



The Decline of African-American and Hispanic Wealth since the Great Recession

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Abstract. Using data from the Survey of Consumer Finances, I find that the ratio in standard net worth NW between African-Americans and (non-Hispanic) whites was the same in 2007 as in 1983 (0.19) but then fell to 0.14 in 2016. The wealth ratio between Hispanics and non-Hispanic whites climbed considerably between 1983 and 2007, from 0.16 to 0.26, but then plunged to 0.19 in 2016. One of the most striking differences between minorities and whites was the very high leverage (debt-net worth ratio) of the former. On the eve of the Great Recession, it was 0.55 for blacks, 0.51 for Hispanics, and just 0.18 for whites. Both minorities also had a higher share of their assets in homes than whites (54 and 53 percent, compared to 31 percent). The homeownership rate among African-American families climbed from 44.2 percent in 1983 to 50.1 percent in 2004 but then fell off to 44.0 percent in 2016, while that of Latino families, went up from 32.6 to 49.2 but then tumbled to 45.4 percent. Decomposition analysis reveals that the lower rate of return on wealth held by minorities relative to whites explained a large share of the widening of the wealth gap between 2007 and 2010. From 2010 to 2016, the rate of return was higher for minorities than whites but this was offset by larger dissavings.

On a positive note, perhaps not surprisingly adding pension and Social Security wealth to the household portfolio substantially lowers the wealth gap. The ratio of mean augmented wealth AW (the sum of net worth, pension, and Social Security wealth) between black and white households was 0.27 in 2016, compared to 0.14 in NW, and the mean AW ratio between Hispanics and whites was 0.28, compared to 0.19 for NW. Differences in ratios of medians were even more extreme. The black-white ratio of mean AW rose from 0.27 in 1989 to 0.30 in 2007 but then declined to 0.27 in 2016, the same as in 1989, while the NW ratio dropped off from 0.17 in 1989 to 0.14 in 2016. The Hispanic-white ratio in mean AW increased from 0.25 to 0.33 but then fell off to 0.28, though still above its 1989 level, while the NW ratio rose from 0.16 to 0.19. Similar results hold for the ratio of medians. In 2016, NW inequality was considerably higher for blacks and Hispanics than whites (by 0.120 and 0.093 Gini points, respectively), but AW inequality was considerably lower (by 0.098 and 0.067 points, respectively). While AW inequality increased by 0.067 Gini points for whites from 1989 to 2016, it fell by 0.046 Gini points for blacks and by 0.015 points for Hispanics. Social Security wealth was the principal factor. [Word count: 449!!!]

Keywords: household wealth, inequality, racial inequality, portfolio composition, pensions, Social Security

JEL Codes: D31, J15

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1. Introduction

This paper documents more or less steady deterioration in the income, wealth holdings, and the homeownership rate of black and Hispanic households relative to white households from 1983 to 2016, particularly since the onset of the Great Recession. It is also the case that the gap in wealth between the minorities and whites was considerably greater than the gap in income. Using decomposition analysis, I show that differences in capital revaluation explain much of the racial/ethnic wealth gap with savings, wealth transfers, and other factors accounting for the remainder. I also standardize wealth trends using a constant racial/ethnic mix to see how changes in race/ethnicity composition affect overall time trends.

The paper focuses mainly on how the different racial and ethnic groups fared in terms of wealth over years 2007 to 2010 during one of the sharpest declines in stock and real estate prices and over years 2010 to 2016 as asset prices recovered. The wealth gap between African-American and white families was much the same in 2007 as in 1983 but it lessened considerably for Latinos over these years.¹ The relative indebtedness of minorities exploded from 1983 to 2007, making their finances very fragile in 2007. The main question is whether their wealth position deteriorated over the Great Recession. The racial and ethnic disparity in wealth holdings widened considerably in the years between 2007 and 2010. Hispanics, in particular, got hammered over these years in terms of net worth. However, during the recovery period, from 2010 to 2016, the racial wealth gap remained largely unchanged, though there was some diminution of the ethnic wealth gap.

The period covered in this paper is from 1983 to 2016. The choice of years is dictated by the availability of survey data on household wealth. By 2016, we will be able to see what the fall-out was from the financial crisis and associated recession and, in particular, which racial/ethnic groups were impacted the most.

The rest of the paper is organized as follows. The next section, Section 2, provides some historical background. Section 3 discusses the measurement of household wealth and describes the data sources used for this study. Section 4 presents results on time trends on wealth holdings by race and ethnicity. Section 5 highlights differences in portfolio composition among the three groups and reports on the results of a decomposition analysis of racial and ethnic wealth differences. Section 6 adds pension and Social Security wealth to the household portfolio for years 1989 to 2016.² A summary of results and concluding remarks are provided in Section 7.

2. Historical background on asset price movements

The last two decades have witnessed some remarkable events. Perhaps, most notable was the housing value cycle which first led to an explosion in home prices and then a collapse, affecting net worth and helping to precipitate the Great Recession, followed by a strong recovery. The median house price remained virtually the same in 2001 as in 1989 in real terms.³ However, the home ownership rate shot up

¹ Technically, “Latinos” refer to people of Latin American descent, while “Hispanics” refer to Hispanic-speaking persons living in the U.S., especially of Latin American descent. The official SCF category is “Hispanics.” However, here, I use the two terms interchangeably.

² Complete data on defined benefit and Social Security wealth are not available for 1983 (see below).

³ The source for years 1983 to 2007 is Table 935 of the *2009 Statistical Abstract*, US Bureau of the Census, available at <http://www.census.gov/compendia/statab/>. For years after 2007, the source is: National Association of Realtors, “Median Sales Price of Existing Single-Family Homes for Metropolitan Areas,” available at: <http://www.realtor.org/sites/default/files/reports/2012/embargoes/2012-q1-metro-home-prices-49bc10b1efdc1b8cc3eb66dbcdad55f7/metro-home-prices-q1-single-family-2012-05-09.pdf> [both accessed April 17, 2018]. The figures are based on median prices of existing houses for metropolitan areas only. All figures are in constant (2016) dollars unless otherwise indicated.

from 62.8 to 67.7 percent. Then, 2001 saw a recession (albeit a short one). Despite this, house prices suddenly took off and over the years 2001 to 2007 housing prices gained 19 percent.⁴ The home ownership rate continued to expand, though at a somewhat slower rate, from 67.7 to 68.6 percent.

Then, the recession and associated financial crisis hit. The recession officially began in December, 2007, and “officially” ended in June, 2009.⁵ Over this period, real GDP fell by 4.3 percent and then from the second quarter of 2009 to the second quarter of 2013 it gained 9.2 percent. After that it grew by another 6.8 percent through the third quarter of 2016.⁶ The unemployment rate shot up from 4.4 percent in May of 2007 to a peak of 10.0 percent in October of 2009 but by October of 2016 it was down to 4.9 percent.⁷

One consequence was that asset prices plummeted. From 2007 to 2010, the median home price (in constant dollars) nose-dived by 24 percent, and the share of households owning their own home fell off, from 68.6 to 67.2 percent. This was followed by a partial recovery, with median house prices rising 7.8 percent through September 2013, though still far below its 2007 value. However, the homeownership rate continued to contract, falling to 65.1 percent. In contrast, median home prices in real terms jumped by 18.4 percent from 2013 to 2016, though the homeownership rate continued to fall to 63.7 percent.

In contrast to the housing market, the stock market boomed during the 1990s. On the basis of the Standard & Poor (S&P) 500 index, stock prices surged 159 percent in constant dollars between 1989 and 2001.⁸ Stock ownership spread and by 2001 over half of U.S. households owned stock either directly or indirectly (see Section 6 below). However, the stock market peaked in 2000 and was down by 11 percent from 2000 to 2004. From 2004 to 2007, the stock market rebounded, with the S&P 500 rising 19 percent. From 2001 to 2007, stock prices were up 6 percent. However, the stock ownership rate fell to 49 percent. Then came the Great Recession. Stock prices crashed from 2007 to 2009 and then partially recovered in 2010 for a net decline of 26 percent. The stock ownership rate also once again declined, to 47 percent. The stock market continued to rise after 2010 and by 2013 was up 39 percent over 2010 and above its previous high in 2007. However, the stock ownership rate continued to drop, to 46 percent. Once again, the stock market continued to boom from 2013 to 2016, up by 27.9 percent in real terms⁹, but in this case

⁴ The Case-Schiller 20-City Composite Home Price NSA Index showed a rather different trend. It advanced by 35.0 percent from January, 2001, to January, 2004, and then by 33.5 percent from January, 2004, to January, 2007 (the source is: <https://fred.stlouisfed.org/series/SPCS20RSA> [accessed November 6, 2017]). It is not clear why the trends are so different between the two sources. However, the Case-Shiller index is based on data from the largest 20 metropolitan areas, whereas the National Association of Realtors index is much broader based, covering some 160 metropolitan areas. For my purposes here, the latter is a more reliable indicator of national housing price movements.

⁵ The source is: <http://www.nber.org/cycles/cyclesmain.html> [accessed April 20, 2014]. As noted above, I use the term “Great Recession” to refer to the period from 2007 through 2010.

⁶ The source for the GDP figures is http://www.bea.gov/iTable/index_nipa.cfm [accessed December 1, 2016].

⁷ The source is the U.S. Bureau of Labor Statistics at: <http://data.bls.gov/timeseries/LNS14000000> [accessed December 1, 2016].

⁸ The source for stock prices is Table B-96 of the *Economic Report of the President, 2013*, available at <http://www.gpoaccess.gov/eop/tables13.html>, with updates to 2013 from: <http://us.spindices.com/indices/equity/sp-composite-1500> [both accessed April 17, 2018].

⁹ This figure is based on the change in the S&P 500 index from early March, 2013, to early March 2016. Different

the stock ownership rate rebounded to 49.3 percent.

What have all these major transformations wrought in terms of the distribution of household wealth by race and ethnicity? This is the subject of the remainder of the paper.

3. Data sources and methods

The primary data sources used for this study are the 1983, 1989, 1992, 1995, 1998, 2001, 2004, 2007, 2010, 2013, and 2016 Survey of Consumer Finances (SCF) conducted by the Federal Reserve Board. Each survey consists of a core representative sample combined with a high-income supplement. In 1983, for example, the supplement was drawn from the Internal Revenue Service's Statistics of Income data file. Starting in 1989, the high income supplement was selected as a list sample from statistical records (the Individual Tax File) derived from tax data by the Statistics of Income Division of the Internal Revenue Service (SOI). This second sample was designed to disproportionately select families that were likely to be relatively wealthy (see, for example, Kennickell, 2001). Typically, about two thirds of the cases come from the representative sample and one third from the high-income supplement.

The principal wealth concept used here is marketable wealth (or net worth), which is defined as the current value of all marketable or fungible assets less the current value of debts. Total assets are the sum of: (1) housing; (2) other real estate; (3) bank deposits, certificates of deposit, and money market accounts; (4) financial securities; (5) the cash surrender value of life insurance plans; (6) the value of defined contribution pension plans, including IRAs, Keogh, and 401(k) plans; (7) corporate stock and mutual funds; (8) net equity in unincorporated businesses; and (9) equity in trust funds. Total liabilities are the sum of: (1) mortgage debt, (2) consumer debt, including auto loans, and (3) other debt such as educational loans.

This measure reflects wealth as a store of value and therefore a source of potential consumption. I believe that this is the concept that best reflects the level of well-being associated with a family's holdings. Thus, only assets that can be readily converted to cash (that is, "fungible" ones) are included. As a result, consumer durables such as automobiles, televisions, and the like, are excluded here, since these items are not easily marketed, with the possible exception of vehicles, or their resale value typically far understates the value of their consumption services to the household. Another justification for their exclusion is that this treatment is consistent with the national accounts, where purchase of vehicles is counted as expenditures, not savings. As a result, my estimates of household wealth will *differ* from those provided by the Federal Reserve Board, which includes the value of vehicles in their standard definition of household wealth (see, for example, Kennickell and Woodburn, 1999).

Also excluded in the concept of net worth is the value of future Social Security benefits the family may receive upon retirement ("Social Security wealth"), as well as the value of retirement benefits from private pension plans ("pension wealth"). Even though these funds are a source of future income, they are not in their direct control and cannot be marketed. The value of these two components will be included in a measure of augmented wealth as detailed in Section 6.

I also use a more restricted concept of wealth, which I call "financial resources" or FR. This is defined as net worth minus net equity in owner-occupied housing (the primary residence only). FR is a more liquid concept than marketable wealth, since one's home is difficult to convert into cash in the short term. Moreover, primary homes also serve a consumption purpose besides acting as a store of value. FR represents what a household can draw down without lowering its standard of living. Thus, it excludes homes (and vehicles) and reflects the resources that may be immediately available for consumption

three-year periods show somewhat different time trends.

expenditure or various forms of investments.¹⁰

4. The racial divide widens over the Great Recession

4.1 Trends from 1983 to 2007

Striking differences are found in the wealth holdings of different racial and ethnic groups. In Table 1, households are divided into three groups: (i) non-Hispanic whites, (ii) non-Hispanic African-Americans, and (iii) Hispanics.¹¹ In 2006, while the ratio of mean incomes between non-Hispanic white (“white”) and non-Hispanic black (“black”) households was an already low 0.48 and the ratio of median incomes was 0.60, the ratios of mean and median wealth holdings in 2007 were even lower, at 0.19 and 0.06, respectively, and those of FR still lower, at 0.14 and 0.01, respectively (also see Figures 1a, 1b, 1c, 2a, 2b, 2c, 3a, 3b, 3c, 4a, 4b, 4c, 5a, 5b, 5c, and 6).¹² The homeownership rate for black households was 49 percent in 2007, a little less than two thirds the rate among whites, and the percentage of black households with zero or negative net worth stood at 33.4, more than double the corresponding percentage among whites (see Figures 7a, 7b, 7c, 8a, 8b, and 8c). The Gini coefficient for net worth among whites was 0.818 whereas it was considerably higher among blacks at 0.848 and among Latinos at 0.880.

[Table 1 and Figures 1a – 9b about here]

Between 1982 and 2006, while the average real income of white households increased by 42 percent and the median by 10 percent, the former rose by only 28 percent for blacks and the latter by 18 percent. As a result, the ratio of mean income slipped from 0.54 in 1982 to 0.48 in 2006, while the ratio of median income rose from 0.56 to 0.60.¹³ The contrast in the time trends for the ratio of means and that of medians reflects the fact that a relatively small number of white households increased their incomes by a huge amount over these years – a result of rising income inequality among white households.

Between 1983 and 2001, average net worth (in constant dollars) climbed by 73 percent for whites but rose by only 31 percent for black households, so that the net worth ratio fell from 0.19 to 0.14. Most of the slippage occurred between 1998 and 2001, when white net worth surged by a spectacular 34 percent and black net worth advanced by only 5 percent. Indeed, mean net worth growth among black households was slightly higher in the years 1998-2001, at 1.55 percent per year, than in the preceding 15 years, at 1.47 percent per year. The difference in the 1998-2001 period was the huge increase in household wealth among white households. However, between 2001 and 2007, mean net worth among black households gained an astounding 58 percent while white wealth advanced only 29 percent, so that by 2007 the net worth ratio was back to 0.19, the same level as in 1983.

