available to retirees should they need them. Moreover, because the ownership of financial assets is far more common among White than among Black or Hispanic households, this assumption might make potential retirement incomes appear more equal than they truly are.¹⁶

In part IV-A, I relax the assumption that financial assets are not fully converted to income in retirement. I first illustrate only with retirement account assets, which seems more reasonable given that these are savings that are expressly intended to generate income in retirement. I then expand the illustration to include all

16. In addition, while less a focus of this study, failing to fully annuitize financial assets would tend to reduce retirement incomes as measured in simulation models over time because traditional defined-benefit plans increasingly give way to retirement accounts as a source of income to retirees. One dollar of accrued benefits in a traditional pension is assumed to generate one dollar of actual benefits over the course of a retiree's lifetime, while a similar dollar of retirement account assets is assumed to generate only 80 cents of lifetime benefits.

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	84%	82%	83%	87%	84%	81%	81%	80%
Black	64%	58%	56%	60%	59%	57%	58%	57%
Hispanic	56%	57%	61%	63%	60%	61%	60%	60%

TABLE 12. *Probability of Owning a Home at Age 70, by Race and Birth Cohort*

Source: DYNASIM model.

financial assets, including those held outside of retirement accounts. These illustrations show the otherwise nonreported financial capacity that retiree households may have, either to enjoy an improved standard of living in retirement or to weather financial shocks.

Table 11 illustrates the differential effects of changing the assumption that only 80 percent of financial are converted to income in retirement. The upper panel of table 11 shows that financial assets, in particular assets held outside of formal retirement accounts, are unequally distributed at the mean. On average, Whites age 62 and over in 2015 held retirement account assets that are more than twice those of Blacks and three times those of Hispanics. Financial assets held outside of retirement accounts were even more unequally distributed.

Panel 11b shows DYNASIM projections of the annuitized values of 80 percent of financial assets. These values also are highly unequal across groups. Panel 11c assumes that 100 percent of financial assets are annuitized, then calculates the increase in total annuitizable incomes that would be generated from that assumption. The difference in incomes from fully annuitizing retirement accounts is relatively modest across races: for White retirees, total mean incomes would increase by 2.2 percent versus 1.8 percent for Black retirees and 1.5 percent for Hispanic retirees. Fully annuitizing all financial assets, including those held outside of retirement accounts, would have more-dramatic effects: total mean retirement incomes for White retiree households would increase by 9.9 percent, versus only 4.0 percent for Black retiree households and 5.5 percent for Hispanic retiree households.

It is unclear whether it is more reasonable to assume that retiree households annuitize 80 percent of financial assets or that they annuitize 100 percent of financial assets. At a minimum, however, these figures indicate either that White retiree households can enjoy higher incomes in retirement or that they hold significantly greater financial assets in reserve against emergencies than can Black and Hispanic retirees.

V. IMPLICIT RENT FROM HOUSING EQUITY

A household that owns its home has access to a source of rent-free accommodation during retirement. All other things equal, a retiree household that owns its home has a lower cost of living than a retiree household that must rent. Economists refer to the value of home equity as implicit rent, meaning the amount the household saves versus having to rent a home. DYNASIM does not include implicit rent in its standard measures of retirement income or retirement income replacement rates. The model does track homeownership, however, and thus it is possible to illustrate the effects of implicit rent on retiree household incomes.

Table 12 shows that White retirees are significantly more likely to own their home than are Black or Hispanic retirees. For retirees born between 1936 and 1945, 84 percent of White retirees owned their home versus only 64 percent of Black retirees and 56 percent of Hispanic retirees.

Moreover, the value of home equity contingent on owning a home was higher for Whites than for other races. Again, for retirees born between 1935 and 1945, White homeowners had median home equity of more than

	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	\$112,750	\$134,649	\$147,535	\$149,986	\$162,448	\$183,806	\$204,475	\$226,220
Black	\$73,707	\$86,691	\$72,637	\$86,724	\$99,740	\$122,707	\$125,873	\$140,870
Hispanic	\$78,707	\$92,945	\$97,476	\$95,792	\$113,678	\$146,866	\$167,173	\$194,694

TABLE 13. Median Home Equity at Age 70 Contingent on Owning a Home, by Race and Birth Cohort

Source: DYNASIM model.

Note: 2016 dollars.

\$112,000 while Black and Hispanic homeowners held home equity of less than \$74,000 and \$79,000, respectively (table 13).

Table 14 combines data from tables 12 and 13 to provide an approximate measure of the home equity held by the typical retiree households of different races. The probability of home ownership is multiplied by median (not mean) housing equity, contingent on homeownership to produce an adjusted value. This approach is taken due to limitations in the publicly available DYNASIM output and provides only an illustrative approximation of the home equity held by the typical retiree household by race.