¹⁰ However, it does include miscellaneous assets like artwork, since this can be sold without significantly lowering a family’s standard of living. As a result, FR is not a 100 percent pure concept since it reflects a mixture of savings and consumption motives.

¹¹ The residual group, American Indians and Asians, is excluded here because of its small sample size.

¹² It should be stressed that the unit of observation is the household, which includes both families (two or more related individuals living together), as well as single adults. As is widely known, the share of female-headed households among African-Americans is much higher than that among whites. This difference partly accounts for the relatively lower income and wealth among African-American households.

¹³ The 1988 income figure for black households appears to be an outlier. The low income for blacks in that year probably reflects the small sample size for blacks (and Hispanics as well) and the survey-to-survey sample variability (see Tables 4 and 5 for sample sizes).

It is not clear how much of the sharp drop in the racial wealth gap between 1998 and 2001 and the turnaround between 2001 and 2007 was due to actual wealth changes in the African-American community and how much was due to sampling variability (since the sample sizes of African Americans were relatively small in all years, as shown in the last line of Table 4). However, one salient difference between the two groups was the much higher share of stocks in the white portfolio and the much higher share of homes in the portfolio of black households. In 2001, homes formed 46 percent of the total assets of black households, compared to 27 percent among whites, while (total) stocks were 25 percent of the total assets of whites and only 15 percent that of black households.¹⁴ Moreover, while the debt ratio was much higher for black than white households in 2001 (debt to asset ratios of 0.324 and 0.115, respectively), the ratio declined among black households to 0.297 in 2004 but then bounced back to 0.356 in 2007. For whites the debt to asset ratio first rose to 0.140 in 2004 but then fell slightly to 0.134 in 2007.

In the case of median wealth, the black-white ratio increased from 7 percent in 1983 to 10 percent in 2001 but then dipped to 6 percent in 2007, a little less than the ratio in 1983. In this case, median wealth among white households grew by 37 percent between 1983 and 2001 but more than doubled among black households. However, between 2001 and 2007, median net worth among black households actually crashed by 26 percent, reflecting in part the rising share of black households with zero or negative net worth.

Average financial resources, FR, also increased about the same for black and white households between 1983 and 2001, so that the ratio remained basically unchanged. Between 2001 and 2007, it increased somewhat faster for blacks so that the ratio increased to 0.14. The main reason was the larger share of home value in total assets for black households and the surge in home prices over these years. Median FR of black households also increased, from virtually zero in 1983 to a positive \$1,400 in 2001, and the corresponding ratio also grew, from zero to 3 percent. However, from 2001 to 2007, median FR among blacks toppled to only \$600 and the corresponding ratio fell to only 1 percent. The reason for the decline was the faster growth of debt among black middle class households than among whites, and this, in turn, was predominantly due to a run-up of mortgage debt.

The homeownership rate of black households grew from 44.3 to 47.4 percent between 1983 and 2001 but relative to white households, the homeownership ratio slipped slightly to 0.64 in 2001. From 2001 to 2007, the black homeownership rate went up a bit more to 48.6 percent, while the white homeownership rate moved up to 74.8 percent. As a result, the homeownership ratio increased to 0.65. The percentage of black households reporting zero or negative net worth fell from 34.1 percent in 1983 to 30.9 percent in 2001 (and also fell relative to the corresponding rate for white households). However, by 2007, the share was up to 33.4 percent (though a bit lower relative to whites). Wealth inequality was uniformly higher among black households than among whites. This difference largely reflects the higher share of black households with zero or negative wealth. While there was moderate increase in the Gini coefficient among the former, from 0.781 in 1983 to 0.818 in 2007, there was almost no net change among black households over this period.

The picture is somewhat different for Hispanics. The ratio of mean income between Hispanics and (non-Hispanic) whites in 2007 was 0.50, almost the same as that between blacks and whites. However, the ratio of median income was 0.70, much higher than the ratio between black and white households. The ratio of mean net worth was 0.26 compared to a ratio of 0.19 between blacks and whites and the ratio of mean FR was 0.19, compared to 0.14. However, the ratios of medians were 0.06 and 0.01,

¹⁴ Also, see Gittleman and Wolff (2004) for additional evidence from the PSID.

respectively, almost identical to those between blacks and whites. The Hispanic homeownership rate was 49 percent, almost identical to that of black households, and 34 percent of Hispanic households reported zero or negative wealth, almost the same as among African-Americans.

Progress among Hispanic households over the period from 1983 to 2007 was generally a positive story. Mean household income for Hispanics grew by 18 percent and median household income by 16 percent, so that the ratio of mean income slid from 60 to 50 percent while that of median income advanced from 66 to 70 percent. In fact, from 2004 to 2007 median income for Hispanics apparently surged by 23 percent while that for whites declined by 5 percent.

Between 1983 and 2001, mean wealth almost doubled for Hispanic households and mean FR grew almost four-fold. As a result, the ratio of mean net worth between Hispanic and white households advanced somewhat from 16 percent in 1983 to 17 percent in 2001, and the ratio of mean FR jumped from 7 to 14 percent. Another wealth surge occurred from 2001 to 2007 for Hispanics with mean NW almost doubling again and mean FR up by 60 percent and the corresponding ratios climbed to 26 and 19 percent, respectively, quite a bit higher than those between black and white households. The upturn in Hispanic wealth can be traced to a five percentage point jump in the Hispanic homeownership rate.

From 1983 to 2007, median wealth among Hispanics remained largely unchanged, as did median FR (at virtually zero!), so that the ratio of both median wealth and median FR between Hispanics and whites stayed virtually the same. In contrast, the homeownership rate among Hispanic households climbed from 32.6 to 49.2 percent and the ratio of homeownership rates between the two groups grew from 0.48 to 0.66.

The percentage of Hispanic households with zero or negative net worth fell rather steadily from 40.3 percent in 1983 to 33.5 percent in 2007, and the share relative to white household tumbled from a ratio of 3.55 to 2.30. Wealth inequality was also uniformly higher among Hispanic households than among both whites and blacks over these years. This difference once again largely reflects the higher share of Hispanic households with zero or negative wealth than white or black households. While there was moderate increase in the Gini coefficient among whites and no net change among blacks between 1983 and 2007, there was a substantial jump among Latinos over these years, from 0.791 to 0.880. The time trend among Latinos likely reflects the successive waves of new Latino immigrants arriving in the U.S. over these years with little or no net worth (see Love, et. al., 2017, for example).

Despite some progress from 2001 to 2007, the respective wealth gaps between African-Americans and Hispanics on the one hand and non-Hispanic whites on the other were still much greater than the corresponding income gaps in 2007. While mean income ratios were of the order of 50 percent, mean wealth ratios were of the order of 20 to 25 percent. Median FR among black and Hispanic households was still virtually zero in 2007 and the percent with zero or negative net worth was around a third, in contrast to 15 percent among white households (a difference that appeared to mirror the gap in poverty rates). While blacks and Hispanics were left out of the wealth surge of the years 1998 to 2001 because of relatively low stock ownership, they actually benefited from this (and the relatively high share of houses in their portfolio) in the 2001-2007 period. However, all three racial/ethnic groups saw an increase in their debt to asset ratio from 2001 to 2007.

4.2 Trends from 2007 to 2016

The racial/ethnic picture with regard to wealth changed radically by 2010. While the ratio of both mean and median income between black and white households changed very little between 2007 and 2010 (mean income, in particular, declined for both groups), the ratio of mean net worth dropped from 0.19 to 0.14 and that of mean FR from 0.14 to 0.10. The proximate causes were the higher leverage of

black households and their higher share of housing wealth in gross assets (see Table 2). In 2007, the ratio of debt to net worth among African-American households was an astounding 0.553, compared to 0.154 among whites, while housing as a share of gross assets was 54 percent for the former as against 31 percent for the latter. The ratio of mortgage debt to home value was also much higher for blacks, 0.49, than for whites, 0.32. The sharp drop in home prices from 2007 to 2010 thus led to a relatively steeper loss in home equity for black homeowners, 26 percent, than for white homeowners, 24 percent (see Tables 3 and 4), and this factor, in turn, led to a much steeper fall in mean net worth for black households than white households.¹⁵ In fact, the annual rate of return on the net worth of black families over years 2007 to 2010 was a staggering -9.9 percent, compared to -7.1 percent for white households (see Table 6). Moreover, the higher leverage of African-American households relative to white households and the broad decline in asset prices led to greater relative losses in mean FR for the former than the latter.¹⁶

The Gini coefficient for net worth shot up from 0.848 to 0.948 among black households, The rise was more moderate for white households, from 0.818 to 0.844. In the case of white households, the increase likely reflects both the rise in the share with non-positive net worth and the much steeper decline in median wealth than mean wealth. For the latter, the main reason appears to be the relatively steeper decline in median than mean wealth, since the share with non-positive wealth showed little change.

The Great Recession actually hit Hispanic households much harder than black households in terms of household wealth. Mean income among Hispanic households rose a bit from 2007 to 2010 and the ratio with respect to white households increased from 0.50 to 0.57. On the other hand, the median income of Hispanics fell, as did the ratio of median income between Hispanic and white households. However, the mean net worth in constant dollars of Hispanics fell almost in half, and the ratio of this to the mean net worth of white households plummeted from 0.26 to 0.15. The same factors were responsible as in the case of black households. In 2007, the debt-equity ratio for Hispanics was 0.51, compared to 0.15 among whites, while housing as a share of gross assets was 53 percent for the former as against 31 percent for the latter (see Table 5). The ratio of mortgage debt to home value was also higher for Hispanics, 0.452, than for whites, 0.324. As a result, net home equity dropped by 47 percent among Hispanic homeowners, compared to 24 percent among white homeowners, and this factor, in turn, was largely responsible for the huge decline in Hispanic net worth both in absolute and relative terms. Indeed, the annual rate of return on the net worth of Hispanic families over these years was an astonishing -10.8 percent, compared to -7.1 percent for white households. The high overall leverage among Hispanic households was also mainly responsible for the nearly 50 percent decline in their mean FR in real terms and the fall in the ratio of this to that of white households from 0.19 to 0.11.

There are two reasons that might explain the extreme drop in Hispanic net worth. First, a large proportion of Hispanic home owners bought their home in the interval from 2001 to 2007, when home prices were peaking. This is reflected in the sharp increase in their home ownership rate over this period. As a result, they suffered a disproportionately large percentage drop in their home equity. Second, it is likely that Hispanic home owners were more heavily concentrated than whites in parts of the country like Arizona, California, Florida, Arizona, and Nevada where home prices plummeted the most.

There was also a steep drop in the homeownership rate among Hispanic households of 1.9

¹⁵ Unfortunately, there are no data available to separate out actual declines in house prices for white, black, and Hispanic homeowners.

¹⁶ There was almost no change in the relative homeownership rates of the two groups – both experienced moderate losses – while the share of households with non-positive net worth actually increased more in relative terms for white households than black ones.

percentage points from 2007 to 2010. Indeed, after catching up to white households in this dimension from 1983 to 2007, Hispanic households fell back in 2010 to the same level as in 2004. These results accord with those of Wolff, Owens, and Burak (2011) showing that Hispanics had by far the highest percentage of homeowners who were delinquent in their mortgage payments in 2009 of any group.

The Gini coefficient for net worth climbed steeply from 0.880 to 0.960 among Latinos, as it did for blacks. The main reason appears to be the much steeper decline in median than mean wealth, since the share with non-positive wealth showed little movement.

Was there any relative improvement over the recovery period, 2010-2016? Black households continued to suffer moderate losses in both mean and median household income in absolute terms and relative to whites from 2010 to 2013. The mean net worth of black households also continued to fall, in this case by 9 percent, and the ratio of mean net worth between black and white households dipped further to 0.13 from 0.14. Their median net worth actually fell from \$6,700 to \$1,700, and the ratio relative to white households plunged from 0.06 to 0.01. Their mean FR increased slightly but the ratio relative to white households remained the same, while their median FR declined slightly and also relative to whites.

One of the most notable developments was a sharp fall in the black homeownership rate from 47.7 to 44.0 percent, which followed a more modest 0.9 percentage point decrease from 2007 to 2010, and a decline in the homeownership rate relative to white households from 0.64 in 2010 to 0.60 in 2013. Equally striking was the steep uptick in the share of black households with no net worth, from 33 percent in 2010 to 40 percent in 2013. Thus, by almost all indicators, the absolute and relative position of black households deteriorated even further from 2010 to 2013.

The absolute and relative decline in the net worth of black households over these years actually seems surprising in light of the fact that the annual yield on the portfolio of black households was 7.14 percent, compared to 6.12 percent for white households. The key is the sharp decline in their homeownership rate. Indeed, this led to a considerable loss in home equity in the black portfolio, which fell by 26 percent overall and 20 percent among black homeowners (see Table 4).

The Gini coefficient for net worth among black households continued its steep ascent between 2010 and 2013, from 0.948 to 1.010(!).¹⁷ There was basically no change for white households. In the case of black households, the increase likely reflects both the sharp rise in the share with non-positive net worth, from 32.9 to 40.0 percent, and the much more precipitous fall in median wealth than mean wealth.

Income developments were very similar for Hispanics but wealth developments were different. Mean incomes of Hispanics were down 15 percent from 2010 to 2013, and the ratio relative to white households plunged from 0.57 to 0.45. The story was similar for median income. On the other hand, the mean net worth of Hispanic households remained stable from 2010 to 2013, as did their position relative to white households, though their median wealth fell from \$2,900 to \$2,000. Their mean FR remained unchanged from 2010 to 2013, as did their relative position, and their median FR increased slightly.

However, like black families, their homeownership rate continued to fall, in this case from 47.3 percent to 43.9 percent (back to where it was in 1992), and their homeownership rate relative to white households also slipped from 0.63 to 0.60. The percent of Hispanics with non-positive wealth actually fell slightly from 2010 to 2013. Overall, Hispanic households had an average annual rate of return on their portfolio of 7.48 percent, compared to 7.14 percent for black households (see Table 6). The main difference with respect to black households was a much smaller decline in home equity – only 5 percent

¹⁷ The Gini coefficient is no longer bounded between zero and one if a variable can take on negative values.

overall – and an actual 1.6 percent increase among Hispanic homeowners alone.

The Gini coefficient for net worth among Hispanic households showed little change from 2010 to 2013, as it did for white households. This trend was partly a reflection of the fact that the share with non-positive net worth showed little change.

Things generally turned around for the two minority groups from 2013 to 2016. Incomes of black and Hispanic households recovered and by 2016 had either equaled or surpassed their 2007 peaks. Moreover, the ratio of mean income between blacks and white households jumped from 0.42 to 0.46 and that between Hispanic and white households from 0.45 to 0.48, while the ratio of median incomes between black and white households increased a bit from 0.56 to 0.58 and that between Hispanics and whites shot up from 0.59 to 0.65

The mean net worth of both groups showed a remarkable recovery. It grew by 45 percent among black households and 64 percent among Hispanic households, though the 2016 levels were still below their 2007 peaks. In contrast, the net worth of whites surpassed its 2007 peak. However, the wealth gap did attenuate somewhat during these years, with the racial wealth ratio increasing from 0.13 to 0.14 and the Hispanic-white ratio climbing from 0.15 to 0.19. Median net worth among the two minority groups showed some recovery also, though relative to white households the ratios remained close to zero. Mean FR of black households rose by 51 percent and mean FR of Hispanics by a huge 81 percent. In the case of black households, mean FR in 2016 slightly surpassed its previous peak in 2007 but in the case of Hispanics it was still below its previous peak. Mean FR for whites in 2016 was way above its 2007 peak. The ratio of mean FR between blacks and whites advanced slightly from 0.10 to 0.11 while that between Hispanics and whites climbed from 0.11 to 0.15. However, median FR of the two minority groups remained close to zero. The homeownership rate picked up somewhat for Hispanics, remained unchanged for black households, and fell for whites. As a result, the homeownership rate of black households relative to white households was up slightly and that of Hispanics relative to whites up more strongly, from 0.60 to 0.63. The percentage of households with non-positive wealth fell for all three groups, particularly among Hispanics. Partly as a result of this factor, the Gini coefficient for wealth fell sharply for both blacks (by 0.038 points) and Hispanics (by 0.022 points), though it was up slightly for whites.

5. Portfolio Composition and Decomposition Analysis

5.1 Changes in Portfolio Composition

There are striking differences in portfolio composition among the three groups. I first look at the year 2007 (see Table 2) Owner-occupied housing was the most important household asset in the average portfolio breakdown for all households in 2007, accounting for 32.8 percent of total assets. However, net home equity -- the value of the house minus any outstanding mortgage -- amounted to only 21.4 percent of total assets. Real estate, other than owner-occupied housing and business equity comprised another 31.3 percent. Demand deposits, time deposits, money market funds, CDs, and the cash surrender value of life insurance (collectively, “liquid assets”) made up 6.6 percent and pension accounts 12.1 percent. Bonds and other financial securities, corporate stock, mutual funds, and trust fund equity amounted to 15.5 percent. Debt as a proportion of net worth was 18.1 percent, and the debt-income ratio was 1.187. The ratio of home mortgage debt to home value amounted to 34.9 percent. Stocks directly or indirectly owned through mutual funds, trusts, IRAs, 401(k) plans, and other retirement accounts comprised 16.8 percent of all assets.

The breakdown of assets owned was not surprisingly very similar for white households as for all households. The debt to net worth ratio was slightly lower, at 0.154, as was the ratio of debt to income, at 1.090. Stocks directly or indirectly owned as a share of gross assets was slightly higher at 18.3 percent.

[Table 2 about here]

As noted above, black households invested a much higher share of their assets in their home, 54.0 percent. Liquid assets as a share of total assets was slightly higher and the share of pension accounts in total assets was about the same as overall. The proportion of assets invested in financial securities, corporate stock, mutual funds, and trust fund equity was correspondingly lower, at only 3.4 percent, as was the share invested in non-home real estate and business equity at 20.9 percent. Stocks directly or indirectly owned amounted to only 5.0 percent of total assets. African-American households as noted above, had much higher levels of relative indebtedness – a debt to net worth ratio of 0.553 and a debt-income ratio of 1.522. The ratio of home mortgage debt to home value was higher than overall, at 49.4 percent, at as a consequence net home equity amounted to only 27.3 percent of assets, only moderately greater than the overall ratio.

The Hispanic portfolio was similar to that of black households. Homes comprised 52.5 percent of their assets, roughly equal to that of black households, though the share in liquid and pension assets was smaller, at 3.9 and 7.7 percent respectively. However, the share invested in non-home real estate and business equity was 32.9 percent, close to the overall average. The ratio of home mortgage debt to home value was somewhat lower than that for black households, 45.2 percent, and as a result the ratio of net home equity to assets was a bit higher at 28.8 percent.

There were some significant changes in the composition of household wealth over years 1983 to 2016. Among white households, first, the share of housing wealth in total assets, declined from 35.6 percent in 1983 to 23.1 percent in 2016 (see Table 3).¹⁸ Second, net home equity also fell almost continuously from 27.0 percent of total assets in 1983 to 16.6 percent in 2016. Third, mortgage debt as a proportion of homeowner's property increased from 24.0 percent in 1983 to 39.5 percent in 2010 but then dropped to 32.6 percent in 2016.

[Table 3 about here]

A fourth change is that pension accounts rose from 3.9 to 17.2 percent of total assets from 1983 to 2013 but then dropped a bit to 15.7 percent in 2016. This increase largely offset the decline in the share of liquid assets in total assets, from 12.2 to 6.8 percent in 2016, so that it is reasonable to infer that to a large extent these households substituted tax-deferred pension accounts for taxable savings deposits. Fifth, non-home real estate and business equity fell from 36.5 percent of total assets in 1983 to 31.4 percent in 2016.

Sixth, financial securities, stocks, and trusts first rose from 9.6 percent of total assets in 1983 to a peak of 22.6 percent in 2001, fell to 18.6 percent in 2013, and then rebounded to 31.4 percent in 2016. Likewise, total stocks directly or indirectly owned climbed from 8.4 percent of assets in 1989 to 25.4 percent in 2001, ebbed to 18.2 percent in 2010 and then climbed back to 23.5 percent in 2016. The year to year trend in these two groups mainly reflected fluctuations in the stock market. The rise during the 1990s reflected the bull market in corporate equities as well as increased stock ownership, while the decline in the 2000s was a result of the sluggish stock market as well as a drop in stock ownership. The increase from 2010 to 2016 reflected the recovery of the stock market.

Seventh, the debt-net worth ratio first fell from 16.6 percent in 1983 to 13.0 percent in 2001, climbed to 18.0 percent in 2010, and then dropped to 12.2 percent in 2016. In contrast, the debt-income

¹⁸ It might seem surprising that despite the steep drop in home prices from 2007 to 2010, housing as a share of total assets actually fell by only 2.0 percentage points. The reason is that the prices of other components of wealth such as other real estate and stocks and mutual funds fell even more than housing. Likewise, despite the modest recovery in housing prices from 2010 to 2013, the share of housing in total assets dropped by 2.3 percentage points. Here, too the reason is that the value of other assets, particularly stocks, recovered even more.

ratio surged almost continuously over time from 66.9 percent in 1983 to 125.8 percent in 2010 but then declined to 90.7 percent in 2016. If mortgage debt on principal residence is excluded, then the ratio of other debt to total assets actually fell off over time from 5.7 percent in 1983 to 3.3 percent in 2016.

The large rise in *relative* indebtedness among white households between 2007 and 2010 could be due to a rise in the absolute level of debt and/or a fall off in net worth and income. As shown in Table 1, both mean net worth and mean income fell over the three years. There was actually a slight increase of debt in constant dollars, with mortgage debt rising by 3.0 percent, other debt by 3.6 percent, and total debt by 3.2 percent. Thus, the steep rise in the debt to equity and the debt to income ratio over the three years was entirely due to the reduction in wealth and income. In contrast, from 2010 to 2013, relative indebtedness declined. In this case, both net worth and incomes among white households showed a modest increase, so that the proximate cause was a sizeable reduction in household debt. In fact, average mortgage debt (in constant dollars) dropped by 13.7 percent, the average value of other debt by 9.2 percent, and average household debt by 12.6 percent. Once again, from 2013 to 2016, there was a steep reduction in relative indebtedness. However, in this case average debt in constant dollars remained relatively unchanged, so that the proximate cause was sharp increases in both average income and average wealth.

As noted above, the homeownership rate among white households first expanded from 65.1 percent in 1983 to 74.8 percent in 2007 but then remitted a bit to 73.1 percent in 2013 and even more to 71.9 percent in 2016. About 20 percent of white households owned some other form of real estate, and this fraction changed relatively little over time. Almost a third of white households owned a pension asset in 1983 and this ratio expanded to almost three fifths in 2016. In 1983, 15.1 percent of white households reported owning their own business but this fraction fell off 13.7 percent in 2016.

A quarter of white households held corporate stock, mutual funds, financial securities or a trust fund in 1983 and this share expanded to 38.1 percent in 2001 and then fell off to 28.9 percent in 2016. In 1983 37.5 percent of white households reported owning stock either directly or indirectly, and this proportion expanded to a peak of 57.5 percent in 2001, fell of somewhat to 53.9 percent in 2013, and then rebounded to 57.5 percent in 2016. If we exclude small holdings of stock, then the ownership rates dropped off sharply – in 2013, for example, from 53.9 percent to 44.2 percent for stocks worth \$5,000 or more and to 39.8 percent for stocks worth \$10,000 or more.

Among African-American households, first, the share of housing wealth in total assets bounced around a bit before reaching 54.0 percent in 2007 (see Table 4). It then fell sharply to 43.1 percent in 2016. Second, net home equity rose from 35.5 percent of total assets in 1983 to 39.9 percent in 1989, slid to 23.5 percent in 2001, rose again to 28.5 percent in 2010 and then declined again to 23.9 percent in 2016. Third, this pattern partially reflected the trend in mortgage debt as a proportion of homeowner's property, which rose from 23.5 percent in 1983 to 52.6 percent in 2013 before diminishing to 44.6 percent in 2016. This latter figure was considerably higher than for white households at 32.6 percent.

[Table 4 about here]

A fourth change is that as among white households pension accounts as a share of assets rose over time, from 3.0 percent in 1983 to 13.9 percent in 2016. Fifth, unlike white households, the share of liquid assets in total assets first increased, from 9.7 percent in 1983 to 13.5 percent in 2001 but then fell off, to 7.0 percent in 2016. Sixth, like white households, non-home real estate and business equity generally declined over time, from 36.8 percent of total assets in 1983 to 24.2 percent in 2016. Seventh, in similar fashion to white households, financial securities, stocks, and trusts first rose, from 1.0 percent of total assets in 1983 to 8.8 percent in 2001, fell off to 3.7 percent in 2013 but then rebounded to 10.1 percent in 2016. Likewise, stocks directly or indirectly owned jumped from 3.3 percent of assets in 1989

to 14.9 percent in 2001 but then diminished to 9.3 percent in 2016.

Eighth, unlike white households, the debt-net worth ratio first increased over time from 24.8 percent in 1983 to 60.9 percent in 2013 but then dropped sharply to 44.5 percent in 2016, while the debt-income ratio first climbed from 46.9 percent in 1983 to 152.2 percent in 2007 but then ebbed to 104.3 percent in 2016. Both components of debt rose in relative terms over years 1983 to 2013, the ratio of mortgage debt to total assets from 10.9 percent to 25.4 percent and the ratio of other debt to total assets from 9.0 percent to 12.4 percent but both dropped from 2013 to 2016, the former to 19.2 percent and the latter to 11.6 percent. Over the whole stretch from 1983 to 2016, the debt-net worth ratio among black households surged by a factor of 1.8 and the debt-income ratio by a factor of 2.2, whereas the former actually declined among white households, by 26 percent, and the latter was up by only 36 percent.

Between 2007 and 2010 there was a huge increase in the absolute level of debt, with mortgage debt rising by 23.6 percent, other debt by 102.6 percent, and total debt by 43.4 percent. These increases were much greater than among white households. From 2010 to 2013, while debt levels diminished among white households, mortgage debt among blacks rose by 11.8 percent in absolute terms, other debt remained unchanged, and total was up by 7.5 percent. Between 2013 and 2016, mean overall debt of African-Americans continued to increase, by 4.7 percent, while it rose by only 1.7 percent among whites.

As noted above, the homeownership rate among black households bounced around a bit from 49.4 percent in 1983 to 48.6 percent in 2007 and then dropped to 44.0 percent in 2016. Between 9 and 13 percent owned some other form of real estate, with little trend between 1983 and 2010 but this fraction declined sharply from 13.2 percent in 2010 to 10.7 percent in 2016. About a fifth of black households held a pension account in 1983, the share reached 38.9 percent in 2001 but then fell off to 34.0 percent in 2016. In comparison the share of white households with a pension asset increased sharply between 1983 and 2001, leveled off until 2013, and then climbed to 59.6 percent in 2016. About 5 to 6 percent of black households reported owning a business over the 33-year time period.

The share of black households with corporate stock, mutual funds, financial securities or a trust fund rose from 9.2 percent in 1983 to 16.2 percent in 2001 but, as with white households, the share then fell off, to 7.5 percent in 2016. Likewise the share of black households owning stock either directly or indirectly rose from 10.1 percent in 1983 to a peak of 34.2 percent in 2001 but then dropped to 29.7 percent in 2016. If small holdings of stock are excluded, then the ownership rates diminished – in 2013, for example, from 27.5 percent to 16.2 percent for stocks worth \$5,000 or more and to only 12.1 percent for stocks worth \$10,000 or more – but time trends are very similar.

Portfolio changes among Hispanic households generally paralleled those of black households (see Table 5). First, the share of housing wealth in total assets actually fell sharply from 66.2 percent in 1983 to 47.6 percent in 2001, then bounced back to 56.8 percent in 2010 but ebbed again to 44.2 percent in 2016. Second, net home equity declined rather continuously from 48.7 percent of total assets in 1983 to 24.9 percent in 2016. Third, this pattern generally reflected the trend in mortgage debt as a share of homeowner's property, which increased from 26.5 percent in 1983 to 55.4 percent in 2010 and then dropped to 43.7 percent in 2016. This latter figure was considerably higher than for white households at 32.6 percent but about the same as for black households.

[Table 5 about here]

A fourth change is that as among white households pension accounts as a share of assets rose over time, from 4.9 percent in 1983 to 12.3 percent in 2016. Fifth, unlike both white and black households, the share of liquid assets first fell from 8.4 percent in 1983 to 4.2 percent in 2013 but then rebounded to 8.1 percent in 2016. Sixth, in contrast to both white and black households, non-home real

estate and business equity fluctuated over time, rising from 19.9 percent of assets in 1983 to 32.9 percent in 2007 and then falling to 24.3 percent in 2016. 2013. Seventh, like both white and black households, securities, stocks, and trusts as a share of assets first rose, from almost nothing in 1983 to a high of 9.9 percent in 2001, tailed off to 5.1 percent in 2013, and then climbed to 9.6 percent in 2016. In similar fashion, stocks directly or indirectly owned mushroomed from 1.6 percent of assets in 1989 to 10.6 percent in 2001, ebbed to 7.0 percent in 2013, and then climbed back to 12.9 percent in 2016.

Eighth, in similar fashion to white households, the debt-net worth ratio increased from 40.4 percent in 1983 to 68.3 percent in 2001 but then fell off sharply to 39.1 percent in 2016, while the debt-income ratio, like that of black households, soared from 53.6 percent in 1983 to 187.9 percent in 2007 but then plunged to 113.7 percent in 2016. As for whites, the ratio of mortgage debt to assets among Hispanics rose over years 1983 to 2010, from 17.5 to 31.5 percent, but then fell off sharply to 19.3 percent in 2016, while the ratio of other debt to total assets dropped over time from 11.2 percent in 1983 to 8.8 percent in 2016. Over the whole stretch from 1983 to 2016, the debt-net worth ratio among Latino households was basically unchanged, compared to being up by a factor of 1.8 among black households, and the debt-income ratio rose by a factor of 2.1, compared to 2.2 among black households.

Between 2007 and 2010, as for black households, there was a surge in the absolute level of debt, with mortgage debt more than doubling, other debt up by 45.2 percent, and total debt by 93.0 percent. These changes were much greater than among white households. From 2010 to 2013, while debt levels diminished among white households and rose moderately among black households, average mortgage debt, other debt, and total debt were down by about 23 percent in absolute terms. From 2013 to 2016, average mortgage debt continued to fall, by 18 percent, but other debt was up by 27 percent. On net, average total debt dropped by 7.5 percent, while it rose slightly for black and white households.