Panel 14a in table 14 shows this calculation of adjusted housing equity, while Panel 14b converts adjusted housing to implicit rent by multiplying equity by 3 percent. For retirees born between 1936 and 1945, White retirees at age 70 have access to annual per capita implicit rent of \$2,841. This value is more than twice that for Black and Hispanic retirees, who receive per capita implicit rent of \$1,415 and \$1,322, respectively.

There is no clear answer on whether housing equity should be considered as part of retirement incomes. If implicit rent is counted, however, doing so increases the incomes and retirement readiness of White retiree households by a greater amount in dollar terms. In percentage terms, the inclusion of implicit rent would increase the total retirement income by about 7 percent for the median White retiree at age 70, by about 6 percent for the median Black retiree at age 70, and by about 9 percent for the median Hispanic retiree at age 70.

Put in simple terms, the substantially higher rate of home ownership among White retirees likely advantages them relative to Black and Hispanic retirees in terms of maintaining their standard of living in old age. This does not necessarily mean that Black and Hispanic households should seek to increase their rate of homeownership; that may or may not be the optimal financial strategy for those households' retirement planning. These figures do, however, reflect an often-unreported financial advantage that White retirees possess relative to Black and Hispanic seniors.

VI. POVERTY IN OLD AGE

The discussion above outlines that, while retirement income replacement rates vary by race, median replacement rates across races remain well above the 70 percent amount that many financial advisors target. And yet rates of poverty in old age remain wildly disparate between Whites, Blacks, and Hispanics. The juxtaposition of seemingly adequate replacement rates and high rates of old-age poverty among Blacks and Hispanics seemingly presents a puzzle. Black and Hispanic households are saving for retirement as economic and financial planning theory says they should, but nevertheless sometimes retire into poverty. But the solution to that puzzle helps resolve some gaps in our knowledge regarding retirement planning, as well as pointing toward possible policy solutions to improve retirement security.

Table 15 reports the share of individuals age 62 and over with incomes below 100 percent and 200 percent of the federal poverty threshold, broken down by race

PANEL 14A: ADJUSTED HOUSING WEALTH								
	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	\$94,710	\$110,412	\$122,454	\$130,488	\$136,456	\$148,883	\$165,625	\$180,976
Black	\$47,172	\$50,281	\$40,677	\$52,034	\$58,847	\$69,943	\$73,006	\$80,296
Hispanic	\$44,076	\$52,979	\$59,460	\$60,349	\$68,207	\$89,588	\$100,304	\$116,816
PANEL 14B: ADJUSTED IMPLICIT RENT								
	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95	1996-2005	2006-15
White	\$2,841	\$3,312	\$3,674	\$3,915	\$4,094	\$4,466	\$4,969	\$5,429
Black	\$1,415	\$1,508	\$1,220	\$1,561	\$1,765	\$2,098	\$2,190	\$2,409
Hispanic	\$1,322	\$1,589	\$1,784	\$1,810	\$2,046	\$2,688	\$3,009	\$3,504

TABLE 14. *Adjusted Per Capita Housing Equity and Implicit Rent at Age 70, by Race and Birth Cohort*

Source: Author's calculations from DYNASIM model.

Note: 2016 dollars. See text for how the figures in table 14 are generated.

and by year. In 2015, only 6 percent of Whites age 62 and above had incomes below 100 percent of the poverty threshold, versus 16 percent of Blacks and 25 percent of Hispanics. Similarly, only 23 percent of White seniors in 2015 had incomes below 200 percent of the poverty threshold, versus 43 percent of Blacks and 51 percent of Hispanics.

Among all groups, poverty is projected to decline in coming decades because retirement incomes are projected to increase in inflation-adjusted terms, whereas the dollar value of the poverty threshold is increased only with inflation. For that reason, comparisons of poverty by race become more difficult to interpret in future years. Nevertheless, DYNASIM projects that differences in the incidence of poverty by race will remain stark.

VII. CONCLUSIONS AND POLICY IMPLICATIONS

This study examines retirement savings and retirement income adequacy for Whites, Blacks, and Hispanics in the United States. These groups have dramatically different levels of earnings over their working careers,

which translates to very different levels of income in retirement. White retirees have the highest retirement incomes by a substantial margin, while Black and Hispanic retirees face a greater risk of poverty in old age.

Both Black and Hispanic households benefit from Social Security's progressive benefits, which provide these households with higher benefits relative to pre-retirement earnings than are received by White households. Hispanic households benefit disproportionately from Social Security's supplemental spousal benefits. Hispanic retirees are disadvantaged, however, by having far lower rates of Social Security benefit receipt than White or Black retirees, presumably due to higher levels of immigrants in the Hispanic population.