As noted in Section 4, the Latino homeownership rate rose rather continuously from 42.8 percent in 1983 to 49.2 percent in 2007, fell off sharply to 43.9 percent in 2013 but then rebounded to 45.4 percent in 2016, though still well below its 2007 peak. The ownership rate for other real estate declined from 15.8 percent in 1983 to 7.7 percent in 2001, rebounded to 12.9 percent in 2007, but then ebbed to 8.8 percent in 2016. The proportion of Hispanic households with a pension account increased moderately from 28.3 percent in 1983 to a high point of 32.0 percent in 2007, fell somewhat to 25.6 percent in 2013, but then climbed back to 30.8 percent in 2016. From 4.0 to 7.5 percent were business owners over the 33-year time period, about the same as among black households.

The share of Latino households with corporate stock, mutual funds, financial securities or a trust fund rose from almost nothing in 1983 to 11.7 percent in 2001 but, as with white and black households, fell off sharply 4.7 percent in 2013 and then rebounded somewhat to 6.7 percent in 2016. In like fashion, the share with stock either directly or indirectly owned rose from 12.4 percent in 1983 to a high point of 28.0 percent in 2001, dropped off to 19.5 percent in 2013, but then rose back to 26.3 percent in 2016.

All in all, there was a sizeable sell-off of assets between 2007 and 2016 in the minority community. Among black households, the homeownership rate fell by 4.7 percentage points. Much of this reduction was due to forced sales of homes either through short sales and foreclosures. The ownership rate of other real estate fell by 1.5 percentage points, that of pension accounts by 2.6 percentage points, and that of securities, stocks, and trusts by 3.2 percentage points. In the Latino community the homeownership rate tumbled by 3.8 percentage points, the share of households holding other real estate by 4.1 percentage points, that of pension accounts by 1.2 percentage points, and that of securities, stocks, and trusts by 1.2 percentage points, but the share with stocks directly or indirectly owned was up by 3.9 percentage points.

5.2 Rates of Return

Table 6 shows average annual *real* rates of return for both gross assets and net worth by race and ethnicity over the period from 1983 to 2016. Results are based on the average portfolio composition over the period and assume that all households receive the same rate of return by period and asset type. It is first of interest to look at the results for all households (see Appendix Table 1 for the source data). The overall average annual rate of return on gross assets rose from 2.32 percent in the 1983-1989 period to 3.01 percent in the 1989-2001 period and then fell slightly to 3.10 percent in the 2001-2007 period before plummeting to -5.98 percent over the Great Recession (2007-2010). This was followed by a substantial recovery to 4.60 percent over years 2010 to 2013 and then to 5.42 percent over 2013-2016.

[Table 6 about here]

As shown in Appendix Table 1, the largest declines in asset prices over the years 2007 to 2010 occurred for residential real estate and the category businesses and non-home real estate. The value of financial assets, including stocks, bonds, and other financial securities, registered an annual nominal rate of return of “only” -1.33 percent because interest rates on corporate and foreign bonds continued to remain strong over these years. The value of pension accounts had a -0.20 percent annual nominal rate of return, reflecting the mixture of bonds and stocks held in pension accounts. From 2010 to 2013, all asset classes with the exception of liquid assets made a robust recovery. This was led by financial assets which recorded a 11.6 percent annual nominal return and businesses and non-home real estate, which experienced a 7.4 percent annual nominal rate of return. Returns on these assets, again with the exception of liquid assets, remained strong in 2013-2016.

The average annual *real* rate of return on net worth among all households also increased from 3.31 percent in the first period to 3.97 percent in the second and then to 4.04 percent in the third before falling off sharply to -6.81 percent in the 2007-2010 period. Once again, there was a strong recovery to 5.91 percent in the 2010-2013 period and 6.46 percent in 2013-2016. It is first of note that the annual returns on net worth were uniformly higher – by about one percentage point – than those of gross assets over the first three periods and the last two periods when asset prices were rising. However, in the 2007-2010 period, the opposite was the case, with the annual return on net worth about one percentage point lower than that on gross assets. These results illustrate the effect of leverage, raising the return when asset prices rise and lowering the return when asset prices fall. Over the full 1983-2016 period, the annual return on net worth was 0.84 percentage points higher than that on gross assets.

There are striking differences in rates of return by race and ethnicity. The highest returns on gross assets were registered by white households except for the 2001-2007 period. In the 1983-1989, 1989-2001, and again the 2010-2013 periods, returns for blacks and Hispanics were quite a bit lower than for whites and in a virtual tie between the two groups. In the 2001-2007 period, Hispanics registered the highest returns, followed by whites and blacks who in this case were in a virtual tie. In 2013-2016, whites had the highest return on gross assets but the differential between them and the two minorities was very small (because of a sharp rise in house prices). Years 2001 to 2007 saw negative rates of return for all three groups but they were highest (least negative) for whites, followed by blacks and then Hispanics. Over the full 1983-2016 period, the average annual return on gross assets for white households was 0.76 percentage points greater than that of black households and 0.72 percentage points greater than that of Hispanics. The differences reflected the greater share of high yield investment assets like stocks in the portfolios of whites and the greater share of housing in the portfolio of the two minorities.

This pattern is generally reversed when we look at returns on net worth. In this case, in the first three periods and the last two when asset prices were rising, higher returns were recorded by the two minority groups than whites but in the 2007-2010 period, when asset prices were declining, minorities registered lower (that is, more negative) rates of return than whites. The exception was the first period

when African-Americans had the lowest return, though Hispanics enjoyed a higher return than whites. The reasons were the substantial spread in returns on gross assets between whites and the two minority groups – over one percentage point – and the relatively low debt-net worth ratio of black households (24.8 percent), which mitigated the leverage effect.

Differences in returns between whites and minorities were quite substantial in some years. In the 2001-2007 period, the average return on net worth was 6.00 percent for blacks, 6.51 percent for Hispanics, and only 3.87 percent for whites – a difference of 2.13 percentage points between blacks and whites and of 2.64 percentage points between Hispanics and whites. The spread was less over years 2010 to 2013, only 0.98 and 1.20 percentage points, respectively, and over years 2013 to 2016, 2.21 and 2.01 percentage points, respectively. The smaller differences in 2010-2013 compared to 2001-2007 were due to the much higher returns on the gross assets of whites than of the two minority groups in the later period. However, in the 2013-2016 period, returns were only modestly higher for whites than either blacks or Latinos. On the other hand, over years 2007 to 2010, when asset prices declined, the return on net worth was -6.57 percent for whites, -9.76 percent for blacks, and -10.61 percent Hispanics – a differential of 3.18 percentage points in favor of whites relative to blacks and 4.04 percentage points of whites relative to Hispanics.

The spread in rates of return between white households on the one hand and minority households on the other reflects the much higher leverage of the minority groups. In 2007, for example, the debt-net worth ratio of black households was 0.553 and that of Hispanics was 0.511 while that of white households was only 0.181 (see Table 2).

The huge negative return on net worth of both blacks and Latinos was largely responsible for the precipitous drop in their mean net worth between 2007 and 2010, as we shall see below. This factor, in turn, was due to the steep drop in housing prices and their very high leverage. Likewise, the very high return on net worth of the two minorities over the 2001-2007 period played a large role in explaining the robust advance of their mean net worth, despite the sluggish growth in their income. This in turn, was a result of their high leverage coupled with the boom in housing prices. However, somewhat puzzling is the fact that the rate of return on net worth of the minority groups was very high over years 2010 to 2013 – in fact, the second highest of any period – and yet their wealth stagnated over these years. We shall return to this issue below with a more formal decomposition.

The substantial differential in returns on net worth between whites and the two minority groups (three to four percentage points lower) helps explain why the wealth differential rose sharply between 2007 and 2010 despite the fact that income differentials changed relatively little (actually, the ratio of mean income between Hispanics and whites actually rose over these years). Likewise the variation in rates of return over the 2001-2007 period (a spread of over 2 percentage points in favor of the minority groups) helps account for the relative gains in mean wealth among the two minority groups despite no change in the gap in mean incomes (though the ratio of median income between blacks and whites did advance from 0.57 to 0.60 and that between Hispanics and whites from 0.54 to 0.70). The higher rate of return of the two minorities relative to white households over years 2010 to 2013 also helps account for the relative constancy in the mean wealth gap despite the widening of the income differential. From 2013 to 2016, the racial and ethnic income gaps narrowed, as did the wealth gap, though particularly for Hispanics relative to whites. I return to these issues below.

5.3 Decomposition Analysis

What are the factors that affect both movements in mean wealth and those of wealth differences between groups? To analyze these trends, I conduct a decomposition analysis of wealth trends into a savings, capital gains, and net wealth transfer components. I begin with the basic wealth relationship as

established in Wolff (1999):

$$(1) \quad \Delta W_t \equiv W_t - W_{t-1} = r_t W_{t-1} + s_t Y_t + G_t.$$

where W_t = net worth (in constant dollars) at time t , r = real rate of return on wealth, Y^* = household income net of capital gains and property income (in constant dollars),¹⁹ s = savings rate out of gross income Y^* (not disposable income), and G = net inheritances and gifts (in constant dollars).

On the basis of Equation (1), the change in wealth over a period can be decomposed into capital revaluation (existing wealth multiplied by the rate of return), savings, and net intergenerational transfers. The analysis will be divided into six sub-periods: 1983-1989, 1989-2001, 2001-2007, 2007-2010, 2010-2013, and 2013-2016.

The same decomposition can be used for mean wealth by racial/ethnic group. For my inequality analysis, I will consider changes over time in the *ratio* of mean wealth between black and white households on the one hand and that between Hispanic and white households on the other. I can then also determine what portion of the change in this ratio is due to capital gains and what portion is due to savings and net wealth transfers. It should be noted that race/ethnicity remains constant over the lifetime for an individual but once again since this category is based on the household head, changes in marital status may affect the classification of a household over time.

There are several important methodological issues regarding the implementation of this model that should be addressed before the actual results are shown.

5.3.1 Aggregate wealth changes

Let us first consider changes in *aggregate* household wealth from time t to $t+1$. W_t is the total wealth held by households living in the U.S. at time t and W_{t+1} is the total wealth held by households living in the U.S. at time $t+1$. If this were a closed economy, then generally speaking the only sources of change, ΔW_t , would be from savings and capital appreciation. However, there may be some “leakages” and additions for a few reasons. First, a household could make a charitable contribution, which would subtract from current household wealth. Second, someone could die in this time interval and pay estate taxes or leave a charitable bequest. However, bequests from the decedent to a living individual would not change aggregate *household* wealth. Likewise gifts from one person to another would not alter aggregate household wealth.

Third, there may also be outflows if an American resident emigrates from the U.S. and takes wealth out of the U.S. over this interval. Fourth, there may be additions to the stock of household wealth if immigrants bring new wealth in. This issue may be particularly germane for Latino households during the 1980s when there was a large influx of Mexicans and Central Americans into the U.S. However, if these effects are small, then changes in aggregate wealth are due generally to only savings and capital gains on wealth at time t (see equation 1).²⁰

¹⁹ Though the standard SCF income measure includes realized capital gains, this component as well as property income, is excluded here since it is already partially captured in the term $r_t W_{t-1}$.

²⁰ Zucman (2013) presented convincing evidence that substantial wealth was transferred from domestic accounts to foreign ones over time (“offshoring”). In principle, offshoring should not present a problem for the SCF data since the SCF asks questions to domestic respondents about asset holdings in foreign accounts. This problem appears more germane to aggregate data like the Financial Accounts of the United States since these accounts are based on only domestically held assets.

The situation is different when one considers *mean household* wealth. In this case, the death of a person living alone will reduce the household count and, if the estate is fully given to other individuals, raise mean household wealth. (The death of a married spouse, on the other hand, will not affect the household count.) New households may also form over a time period. If a married couple gets divorced, the household count would increase by one. If two individuals living on their own get married, on the other hand, the household count would go down by one. Of course, if two individuals living with their parents wed, this will increase the household count by one. Likewise, a single leaving a parental home and setting up his or her own home will increase the household count.

Another source of change in mean wealth is that over time a given group of households gets older (“ages”) and, normally, their wealth rises. A comparison of mean wealth in the two years would thus reflect not only this aging process but the entry of new households into the population. Of course, new household entrants over a time period are likely to be relatively young, so that it is likely that the age distribution of households tends to remain relatively constant over time. However, if this is not the case, it is possible that the decomposition in equation (1) will be biased. Below I shall incorporate changes in the age distribution of households into the decomposition analysis.²¹

5.3.2. Gifts and inheritances

The SCF contains several questions on (*inter-vivos*) gifts and inheritances received as well as gifts given to others and donations made to non-profits and other charitable organizations. Questions on inheritances and gifts are asked in two different ways. First, there are several questions on what are called “general wealth transfers.” These questions presumably refer to any type of gift or inheritance. Second, there are specific questions on inheritances and gifts of real estate and businesses. These are asked in the sections of the questionnaire which deal specifically with the value of homes, other properties, and businesses. In principle, the questions on general wealth transfers should also capture the specific transfers indicated in the questions on real estate and businesses. Indeed, as one of the SCF experts indicated in an email, every effort was made during the editing of the SCF file to make sure that the answers to the general wealth transfer questions were consistent with the specific wealth transfer information. However, in my data analysis, I did find a few discrepancies between the two sets of questions.²² To be on the conservative side, I therefore included the value of the specific wealth transfers only in the case when no general wealth transfer was reported.

The recall or recollection method is likely to have under-reporting problems and estimates of inheritances reported below are very likely to be biased downward. However, it is difficult to ascertain whether there is a systematic bias in under-reporting by wealth class, by income class, or by demographic characteristics of the respondent.

Net wealth transfers are defined as gifts and inheritances received minus gifts and donations given. The data are available in the SCF from 1989 onward.²³ On the basis of these variables, one can

²¹ Another possible, more subtle, issue is that since households are classified according to the age of the household head, a death of the household head may change the age class of the surviving spouse over the period.

²² The discrepancy in the share of household reporting a wealth transfer ranged from 0.0 percentage points to 0.2 percentage points in the seven survey years, except for 1989, when the difference amounted to 0.4 percentage points.

²³ Inheritances and gifts are recorded in five-year intervals. In the 1989 SCF, for example, wealth transfers cover years 1985 through 1989. I use this information to estimate net wealth transfers received over the period from 1983 to 1989.

estimate *net* wealth transfers received by household by period .

5.3.4 Rates of return

The method used in the simulation assumes a single rate of return by asset type. Differences in rates of return by race/ethnicity are then based solely on differences in portfolio composition. However, it may also be the case that rates of return by asset type differ across these groups. If one group, say whites, receives higher returns on their stock holdings than, say blacks, and/or experience higher appreciation on their homes, then rates of return for whites will be biased downward and those for blacks will be biased upward. As a consequence, capital appreciation will be understated for whites and overstated for blacks and correspondingly savings will be overstated for whites and understated for blacks. I make this simplifying assumption in the absence of evidence to the contrary.²⁴

5.4 Decomposition results

Results shown in Table 7 indicate that capital revaluation generally explained the bulk of the change in overall mean net worth, NW, by race/ethnicity. Over the 1983-1989 period, the mean net worth of white households gained \$67,000 (in 2016 dollars). Capital appreciation on their wealth holdings in 1983 by itself would have led to a \$70,600 increase in their average wealth holdings, thus accounting for 105 percent of its actual change (Panel B). For blacks, the corresponding figure was 280 percent and for Hispanics 106 percent. Over 1989-2001, the figures were, respectively, 131 percent, 285 percent, and 139 percent. In the 2001-2007 period, while capital revaluation accounted for 133 percent of the net addition to the mean wealth of white households, it contributed only 75 percent to that of black households and 59 percent to Hispanics. From 2007 to 2010, average wealth among white households lost \$88,900 and capital losses by themselves would have caused their mean holdings to decline by \$135,100, more than fully accounting for the actual loss in mean wealth. In contrast, among blacks, capital losses accounted for 78 percent of the actual reduction in their mean holdings and among Hispanics, even less, at 57 percent. From 2010 to 2013, there was very little change of mean net worth for the three groups according to the SCF data, and capital gains and savings offset each other in the three cases. From 2013 to 2016, the mean NW of white households rose by \$199,500, with capital gains contributing 71 percent. Among black and Hispanic households, capital gains accounted for 65 percent and 44 percent, respectively.

[Table 7 about here]

Net wealth transfers were generally relatively small in dollar terms in each of the five periods for all three groups.²⁵ The residual is then computed as the change in net worth minus capital appreciation and minus net wealth transfers (see equation 1). The residual is presumably mainly savings. Its contribution to wealth growth was generally much lower than that of capital gains. In the first period, 1983-1989, it accounted for virtually none of the growth in mean wealth for whites and Hispanics and - \$1,100 out of the \$3,700 change for blacks. In the second period, 1989-2001, the residual made a negative

²⁴ See Wolff (2017, Chapter 3) for a discussion of the evidence that suggests very little systematic variation in rates of return by asset type across income and wealth classes.

²⁵ Generally speaking, for the population as a whole, total gifts given would equal total gifts received. However, there are two offsetting factors in the computation of net wealth transfers. First, since the simulations are performed over time, it is possible for an *inheritance* to be received over the period with no corresponding negative entry since the household is no longer in the population. Second, donations to charities and non-profits are subtracted in the calculation of net wealth transfers received. The net wealth transfer figures are adjusted so that the total *gifts* reported received in a given year for the full population are equal to the total *gifts* reported given (aligned to the greater of the two figures).

contribution for all three groups, which partially offset the positive contribution of capital appreciation. Over years 2001 to 2007 capital gains accounted for over 100 percent of wealth gains made by white households while savings made a negative 41.2 percent contribution. For blacks and Hispanics, in contrast, savings were positive, accounting for 38.4 percent and 39.1 percent of wealth gains over the period.

Mean wealth fell for all three groups during the next period, 2007 to 2010. For white households, the residual amounted to \$48,500 but capital losses were \$135,100, resulting in a \$88,900 net decline in mean wealth. Black households suffered a \$46,400 loss in mean wealth, with capital losses accounting for 77.7 percent of the decline and the residual for another 12.8 percent (net wealth transfers were negative and made a 9.5 percent contribution). Among Hispanics, mean wealth dropped by a staggering \$94,800, with 56.7 percent due to capital losses and 39.7 percent to the residual (presumably, mainly dissavings). For years 2010 to 2013, the change in mean wealth was quite small for all three groups (at least according to the SCF data). Capital gains made a positive contribution but this was largely offset by a negative residual. Wealth then rose for all three groups from 2013 to 2016. Among whites 70.7 percent of the gain was attributable to capital gains and 28.2 percent to the residual. Among blacks, the respective figures were 64.6 percent and 24.7 percent, while among Hispanics they were 44.4 percent and 53.3 percent.

5.4.1 Decomposing changes in wealth inequality

The next step is to decompose changes in wealth inequality over time into three components: capital revaluation, net wealth transfers, and a residual. As far as I can tell, there is no simple analytical decomposition of Equation 1 into these three components. As a result, the technique I use is to add the change in the between-group wealth ratio emanating from each component to the actual wealth ratio. The difference between the original wealth ratio and the newly re-computed simulated change is then the measure of the contribution of that component to the change in the net worth ratio. As might be apparent, the three components do not necessarily add up to the actual change in the wealth ratio over the period.

For the most part, as shown in Table 6, rates of return on net worth have been higher for minorities than whites. As a result, the effect of adding capital gains to initial wealth should have the effect of lowering wealth ratios between whites and the two minority groups. As shown in Table 8, the ratio of mean wealth between African-Americans and whites dropped modestly from 0.188 to 0.168, or by 0.021 between 1983 and 1989. Of the 0.021 decline in the ratio, 0.007 or 33 percent was due to the higher relative contribution of capital gains for white households, reflecting the relatively higher rate of return received by white households compared to black households (this period is a bit of an anomaly); 0.014 or 67 percent was attributable to the relatively higher net wealth transfers of white households (actually less negative net wealth transfers); and 0.003 or 13 percent was due to the relatively higher residual (presumably savings) of white households. From 1989 to 2001, the mean wealth ratio between blacks and whites fell again, from 0.168 to 0.142 or by 0.025. Of this decline, 129 percent could be attributed to the difference in net wealth transfers (positive for whites but negative for blacks) and 84 percent to the higher residual (savings) of whites, but this was offset somewhat by the slightly higher rate of return on the net worth of black households, which explained -35.2 percent. Between 2001 and 2007, the wealth ratio reversed course and increased from 0.142 to 0.188 or by 0.046. Of this, the higher residual of black households was the most important factor, accounting for 103 percent of the increase. The higher rate of return received by black households relative to white households (2.1 percentage point gap) explained another 43 percent of the increase, while the higher net wealth transfers among white households (again positive for whites but negative for blacks) offset the rise by 28 percent.

[Table 8 about here]

Over years 2007 to 2010 the ratio of mean wealth between whites and blacks reversed once again and collapsed from 0.188 to 0.144 or by 0.045. In this case, the rate of return was 3.18 percentage points higher (that is, less negative) for white households than black households and this factor accounted for 39

percent of the decline. However, though the gap in returns was quite high, the principal factor accounting for the large drop in the racial wealth gap was the discrepancy in the residual (savings), which explained 42 percent of the change (the remainder was due to the less negative net wealth transfers for whites compared to blacks). The racial wealth ratio continued to fall from 2010 to 2013 (by 0.015). In this case, the gap in the residual made the largest contribution, 113 percent. This was offset in part by the gap in rates of return in favor of black households, 29 percent. The higher net wealth transfers of white households (they were again positive for whites but negative for blacks) also added 44 percent to the rise in the net worth ratio. From 2013 to 2016 the racial wealth ratio increased a bit, by 0.016. In this case, differences in rates of return would have caused the ratio to rise by 0.009 but this was offset by the higher residual of white households, which would have caused a 0.034 drop in the ratio.

The pattern of results for Hispanics was different from that for blacks except for the 2001-2007 and 2007-2010 periods. Between 1983 and 1989, there was virtually no change in the Hispanic-white wealth gap (the black-white ratio fell by 11 percent). From 1989 to 2001, the wealth ratio increased by a very modest 0.007, with gaps in capital appreciation and savings making a positive contribution and differences in net wealth transfers (positive for white households but negative for Hispanics) offsetting these two effects. Wealth growth among Hispanic households was a stunning 82 percent from 2001 to 2007. Of the increase, capital gains made up 59 percent (because of the very high 6.51 percent per year rate of return) and the residual 39 percent (with 2.4 percent from net wealth transfers).

Hispanic mean wealth then collapsed by 48 percent from 2007 to 2010. Capital losses in this case accounted for the bulk of the drop (57 percent) and the residual for 40 percent (with the other 3.6 percent from negative net wealth transfers). The very large negative rate of return on the wealth holdings of Hispanics (-10.61 percent per year) was not enough to explain the full decline in their wealth. As a result, the residual was highly negative (it was moderately negative for black households). Over years 2010 to 2013, the mean wealth of Hispanic households remained largely unchanged, with positive capital gains and offsetting negative savings. Hispanic wealth then took off from 2013 to 2016, growing by 64 percent, with 44 percent due to capital gains and 53 percent to the residual.

The ratio of mean wealth between Hispanics and whites climbed by 0.089 from 2001 to 2007. The higher rate of return for Hispanic households (2.64 percentage point gap) explained a third of the increase, while the higher residual among Hispanic households accounted for the majority -- 84 percent (the sum is greater than one). Between 2007 and 2010 the mean worth ratio again reversed, as it did for black households, and collapsed by 0.107. In this case, the return was 4.04 percentage points less negative among whites and this factor explained 28 percent of the decline. However, once again, the primary factor was the difference in the residual (savings), which accounted for 58 percent of the change (with 3.4 percent due to differences in the net wealth transfers). The wealth ratio was basically unchanged from 2010 to 2013, with differences in capital appreciation making a positive contribution and being offset by differences in savings. However, from 2013 to 2016, the Hispanic-white wealth ratio climbed by 0.040. Both differences in capital gains and savings made positive contributions but the lion's share came from the residual (127 percent) and differences in capital gains contributing only 23 percent.

5.4.2 The Age Distribution and the Racial Wealth Gap

There was a dramatic aging of households over years 1983 to 2016 (see Table 9). Among white households, the share under age 45 fell from 49 to 33 percent while the proportion aged 55 and over increased from 36 to 50 percent.²⁶ Their mean age climbed from 47.4 to 53.6 and their median age from 45 to 55. Aging was a little less dramatic among black and Hispanic households. Among blacks, the share

²⁶ Households are classified into age group on the basis of the age of the household head.

under age 45 dropped from 53 to 41 percent while the proportion aged 55 and over rose from 31 to 38 percent; and their mean age went from 45.4 to 49.3 and their median age from 43 to 49. Among Hispanics, the proportion under age 45 fell from 62 to 51 percent while the share 55 and over picked up from 22 to 26 percent. Their mean age advanced from 41.8 to 45.8 and their median age from 39 to 44. The time trend in the age distribution of Hispanics living in the U.S. partly reflects trends in immigration. There was a large influx of young Mexicans and Central Americans into the U.S. during the 1980s and 1990s, and the proportion of Hispanic-Americans under the age of 45 increased from 62 percent in 1983 to 65 percent in 2001 while the share aged 55 and over fell from 22 to 16 percent. Immigration softened after 2001 and the share under age 45 fell off to 51 percent in 2016 and the percentage aged 55 and over advanced from 16 to 26 percent.

Differences in the age distribution are quite pronounced across the three groups. White households were the oldest, African-Americans were in the middle, and Hispanics were the youngest. In 2001, for example, the median age was 48 for white households, 43 for black households and 40 for Hispanics. The share of households under age 45 amounted to 65 percent for Hispanics, 53 percent for blacks and 41 percent for whites, while the proportion aged 55 and over was 38 percent for whites, 26 percent for blacks, and only 16 percent for Hispanics.

Differences in the age distribution explain part of the differential in mean wealth holdings between groups and time trends over time since older households hold more wealth, on average, than younger ones. Whereas there is a straightforward analytical decomposition of the *difference* in mean wealth between groups into an age effect and a wealth difference effect,²⁷ there is none available, as far as I can tell, for the *ratio* in mean wealth between groups. As a result, the analysis is conducted by standardizing the age distribution across groups and then re-computing the mean wealth for that group on the basis of the group's mean wealth by age group. Three choices are used to standardize the age distribution: (1) group 1's age distribution, (2) group 2's age distribution, and (3) the average age distribution of the two groups.

Results are shown in Table 10. Standardizing the ratio of mean wealth between African-Americans and whites by the age distribution of white households raises the mean wealth of the former since white households are, on average, older than black ones. The ratio increases by 0.031 in 1983 and 0.018 in 2016. It is interesting that there does not appear to be a clear relation between the degree to which the wealth ratio is increased by standardizing the age distribution and the difference in mean or median age between whites and blacks. On average, over the seven years, differences in the age distribution between black and white households (that is, the fact, that black household are on average

²⁷ The mean wealth of group i is given by

$$M_i = \sum_g \mu_{i1} a_{i1}$$

where M_i is the mean wealth of group 1, μ_{i1} is the mean wealth of age class i in group 1, a_{i1} is the percentage of households in group 1 in age class i , and g is the number of age classes. Then

$$M_1 - M_2 = \sum (\Delta\mu_i) a^*_i + \sum \mu^*_i \Delta a_i,$$

where a^*_i is the average share of households in the two groups in age class i , μ^*_i is the average wealth in the two groups in age class i , and Δ is the difference between the two groups.

younger than white households) accounted for 10.6 percent of the overall black-white wealth ratio. On net, the change in the mean wealth ratio between black and white households is augmented by age standardization. For the whole 1983-2016 period, while the actual wealth ratio fell by 0.044, the standardized ratio fell more, by 0.057.

Next, standardizing by the age distribution of black households lowers the wealth of white households and once again raises the wealth ratio between the two groups. On average, over the seven years, differences in the racial age distribution explained 11.1 percent of the overall black-white wealth ratio. The change in the wealth ratio is lowered in some periods – 1983-1989 and 2007-2013 – but raised in 1989-2001, 2001-2007, and 2013-2016. Over the whole period, the change in the mean wealth ratio based on the standardized age distribution is slightly lower than the change in the actual wealth ratio -- -0.042 versus -0.044. Finally, standardizing by the average age distribution of black and white households once again raises the wealth ratio in all years. On average, differences in age distribution by race explained 10.7 percent of the overall black-white wealth ratio. In this case, the standardized wealth ratio falls by 0.049 from 1983 to 2016, compared to its actual decline of 0.044.

Results are rather different for the ratio of mean wealth between Latinos and whites. However, once again, standardizing the wealth ratio by the age distribution of Hispanic households, that of white households, and the average age distribution raises the mean wealth ratio between the two groups in all years compared to the actual wealth ratio. In this case on average over the seven years differences in the age distribution between Latino and white households (that is, the fact that Latino households are on average younger than white households) has a much greater effect than standardizing the racial age distribution, accounting for about 40 percent of the overall Hispanic-white wealth ratio. Over the whole 1983-2016 period, standardizing by the age distribution of white households leads to a 0.083 jump in the overall Latino-white net worth ratio, compared to the actual increase of 0.027. Standardizing by the Latino age distribution results in a 0.053 rise and by the average age distribution a 0.070 increase. Between 2001 and 2007 age standardization leads to a much greater jump in the ethnic wealth ratio and from 2007 to 2013 a substantial plunge.

5.4.3 The Racial/Ethnic Composition and overall wealth trends.

How does the changing racial and ethnic composition of the U.S. population affect trends in household wealth? To answer this question, I standardize the racial/ethnic distribution for year 2001 (about the midpoint over the time series). I then reweight net worth in each year by the corresponding 2001 share of households in each group and re-compute mean and median net worth and the Gini coefficient. Results are shown in Table 11. Since the share of Hispanics rose sharply over the years 1983 to 2016, from 3.5 to 11.3 percent of all households, and the share of black households increased from 12.7 to 15.9 percent, reweighting decreases median and mean net worth in years before 2001 and increases them in years after 2001 since Hispanic and black households hold less wealth than whites. The reweighted results still indicate strong growth in both median and mean wealth from 1983 to 2007, a substantial collapse in median wealth from 2007 to 2016, and a positive but relatively slow increase in mean wealth over the later period.