The White advantage in retirement income depends on how income is defined. Including home equity and the full value of financial assets increases White retiree household incomes relative to Black and Hispanic retiree households, while the inclusion of coresident income helps Black and, especially, Hispanic households. However, there is no definition of retirement income in which the gap between Whites and Black and Hispanic retirees comes close to being closed.

SHARE OF INDIVIDUALS AGE 62 AND OVER WITH INCOMES BELOW 100% OF THE FEDERAL POVERTY THRESHOLD						
	2015	2025	2035	2045	2055	2065
White	6%	5%	4%	4%	3%	3%
Black	16%	12%	11%	11%	9%	7%
Hispanic	25%	21%	17%	16%	14%	11%
Other	14%	12%	10%	8%	8%	6%
SHARE OF INDIVIDUALS AGE 62 AND OVER WITH INCOMES BELOW 200% OF THE FEDERAL POVERTY THRESHOLD						
	1936-45	1946-55	1956-65	1966-75	1976-85	1986-95
White	23%	19%	18%	16%	14%	12%
Black	43%	37%	35%	32%	28%	23%
Hispanic	51%	44%	38%	34%	29%	23%
Other	35%	29%	25%	22%	20%	17%

TABLE 15. Poverty Status of Individuals Age 62 and Over, by Race and Year

Source: DYNASIM model.

At the same time, and despite significantly lower retirement incomes, most Black and Hispanic households do not appear to be saving inadequately for retirement, given their level of lifetime earnings and the progressivity of the Social Security benefit structure. Most households, of all races, receive retirement income replacement rates of preretirement earnings that are in excess of those commonly recommended by financial planners. Increasing retirement savings to generate higher incomes in retirement could leave households with a lower standard of living during their working years than in retirement, which is contrary to what the life-cycle model or standard financial planning would recommend. Put in simple terms, many retirees of all races, but in particular Black and Hispanic retirees, are poor in retirement not only because they failed to save enough, but also because they were poor during their preretirement years as well.

This finding sheds light on different policy approaches to increasing the incomes of Black and Hispanic retirees. First, while retirement saving opportunities should be made available to all Americans, regardless of whether their employer offers a retirement plan, this

does not necessarily imply that working-age households with low incomes and low savings should be pressured to take part. Many of those households might already be saving optimally according to the standard approaches to retirement planning used by economists or financial planners, given their levels of lifetime earnings. The benefits of higher retirement savings to reduce the risk of poverty in old age could be offset by a higher risk of a sub-poverty level standard of living during the household's working years. Retirees might benefit from the availability of annuity products that convert financial assets such as retirement accounts to steady income streams over the course of retirement. Due to the protections that annuities provide against longevity risk, retirees might be more willing to consume the full value of their monthly annuity benefit, thereby increasing retirees' standard of living by using their retirement savings more efficiently. Retirees might still wish to hold back a certain amount of savings to cover late-in-life health-care costs that are not covered by Medicare, such as long-term care, though the amounts necessary would differ by the income level of the retiree household due to mean-tested benefits provided by Medicaid. Some analysts have proposed

an annuity product that incorporates a long-term-care insurance policy, which would help retirees optimize their incomes through retirement while insuring against unlikely but potentially very high health-care costs late in life (see Brown and Warshawsky 2013).

Second, programs such as Social Security and SSI benefits could be modified to provide stronger poverty protections for retirees. A stronger retirement income safety net could better protect Black and Hispanic households from poverty in old age without requiring them to save excessively during their working years, when poverty is often an even greater threat than during retirement. Policymakers and analysts have proposed a variety of changes to Social Security or other programs that could reduce poverty in retirement, which falls predominantly on Black and Hispanic Americans. Various lawmakers have endorsed supplementing Social Security benefits for retirees who worked long careers at low wages. This author has argued for Social Security reforms that would set the minimum benefit for all retirees at single, over-65 poverty thresholds, adjusted going forward with the rate of economywide wage growth (Biggs 2013). Either approach would disproportionately benefit racial and ethnic minorities because they are more likely to retire into poverty.

Third, the best but most difficult solution would narrow the still-considerable lifetime earnings gaps between White, Black, and Hispanic household. The figures discussed in this study indicate that Black and Hispanic households are more likely to be poor in retirement not because they fail to save optimally, but because they are more likely to be poor throughout their lives. Our nation has for decades wrestled with the economic inequalities between races and it is unlikely that a single simple or noncontroversial policy reform would quickly bring earnings parity between the races. That should remain the goal, however; as progress is made in reaching it, income disparities between White, Black, and Hispanic retirees are likely to shrink.

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