However, the rate of change of both median and mean net worth (NW) is higher with standardization by race and ethnicity than in actuality. Standardized mean NW gained 140 percent between 1983 and 2016, compared to a 113 percent rise in actual mean NW, and standardized median NW showed a 22.4 percent gain, compared to a 2.9 percent fall in actual median NW. The reason is that a rising share of minorities in the total population lowers the growth in mean and median wealth, *ceteris paribus*, since these groups hold lower wealth than white households. If the racial/ethnic composition had remained constant over time, both mean and median NW would have grown faster than in actuality.

Standardizing the population weights on the basis of the 2001 racial and ethnic composition makes a very small difference in estimated Gini coefficients. Standardization gives greater weight to minority and hence poorer households before 2001 and lesser weight to white and hence richer households. The former effect seems to dominate for the Gini coefficient calculation in 1983 but the latter effect seems to dominate for 2001. After 2001, standardization gives greater weight to richer, white households and lower weight to minorities. In this case, the former effect appears to dominate in 2010, 2013 and 2016, lowering the Gini coefficient. Over the full 30-year period, the Gini coefficient standardized for changes in the racial/ethnic composition advances by 0.069, a bit less than the actual increase of 0.078.

6. Including retirement wealth in the household portfolio lowers the wealth gap.

In the last stage of the analysis I add in defined benefit (DB) pension wealth and Social Security wealth to the household portfolio. How does the inclusion of these two components affect the estimated racial/ethnic wealth gap and its trend over time? The SCF provides considerable detail on both pension plans and Social Security contributions. The SCF also gives detailed information on expected pension and Social Security benefits for both husband and wife.

The imputation of both defined benefit pension wealth (DBW) and Social Security wealth (SSW) involves a large number of steps. These are discussed in detail in Appendix 1. As with the concept of household net worth, there are alternative formulations of both DBW and SSW and none is necessarily the “correct” measure (see Wolff, 1992, for further discussion of this point). I have elected to use the standard gross measure, since it is the conventional formulation. Kennickell and Sunden (1999), for example, use *net* Social Security wealth, the difference between the gross value of expected Social Security benefits and the discounted value of future Social Security contributions. This formulation is also quite legitimate. The distributional effect of net SSW is likely to be smaller than that of gross SSW since its average value will be smaller. I prefer to use gross SSW since this is the standard concept and its use will make it easier to compare my results with those of the vast majority of other research on the topic.

It should also be noted that the definition of DBW and SSW is based on the conventional “on-going concern” treatment. It is assumed that employees continue to work at their place of employment until their expected date of retirement. An alternative is to use the accrual value in which DBW and SSW are valued as of the current year on the basis of work experience *up to that date only*. The accrual method will produce lower values of both DBW and SSW for current workers. The accrual method and the on-going concern treatment represent two extremes in the valuation of DBW and SSW. The latter treatment, in particular, relies on the assumptions that (1) the firm or organization remains in existence over time and (2) the employee continues working at the enterprise.

I define “non-pension wealth” NWX be as marketable household wealth (NW) minus defined contribution wealth (DCW):

$$(2) \quad NWX = NW - DCW.$$

Total pension wealth, PW, is given by:

$$(3) \quad PW = DCW + DBW.$$

Private augmented wealth PAW is then defined as:

$$(4) \quad PAW = NWX + PW.$$

The term “private augmented wealth” is used to distinguish contributions to wealth from private savings and employment contracts with both private and government employers from those of social

insurance provided by the state – notably, Social Security. Retirement wealth is defined as the sum of pension and Social Security wealth:

$$(5) \quad RW = PW + SSW$$

and augmented household wealth, AW, is given by

$$(6) \quad AW = NWX + PW + SSW.$$

6.1 Time trends for all households

I begin the empirical analysis by looking at pension wealth for *all* households. One of the most dramatic changes in the retirement income system over the last three decades or so has been the replacement of many traditional defined benefit (DB) pension plans with defined contribution (DC) pensions. The first focus of this part is to analyze the effects of the changeover in the pension system on the growth of pension wealth and time trends in the racial/ethnic wealth gap from 1989 to 2016.

Table 12 highlights trends in pension coverage over years. The picture that unfolds is a precipitous drop in DB coverage among all households largely compensated by a sizeable increase in DC coverage, at least until 2007. Moreover, while mean pension wealth gained rapidly in the 1990s, its growth among all households slowed down considerably in the years 2001 to 2007, showed an absolute decline over years 2007 to 2010 but a recovery in 2013 and again in 2016.

[Table 12 about here]

The share of all households with DC pension accounts more than doubled over the years 1989 to 2001, from 25.1 to 53.7 percent (see Panel A). The picture changed from 2001 to 2007 when there was virtually no change in the DC coverage rate. Trends are different for DB pension wealth. The share with a DB pension plan fell by 12 percentage points between 1989 and 2001 from 47.7 to 35.4 percent.²⁸ There was little change from 2001 to 2007. The share of all households covered by either a DC or a DB plan increased from 58.6 to 67.5 percent between 1989 and 2001. However, from 2001 to 2007, the share declined by 0.6 percentage points.

As shown in Table 13, there were huge increases in the average holdings of DCW (DC pension wealth), with the average value among all households increasing by a factor of 9.7 between 1989 and 2001, to \$72,800 (all dollar figures are in 2016 dollars, unless otherwise noted.) The rise in DCW slowed down from 2001 to 2007, with the mean increasing by (only) 22 percent. Opposite trends are again evident for DBW (DB pension wealth). The mean rose by only 2.6 percent between 1989 and 2001. The years 2001 to 2007 again saw a small rise, 5.5 percent. Did the spread of DC type pension plans adequately compensate for the decline in traditional DB pension coverage? Average pension wealth PW (the sum of DCW and DBW) climbed by 80 percent from 1989 to 2001.²⁹ The growth in PW slowed down markedly from 2001 to 2007, with mean PW up by 14.2 percent. Median PW among holders *only* did worse than mean PW from 1989 to 2001, rising 39 percent, but better than mean PW from 2001 to 2007, gaining 19 percent.

[Table 13 about here]

What happened over the Great Recession and its aftermath? From 2007 to 2010, the share of all households with a DC account fell off by 1.2 percentage points and then another 1.1 percentage points from 2010 to 2013 as firms discontinued 401(k) plans and the like, start-ups of IRA plans slackened, and, in some cases, workers closed down IRA accounts in response to the financial stress of the Great Recession (see Table 12). By 2013, the ownership share was down to 51.6 percent. However, there was a rebound of 3.0 percentage points from 2013 to 2016, and the share with DC accounts reached 54.7 percent, slightly below

²⁸ Figures on DB pension wealth and Social Security wealth cannot be estimated for households under age 47 in 1983 and, correspondingly, for all households as well. As a result, I show results for years 1989 to 2016 only.

²⁹ Median pension values among all households are strongly affected by the share of households with pension wealth and, as a result, are not shown here.

its peak value in 2007. The DB coverage rate also fell off, by 7.5 percentage points from 2007 to 2010, down to 28 percent in 2010 but it then recovered to 35 percent in 2016, about the same as in 2007. The share covered by either a DC or a DB plan also dropped, by 2.1 percentage points from 2007 to 2010, but then recovered to 67 percent in 2016, a little above its level in 2007.

Mean DCW, somewhat surprisingly, continued to expand over the Great Recession, by 6.5 percent, to \$94,700 in 2010. It then expanded by another 25.7 percent to \$119,100 in 2016. Mean DBW was down by 21.9 percent from 2007 to 2010, but then was up by 49.0 percent from 2010 to 2016 to \$82,700. As a result, mean PW first fell by 6.0 percent from 2007 to 2010 and then recovered by 34.3 percent, to \$201,800 in 2016.

Over the whole period, 1989 to 2016, mean PW advanced 160 percent (in real terms). This compares to a 102 percent gain in net worth. The growth in PW was led by DC wealth, which climbed almost ten-fold. DB wealth, on the other hand, rose by 26.3 percent. Median PW among holders of PW wealth only grew slower, 69 percent. It too showed robust gains from 1989 to 2007, a sharp drop from 2007 to 2010, and then a recovery from 2010 to 2016. In this case, the 2016 value was greater than the previous 2007 peak. Among all households, median PW was up much more, almost four-fold, reflecting in part advances in the share of households holding any pension wealth. Like median PW among holders only, median PW among all households showed a very strong gain from 1989 to 2007, a sizeable dip in 2010, and then a recovery in 2016. The 2016 value was also above the 2007 level.

Mean Social Security wealth (SSW) rose by 47.7 percent from 1989 to 2007, dipped by 8.1 percent over the Great Recession, and rebounded by 26.6 percent from 2010 to 2016. All told, it advanced by 72.0 percent from 1989 to 2016, about half as fast as mean PW. Median SSW grew a bit slower, 62.4 percent, from 1989 to 2016. Mean retirement wealth (RW) had a similar pattern. It increased robustly, by 69.5 percent, from 1989 to 2007, dropped 7.1 percent from 2007 to 2010, and then recovered by 30.2 percent from 2010 to 2016. Over the whole time span, it more than doubled. Median RW, on the other hand, saw only a 68.4 percent gain.

As shown in Table 14, mean NWX (net worth excluding DCW) among all households gained 58 percent over the whole time period from 1989 to 2016. With DCW now included, mean NW showed a higher advance, 86 percent, to \$667,900 in 2016. Mean PAW (net worth plus DBW) grew a bit more slowly, 77 percent, because of the relatively smaller gains in DB pension wealth. All told, mean AW (now including SSW) rose 76 percent over these years to \$973,400 in 2016. This increase was somewhat lower than that of net worth. For all four variables, there were robust gains from 1989 to 2007, a sharp fall off over the Great Recession from 2007 to 2010 (from 15 to 20 percent), and then a recovery from 2010 to 2016 (around 30 percent). All four variables showed a net increment from 2007 to 2016, though percentage gains were fairly low, varying from 3 to 20 percent.

[Table 14 about here]

Median values displayed quite a different pattern. Over the full time span, 1989 to 2016, median NWX collapsed by 38 percent. Even when DCW is now included, median NW still showed an absolute loss of 9.3 percent, down to \$78,100 in 2016. Median PAW also dropped by 9.9 percent. However, because median SSW was up, median AW showed a positive gain of 27.0 percent. For all four variables, the maximum value was reached in 2007. This was followed in all four cases by a sharp drop-off from 2007 to 2010, though it was less severe for median AW, -26.9 percent than for median NW, -43.9 percent. All four variables showed a recovery from 2010 to 2016, though as noted above they were still down from their 2007 peak. Median AW did better than median NW, down only 7.6 percent compared to a 34.2 percent plunge for median NW.

Table 15 shows changes in the portfolio composition of AW among all households over time. There was an almost steady rise in the share of DCW in AW, from 2.2 percent in 1989 to 12.2 percent in

2016. Conversely, the share of DBW in AW fell over these years, from 11.8 percent to 8.5 percent. Together, PW rose from 14.0 percent of AW to 20.7 percent. SSW, on the other hand, remained more or less constant as a share of AW – about 23 or 24 percent. Adding the two, we find that RW rose by 6.2 percentage points from 37.4 percent of AW in 1989 to 43.6 percent in 2016. Consequently, the share of NWX in AW fell by 6.2 percentage points, from 62.6 to 56.4 percent. Since DCW rose in relative terms over this period, NW increased as a share of AW – by 3.8 percentage points to 68.6 percent. PAW as a proportion of AW remained fairly constant as the relative rise in NW offset the relative decline in DBW.

[Table 15 about here]

The inequality picture, as shown in Table 16, is also quite remarkable. The Gini coefficient for pension wealth was pretty steady over time and almost exactly the same in 2016 as in 1989 (0.798). The Gini coefficient for SSW was much lower than that for PW and actually came down a bit over these years, to 0.354 in 2016. The inequality of RW is essentially a weighted average of that of PW and SSW.³⁰ In 2016, its Gini coefficient was 0.531. However, the inequality of RW rose over these years, by 0.046 Gini points, because of the relative increase in higher inequality PW than low inequality SSW (see Table 15 above). The inequality of NWX escalated over this period by 0.071 Gini points to 0.905. When DCW is added to the definition of net worth, the Gini coefficient for NW comes down by 0.028 Gini points to 0.877 since DCW tends to be more concentrated among the middle classes than NWX. Moreover, the upturn in NW inequality is moderated, rising by “only” 0.049 in 2016.

[Table 16 about here]

The further addition of DBW to create PAW further lowers the Gini coefficient, by 0.031 to 0.846 in 2016 since DB entitlements tend to be concentrated in the middle of the wealth distribution. However, the addition of DBW actually further intensifies the rise of inequality by 0.054 Gini points because of its gradual diminution since 1989. Adding SSW to PAW to create AW has an even bigger effect on lowering measured inequality – in this case by 0.135 points to 0.711. (In similar fashion, adding SSW to NWX lowers the Gini coefficient by 0.189 whereas adding PW to NWX reduces it by only 0.059). Thus the major equalizing effect of retirement wealth comes from SSW, not PW. Adding SSW to PAW lessens the rise of wealth inequality to 0.048 Gini points versus 0.054 for PAW. (Likewise, adding SSW to NWX decreases the rise in the Gini coefficient from 0.71 to 0.40, whereas adding PW to NWX lessens it to 0.054.)

6.2. Trends by race/ethnicity

It is at once evident that whites were much more likely to have a pension plan than minorities. In 2016, 71.8 percent of white households held some form of pension wealth (see Table 12). In contrast, 50.2 of African-American households and only 39.5 percent of Hispanic households held a pension. The difference in the overall pension wealth ownership rate was 21.6 percentage points between whites and blacks and 32.3 between whites and Latinos. The gap in the ownership of DC plans was 25.6 percentage points between whites and blacks and 28.7 between whites and Hispanics. The racial gap in entitlements to DB plans was much smaller, 11.0 percentage points, as was the ethnic gap, 18.7 percentage points.

The disparity in DC pension ownership widened considerably over time, as the take-up rate for DC plans grew much faster among white workers. DC ownership among whites expanded from 26.2 percent in 1989 to 59.6 percent in 2016, while among African-Americans it grew from 15.8 to 34.0 and among Latinos from 12.6 to 30.8 percent. The gap in participation in DC plans between whites and African-Americans thus rose from 10.5 to 25.6 percentage points and that between whites and Latinos from 13.6 to 28.8. In contrast, the racial and ethnic gap in participation in DB plans fell quite substantially over the years from 1989 to 2016, as participation in these plans plummeted among both white and black households. As a result, the racial and ethnic gap in the share of households with pension wealth (either DC or DB) was about the same in 2016 as in 1989.

³⁰ There is also an interaction terms in the decomposition of RW into a PW term and a SSW terms.

Minority households also had a lot less wealth accumulated in their pension plans than white households. In 2016 the average pension wealth of black households was only 30 percent that of whites. The biggest gap was in DC wealth – a 17 percent ratio. The ratio in DB wealth was 0.50. Hispanics were even worse off in terms of pension wealth, with a ratio of 0.22. The ratios in DCW was lower, 0.18, while the ratio in DBW was higher, 0.26. It is also of note that minority households were better off in terms of pension holdings than in net worth. The ratio in NW between black and white households was 0.14, and that between Hispanics and whites was 0.19.³¹

Over time, the racial and ethnic gap in pension wealth expanded. PW increased slower among blacks than whites and the ratio of mean PW between blacks and whites dropped from 45 percent in 1989 to 30 percent in 2016. There was little change in the ratio of DBW over these years but the ratio of DCW dropped from 0.22 to 0.27. The PW ratio between Hispanics and fell from 0.29 to 0.22. The DBW ratio declined from 0.30 to 0.27 and the DCW ratio from 0.23 to 0.18.

Minorities did quite a bit better in terms of Social Security wealth (SSW). Between 1989 and 2016, the ratio in mean SSW between blacks and whites advanced from 0.44 to 0.60 and the ratio of median SSW from 0.37 to 0.56. Over the same years, the ratio of mean SSW between Hispanics and whites grew from 48 to 0.60 and the ratio of median SSW from 0.48 to 0.63. Time trends in retirement wealth RW reflect trends in both PW and SSW. The ratio of mean RW between blacks and whites was about the same in 2016 as in 1989 because mean SSW grew faster for the former but mean pension wealth grew slower. However, the ratio of median RW advanced from 0.33 to 0.48. The story is very similar for Hispanics, with the ratio of mean RW between Hispanics and whites about the same in 2016 as in 1989 and the ratio of median RW advancing from 0.40 to 0.50.

Even larger differences exist for total wealth. The ratio of average total (augmented) wealth AW of whites to blacks was 3.75 and the ratio of median AW was slightly lower at 3.65 (see Table 14). The gap in mean AW was about half the gap in mean net worth – a ratio of 0.27 compared to 0.14 -- but larger than the gap in income, a ratio of 0.46. Results are similar for Hispanics. The ratio of mean AW between whites and Hispanics in 2016 was 3.58 and the ratio of median AW was almost identical. Once again, the disparity in mean AW was smaller than that of mean NW, with a ratio of 5.28 but larger than that of income, with a ratio of 2.04. The smaller gap in AW than NW is attributable mainly to the equalizing effect of Social Security.

The ratio in mean AW between blacks and whites first climbed from 0.27 in 1989 to 0.30 but then fell back to 0.27 2016 and the ratio of median AW went up even more from 0.24 to 0.34 over the first period but then retreated to 0.27 in 2016. Similar trends are evident for mean NWX, mean NW, and mean PAW. Results for Hispanics are similar. The ratio of mean AW between Hispanics and whites advanced from 0.25 in 1989 to 0.33 in 2016 and then fell off to 0.28 in 2016, though higher than in 1989, and that of median AW from 0.25 to 0.33 and then to 0.28 on 2016, also higher than in 1989. Mean NW converged between the two groups (the ratio rising from 0.16 in 1989 to 0.19 in 2016). While PW diverged between the two groups, SSW converged, largely explaining the overall trends in the AW ratio.

Table 15 compares the portfolio composition of AW between the two minority groups and white households. The most salient difference is the much higher share of SSW among the former. In 2016, the proportion of SSW in AW was 20.4 percent for white households, 45.9 percent for African-Americans,

³¹ As noted in Section 3, net worth NW includes DC wealth, so that the ratios of net worth excluding DCW, NWX, between minorities and whites were even lower.

and 43.7 percent for Hispanics. Black households also had a higher share of PW in their portfolio than whites – 23.3 versus 20.8 percent. The difference was due to the fact that the former had a greater share of DBW than the latter – 15.5 versus 8.3 percent. DCW made up a greater percentage of AW for whites – 12.5 versus 7.8. Consequentially, RW loomed larger for blacks than whites -- 69.2 percent as against 41.2 percent – and NWX greater for whites than blacks – 58.8 versus 30.8 percent. The differential in the share of SSW in AW between blacks and whites expanded over time from 14.4 percentage points in 1989 to 25.5 percentage points in 2016, while that of PW contracted from 9.7 to 2.5 percentage points and that of NWX from -24.0 to -28.0 percentage points.

In 2016, the share of SSW in AW was 43.7 percent for Hispanics – much higher than that for whites but slightly lower than that for blacks. On the other hand, Hispanics held a smaller portion of their wealth in PW, particularly DCW, compared to whites -- 16.2 and 20.8 percent, respectively. As a result, RW assumed a greater proportion of AW for Hispanics than whites -- 59.9 as against 41.2 percent – and NWX a smaller proportion – 40.1 and 58.8 percent, respectively. The percentage point gap in SSW widened over time from 20.9 to 23.3 between 1989 and 2016, that in PW fell from 2.3 to -4.6, and that in RW narrowed from 23.1 to 18.7.

Table 16 shows how the difference in portfolio composition plays out in inequality trends among the three groups. As noted in Section 4 above, inequality in net worth was considerably greater among the two minority groups than among whites – mainly a reflection of the higher share with zero or negative NW. In 2016, the Gini coefficient for NW among blacks was 0.972 and that among whites was 0.852 – a gap of 0.120. PW inequality was also higher among blacks – 0.832 and 0.765, respectively, a difference of 0.067. The inequality of SSW was about the same for the two groups – Gini coefficients of 0.350 and 0.332, respectively. However, since SSW inequality was much lower than PW inequality and SSW had a much greater weight in the portfolio of black households, the Gini coefficient for RW was lower among the latter – a difference of 0.035. NWX inequality was much higher among blacks than whites – a difference of 0.161 Gini points. Adding DCW to create NW lowered the differential to 0.120. The further addition of DBW to form PAW reduced the differential even more – to 0.071. Finally, including SSW to create AW decreased the gap to -0.098. That is to say, AW inequality was considerably smaller among blacks than whites – Gini coefficients of 0.601 and 0.699, respectively.

The pattern is similar for Hispanics. In 2016, the Gini coefficients for NW among Hispanics and whites were 0.945 and 0.852, respectively – a gap of 0.093. PW inequality was likewise greater among Hispanics – a difference of 0.114. The Gini coefficient for SSW was once again very similar for the two groups. Because SSW was much more important in the portfolio of Hispanics, the Gini coefficient for RW was much lower among Latinos – a differential of 0.077. Here too NWX inequality was much higher among Hispanics than whites – a difference of 0.097 Gini points. The differential in NW inequality was about the same, 0.093 Gini points, and that of PAW inequality only slightly lower, 0.084. Once again, adding SSW to form AW had a major effect, reducing the gap to -0.091. Here too AW inequality was much smaller among Latinos than whites – a Gini coefficient of 0.608 versus 0.699.

Thus, the principal finding is that while NW inequality is notably higher among minorities than whites, AW inequality is just the opposite. The primary reason is that minorities have a much bigger share of SSW in their portfolio, which reduces their AW inequality relative to whites. That is to say, SSW has much bigger impact on wealth inequality for minorities than whites because it is a larger share of AW. In 2016, adding SSW to PAW reduces the Gini coefficient by 0.291 for blacks and 0.297 for Latinos but only 0.122 for whites. Alternatively, adding SSW to NWX reduces the Gini coefficient by 0.473, 0.394, and 0.171, respectively.

Over time, the differential in SSW inequality between blacks and whites plunged from 0.169 Gini

points to 0.018. This was largely due to the sharp rise in the percentage of black households holding Social Security wealth. The difference in PW inequality fell slightly, by 0.015 Gini points, and together the gap in RW inequality declined by 0.183 points. By 2016, the Gini coefficient for RW was lower for blacks than whites. In contrast, the Gini coefficient for NWX in 2016 was much higher for blacks than whites but in this case the differential widened sharply over time, from 0.057 in 1989 to 0.161 in 2016. This trend reflected primarily the notable jump in the share of black households with zero or negative NWX. In like fashion, NW inequality was much greater for black households in 2016 and the gap rose from 0.086 to 0.120. However, the change in the racial differential was much smaller for NW than NWX (0.034 versus 0.105), indicating that the rise in DCW helped mitigate the racial gap in NW inequality. This is true despite the fact that mean DCW increased faster for whites than blacks (931 percent as against 663 percent). The difference in PAW inequality rose from 0.52 in 1989 to 0.071 in 2016. However, this increase (0.019 Gini points) was smaller than that of NW (0.034), indicating that increases in DBW lowered the racial difference in inequality. This was the case even though mean DBW grew at about the same rate for blacks and whites.

Finally, while AW inequality increased substantially for whites from 1989 to 2016 (by 0.067 Gini points), it fell substantially for blacks (0.046 Gini points). Indeed, in 1989, AW inequality was somewhat greater for black households than white ones (0.646 and 0.632, respectively) but this reversed by 2016 (0.601 versus 0.699). The gap in AW inequality plummeted from 0.015 to -0.098. These results illustrate the power of Social Security as a mechanism to level inequality. Whereas the racial differential in PAW inequality between blacks and whites increased by 0.019 Gini points from 1989 to 2016, that in AW inequality dropped by 0.113 Gini points. In similar fashion, the racial difference in NWX inequality climbed by 0.105 Gini points, while that in the inequality of NWX+SSW plunged by 0.114 Gini points.

It is also of note that between 1989 and 2007 there was a huge decline in the racial gap in SSW inequality of 0.158 points. This was followed by a slight uptick from 2007 to 2016, so that all of the diminution in the gap in SSW inequality occurred before 2007. A similar pattern is evident for the difference in PW inequality, though the drop from 1989 to 2007 was much smaller (0.028). In the case of the difference in RW inequality, most of the overall decline of 0.183 Gini points occurred before 2007 (0.146) but there was a continued reduction after 2007 as well (0.038), reflecting the continuing relative increase of SSW among black households relative to white households (the difference in the share of AW in SSW rose from 18.6 to 25.5 percent). From 1989 to 2007 there was also a decline in the racial differential in Gini coefficients for NW, so that all of the increase in the differential took place after 2007. The story is similar for PAW but different for AW. In the latter case, most of the decline in the racial differential in AW inequality took place before 2007 (0.092 out of 0.113 Gini points) but there was an additional drop of 0.021 points after 2007. Once again the result for 2007-2016 is a consequence of the relative rise in SSW among black households as compared to white households.

Results for the differential in inequality between Hispanics and white are similar to those for racial differences. From 1989 to 2016, the difference in SSW inequality between blacks and whites fell from 0.073 to -0.020 as share of Latino households with SSW rose. The differential in PW inequality fell slightly, by 0.011 Gini points, but the gap in RW inequality plunged by 0.134 points. Once again, the Gini coefficient for RW was lower for Hispanics than whites in 2016 though the opposite was the case in 1989. The Gini coefficient for NWX in 2016 was much higher for Latinos than whites, as was the case for blacks versus whites, though in this case the differential fell somewhat over time, from 0.118 in 1989 to 0.097 in 2016. Likewise, NW inequality was much higher for Latinos in 2016 but the difference reduced from 0.136 to 0.093. In 2016, the disparity in NW inequality was greater than that in NWX inequality but in 2016 it was slightly lower. These results indicate that the rise in DCW helped close the ethnic gap in NW inequality, despite the fact that mean DCW increased faster for whites than Hispanics (931 percent and 743 percent, respectively). The difference in PAW inequality declined from 0.112 in 1989 to 0.084 in

2016. This decrease (0.027 Gini points) was lower than that of NW (0.043). Adding DBW to NW thus lowered the ethnic difference in PAW inequality by 0.024 points in 1989 but by only 0.009 in 2016 – a result which reflects the fact that mean DBW showed stronger gains for whites than Latinos over these years.

Whereas AW inequality increased by 0.067 Gini points for whites over years 1989 to 2016, it fell by 0.015 for Hispanics. The gap in AW inequality between Latinos and whites went from -0.009 to -0.091. Once again SSW was the principal factor. While the differential in PAW inequality fell by 0.027 Gini points, that in AW inequality declined by 0.082 points. Likewise, whereas the difference in NWX inequality dipped by 0.021 Gini points, that in the inequality of NWX+SSW dropped by 0.076 Gini points.

The 2007-2016 period once again differed from 1989-2007. Between 1989 and 2007 there was a sizeable decline in the differential in SSW inequality of 0.113 points. Again this was followed by a slight rise from 2007 to 2016, so that all of the reduction in the gap in SSW inequality occurred before 2007. Almost all of the decrease in the differential in PW inequality also took place from 1989 to 2007, though the decline was much smaller than that in the SSW inequality differential. Once again, most of the decrease in the difference in RW inequality happened prior to 2007 but there was a continued decline after because of the continuing relative increase of SSW among Latinos (the share difference of SSW in AW increased from 15.2 to 23.3 percent). Over 1989 to 2007, the difference in Gini coefficients for NW between Latinos and whites fell but increased from 2007 to 2016. The same pattern holds for PAW but differs for AW. Of the 0.082 reduction in the differential in AW Gini coefficients from 1989 to 2016, 0.036 occurred from 1989 to 2007 and 0.046 from 2007 to 2016. Here too the 2007-2016 trend is attributable to the relative rise in SSW among Hispanic households.

7. Conclusion

In Wolff (2017, Chapter 3) I emphasize the role of differential leverage and the resulting differences in rates of return on net worth in explaining the wealth gap between the rich and the middle class. In this paper, these two factors play a particularly important role in accounting for the relative collapse of the wealth of minorities over the Great Recession. Capital revaluation also explained about three quarters of the advance of mean net worth among black households from 2001 to 2007 and 78 percent of the ensuing collapse from 2007 to 2010. Among Hispanics, the corresponding figures were 59 percent for the earlier period and 57 percent for the later one. Differentials in rates of return accounted for 43 percent of the 32 percentage point gain in the net worth of black households relative to whites over years 2001 to 2007 and 39 percent of the 24 percentage point decline in the wealth ratio over years 2007 to 2010. Disparities in returns played a somewhat smaller role in explaining changes in the ratio of mean wealth between Hispanics and whites. Over years 2001 to 2007, they accounted for 33 percent of the 52 percentage point relative gain in the mean net worth of Hispanics and over years 2007 to 2010 for 28 percent of the 41 percentage point collapse in the relative wealth of Hispanic households.

The racial disparity in wealth holdings, after fluctuating over the years from 1983 to 2007, was almost exactly the same in 2007 as in 1983. However, the Great Recession hit African-American households much harder than whites and the ratio of mean wealth between the two groups plunged from 0.19 in 2007 to 0.14 in 2010, reflecting a 33 percent decline (in real terms) in black wealth. The relative (and absolute) losses suffered by black households from 2007 to 2010 are ascribable to the fact that blacks had a higher share of homes in their portfolio than did whites and much higher leverage than whites (a debt to net worth ratio of 0.55 versus 0.15). These factors led to a wide discrepancy in rates of return on their respective portfolios (-9.92 versus -7.07 percent per year). From 2010 to 2013, the wealth ratio slipped 0.13, despite the fact that the rate of return on the portfolio of black families was greater than that of white families (7.14 versus 6.12 percent per year). The trend reflects the substantially higher

dissavings rate among black families than white families over these years. However, from 2013 to 2016 the wealth ratio rebounded slightly to 0.14, a reflection in part of the higher returns received by black households (8.53 versus 6.32 percent per year).

Hispanic households made sizeable gains on (non-Hispanic) white households from 1983 to 2007. The ratio of mean net worth grew from 0.16 to 0.26, the homeownership rate among Hispanic households climbed from 33 to 49 percent, and the ratio of homeownership rates with white households advanced from 48 to 66 percent. However, in a reversal of fortunes, Hispanic households got hammered in years 2007 to 2010, with their mean net worth plunging in half, the ratio of mean net worth with white households falling from 0.26 to 0.15, their homeownership rate down by 1.9 percentage points, and their net home equity plummeting by 47 percent. The relative (and absolute) losses suffered by Hispanic households over these three years were also mainly due to the much larger share of homes in their wealth portfolio and their much higher leverage (a debt-equity ratio of 0.51 versus 0.15). These factors led to a wide disparity in returns on their respective portfolios over years 2007 to 2010 (-10.76 versus -7.07 percent per year). Another likely factor is that a high percentage of Hispanics bought their homes close to the housing cycle peak. From 2010 to 2013, their relative net worth remained unchanged despite the fact that they had a higher rate of return on their wealth portfolio than did whites (7.48 versus 6.12 percent per year). This result reflects the fact that Hispanics had higher dissavings than did whites. However, from 2013 to 2016 the ratio rebounded strongly from 0.15 to 0.19. This change was due to both the higher returns received by Hispanics (8.33 versus 6.32 percent per year) and their relatively higher savings.

Part of the wealth gap between blacks and whites is due to the lower average age of black households, and standardizing black and white wealth by age distribution raises the wealth ratio between the two groups. On average, over the seven years, differences in the age distribution between black and white households (that is, the fact, that black households are on average younger than white households) accounted for about 10 to 11 percent of the overall black-white wealth ratio. However, time trends in the ratio generally show a somewhat greater decline when standardized by the age distribution than the actual ratios. On average over the seven years differences in the age distribution between Latino and white households (that is, the fact that Latino households are on average younger than white households) had a much greater effect than standardizing the racial age distribution, accounting for between 39 and 41 percent of the overall Hispanic-white wealth ratio. Over the whole 1983-2016 period, standardizing by age considerably raised the change in the Hispanic-white wealth ratio over the period.

One important factor affecting trends in *overall* wealth and wealth inequality was changes in the racial/ethnic make-up of the U.S. population. Both blacks and Hispanics grew as a share of the total population from 1983 to 2016. Since these two minority groups have smaller wealth holdings than whites, reweighting of wealth by the racial/ethnic distribution for year 2001 decreases computed overall net worth in years before 2001 and increases it in years after 2001. The rate of change of net worth is higher with standardization than in actuality. Standardized mean NW gained 140 percent between 1983 and 2016, compared to a 113 percent rise in actual mean NW, and standardized median NW showed a 22.4 percent gain, compared to a 2.9 percent fall in actual median NW. If the racial/ethnic composition had remained constant over time, both mean and median NW would have grown faster than in actuality.

When I next include defined benefit (DB) pension and Social Security wealth in the household portfolio, the picture of racial/ethnic wealth differences changes markedly. As noted in Section 6, there was a profound alteration of the private pension system among all households after 1989, with a dramatic rise in defined contribution (DC) pensions and a corresponding decline in DB pensions. The share of white households with DC pensions increased from 26.2 percent in 1989 to 59.6 percent in 2016, while the percentage with DB pensions went from 50.5 to 37.8. The proportion holding any pension wealth

went up from 61.5 to 71.8 percent. Among blacks, the share with DCW climbed from 15.8 to 34.0 percent, that with DBW fell off from 34.0 to 26.8, and the proportion holding any pension wealth rose from 39.8 to 50.2 percent. Correspondingly, Hispanics saw the proportion with DCW climbing from 12.6 to 30.8, that with DBW dropping from 24.6 to 19.0 percent, and that with any pension wealth ascending from 31.4 to 39.5 percent. The differential in holdings of DCW between whites and blacks escalated from 10.5 to 25.6 percent but that in entitlements to DBW went down from 16.5 to 11.0, so that overall there was no change in the difference in PW ownership between whites and blacks in 2016 as compared to 1989. Results are similar for the white-Hispanic difference in the share of households with pension wealth. The gap in DCW more than doubled between 1989 and 2016 from 13.6 to 28.7 percent, that in DBW declined from 26.0 to 18.7 percent, but overall the difference in the share with any kind of pension wealth was about the same in 2016 as in 1989.

All in all, there remained a big gap in RW and AW between minorities and whites. In 2016, the mean PW of non-Hispanic whites was 3.35 times as great as that of African-Americans. Mean DCW was six times as great but mean DBW was just twice as high. These differences reflect to a large extent disparities in pension ownership. The gap in Social Security wealth was much smaller – a ratio of 1.67. Overall the mean retirement wealth of the former was 2.23 times that of the latter. The ratio of median RW was slightly smaller, 2.10.

Over time, the black-white ratio of PW went more or less steadily downhill, from 0.45 in 1989 to 0.30 in 2016. In contrast, the ratio of mean SSW went fairly steadily uphill, from 0.44 to 0.60. As a result, the racial gap in mean retirement wealth first narrowed (the ratio went up from 0.44 in 1989 to 0.49 in 2007) and then widened (the ratio fell from 0.49 in 2007 to 0.45 in 2016), while the ratio of median RW went up from 0.33 in 1989 to 0.48 in 2016.

The gap in mean PW between whites and Hispanics was greater than that between whites and blacks in 2016, with a ratio of 4.60. The discrepancy in SSW between whites and Hispanics was of the same order as that between blacks and whites – a ratio of 1.67. The gap in mean RW between whites and Hispanics was slightly greater than that between whites and blacks while the gap in median RW was a bit smaller. Almost in parallel to the black-white discrepancies, the Hispanic-white differential in PW enlarged, that in SSW narrowed, the gap in mean RW first declined from 1989 to 2007 and then increased from 2007 to 2016, and that in median RW lessened over time.

The racial gap in augmented wealth was considerably smaller than that in net worth. In 2016, the ratio of mean NW between blacks and whites was 6.93 while that in mean AW was about half of that, 3.75. More dramatically, while the ratio of median NW in 2016 was 84.6, that of median AW was only 3.65. Over time, the ratio of mean NW between blacks and whites first went up from 0.17 in 1989 to 0.19 in 2007 and then reversed course to 0.14 in 2016, lower than in 1989. In the case of AW, the ratio also rose from 0.27 in 1989 to 0.30 in 2007 and then fell to 0.27 in 2016, the same as in 1989. SSW made the difference as can be seen by looking at the trend in the ratio of mean PAW between the two races, which fell from 0.22 in 1989 to 0.18 in 2016. Likewise, while the ratio of median NW remained a tad above zero over the whole time period, that of median AW rose from 0.24 in 1989 to 0.34 in 2007 and then came down to 0.27 in 2016, which was still above its 1989 level.

In similar fashion, the differential in AW between whites and Hispanics was lower than that of NW – a ratio of 3.58 in mean AW in 2016 compared to 5.28 in mean NW and a ratio of 3.56 in median AW in contrast to 72.0 in median NW. Similar to the racial wealth differences, the ratio of mean NW between blacks and whites first rose from 0.16 in 1989 to 0.26 in 2007 and then came down to 0.19 in 2016, though still higher than in 1989. Likewise, the ratio of mean AW also increased from 0.25 in 1989 to 0.33 in 2007 and then dropped to 0.28 in 2016, also higher than in 1989. Whereas the ratio of median

NW was slightly above zero over the whole period, that of median AW rose from 0.25 in 1989 to 0.32 in 2007 and then dipped to 0.28 in 2016, also above its 1989 level.

The portfolio composition of augmented wealth is much more heavily weighted toward SSW among minorities than among whites. In 2016, whereas SSW comprised 46 percent among blacks and 44 percent among Hispanics, it made up only 20 percent for whites. Correspondingly, NWX accounted for 59 percent for whites and just 31 and 40 percent for blacks and Latinos, respectively. DCW was also notably higher among white household than black or Hispanic households (12.5, 7.8, and 8.3 percent, respectively). While the share of SSW in AW remained more or less constant over time for whites and Hispanics, it rose from 37 percent in 1989 to 46 percent in 2016 among African-Americans. While the proportion of DCW in AW climbed for all groups, it advanced most strongly among whites.

In 2016, NW inequality was considerably higher for blacks than whites, by 0.120 Gini points, but AW inequality was considerably lower for the former, by 0.098 points. In like manner, NW inequality was much larger for Hispanics, by 0.093 points, but AW inequality much smaller, by 0.091 points. The main finding is that the equalizing power of SSW rose considerably over time.

While AW inequality increased by 0.067 Gini points for whites from 1989 to 2016, it fell by 0.046 Gini points for blacks. In 1989, AW inequality was somewhat greater for black households than white ones (0.646 versus 0.632) but by 2016 the reverse was true (0.601 versus 0.699) and the differential in AW inequality dropped from 0.015 to -0.098. SSW played the major role to level inequality. While the racial differential in PAW inequality between blacks and whites grew by 0.019 Gini points from 1989 to 2016, that in AW inequality fell off by 0.113 Gini points. Results are similar for Hispanics as for blacks. AW inequality fell by 0.015 points for Hispanics compared to a 0.067 Gini point increase for whites. The difference in AW inequality between Latinos and whites went from -0.009 to -0.091. Once again SSW was the principal factor as is evident by the fact that while the differential in PAW inequality declined by 0.027 Gini points, that in AW inequality declined even more, by 0.082 points.

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Appendix 1. Estimation of Retirement Wealth

This appendix provides methodological details on the construction of estimates for both Social Security wealth (SSW) and defined benefit pension wealth (DBW). The imputation of both defined benefit pension wealth (DBW) and Social Security wealth (SSW) involves a large number of steps, which is summarized below. It should be noted that the standard definition of DBW and SSW is based on the conventional "on-going concern" treatment. It is assumed in this that employees continue to work at their place of employment until their expected date of retirement.

A1.1 DB pension wealth

For retirees (r) the procedure is straightforward. Let PB be the pension benefit currently being received by the retiree. The SCF questionnaire indicates how many pension plans each spouse is involved in and what the expected (or current) pension benefit is. The SCF questionnaire also indicates whether the pension benefits remain fixed in nominal terms over time for a particular beneficiary or is indexed for inflation. In the case of the former, DB pension wealth is given by:

$$(A1.1a) \quad DBW_r = \int_0^{109-A} PB(1 - m_t)e^{-\delta t} dt$$

and in the latter case,

$$(A1.1b) \quad DBW_r = \int_0^{109-A} PB(1 - m_t)e^{-\delta^* t} dt$$

where A is the current age of the retiree; m_t is the mortality rate at time t conditional on age, gender, and race; δ^* is the real annual discount rate, set to 2 percent; γ is the inflation rate assumed to be 3 percent per year; $\delta = \delta^* + \gamma$ is the nominal annual discount rate, equal to 5 percent; and the integration runs from zero to the number of years when the retiree reaches an arbitrary age limit of 109.

Estimates of DB pension wealth (as well as Social Security wealth) are quite sensitive to the choice of inflation rate and discount rate. I choose a 3 percent inflation rate since it is very close to the actual average annual change of the CPI-U index from 1983 to 2013. Moreover, I choose a 5 percent nominal discount rate because it likewise is close to the actual average annual rate of return on liquid assets over the same period. These two choices lead to a 2 percent *real* discount rate (the difference between the two rates).

A higher real discount rate will lead to lower estimates of DB pension wealth (and likewise Social Security wealth), and, conversely, a lower discount rate will lead to higher estimates of these two variables.³²

Among current workers (w) the procedure is more complex. The SCF provides detailed information on pension coverage among current workers, including the type of plan, the expected benefit at retirement or the formula used to determine the benefit amount (for example, a fixed percentage of the average of the last five year's earnings), the expected retirement age when the benefits are effective, the likely retirement age of the worker, and vesting requirements. Information is provided not only for the current job (or jobs) of each spouse but for up to five past jobs as well. On the basis of the information provided in the SCF and on projected future earnings, future expected pension benefits (EPB_w) are then projected to the year of retirement or the first year of pension eligibility. Then the present value of pension wealth for current workers (w) is given by:

$$(A1.2) \quad DBW_w = \int_{LR}^{109-A} EPB(1 - m_t)e^{-\delta t} dt$$

where RA is the expected age of retirement and LR = A - RA is the number of years to retirement. The integration runs from the number of years to retirement, LR, to the number of years when the retiree reaches age 109.³³

A1.2 Social Security wealth

For current Social Security beneficiaries (r), the procedure is again straightforward. Let SSB be the Social Security benefit currently being received by the retiree. Again, the SCF provides information for both husband and wife. Since Social Security benefits are indexed for inflation, Social Security wealth is given by

$$(A1.3) \quad SSW_r = \int_0^{109-A} SSB(1 - m_t)e^{-\delta t} dt$$

where it is assumed that the current Social Security rules remain in effect indefinitely.³⁴

The imputation of Social Security wealth among current workers is based on the worker's actual and projected earnings history estimated by a standard human capital regression equation. The steps are briefly as follows, First, coverage is assigned based on whether the individual expects to receive Social

³² I also used a 3 percent real discount rate to estimate both DB pension and Social Security wealth. The general results contained in Section 6 above are not materially altered by the use of this higher discount rate (results not shown). Another crucial choice is the selection of which mortality rates to use in the calculation of DB and Social Security wealth. I have used here the standard ones from the *Statistical Abstract of the United States* based on age, gender and race. However, there are also available unofficial life expectancy estimates for individuals by age, gender, and income class (and even by educational attainment). As is well known, higher income (and more educated) individuals live longer on average than lower income (or less educated) ones. The use of mortality rates conditional on income will have the effect of increasing estimates of DB pension wealth and Social Security wealth of higher income individuals *relative to* lower income ones.

³³ The mortality rate m_t associated with the year of retirement is the probability of surviving from the current age to the age of retirement.

³⁴ Separate imputations are performed for husband and wife. According to current and past rules, a spouse – say, the wife – is entitled to the greater of her own SS benefit or 50 percent of her husband's SS benefit. An adjustment in the Social Security benefit is also made for the surviving spouse. According to current and past rules, a surviving spouse – say, the wife -- is entitled to the greater or her own SS benefit or her deceased husband's.

Security benefits and on whether the individual was salaried or self-employed. Second, on the basis of the person's earnings history,³⁵ the person's Average Indexed Monthly Earnings (AIME) is computed. Third, on the basis of the rules current at the time of the survey year, the person's Primary Insurance Amount (PIA) is derived from AIME. Then,

$$(A1.4) \quad SSW_w = \int_{LR}^{109-A} PIA(1 - m_t)e^{-\delta^*t} dt$$

As with pension wealth, the integration runs from the number of years to retirement, LR, to the number of years when the retiree reaches age 109.³⁶

³⁵ This is based on *retrospective* information on work history provided by the respondent. In particular, each individual is asked to provide data on the total number of years worked full-time since age 18, the number of years worked part-time since age 18, and the expected age of retirement (both from full-time and part-time work). On the basis of this information, it is possible to approximate the total number of full-time and part-time years worked over the individual's lifetime and use these figures in the calculation of the individual's AIME. It should be noted that though I can approximate the *number* of years of full-time and part-time work for a given worker, I can not determine when in his or her work history periods of non-employment occurred.

³⁶ As with pension wealth, the mortality rate m_t associated with the year of retirement is the probability of surviving from the current age to the age of retirement. Also, note that I use δ^* in the equation since Social Security benefits are indexed to the CPI.

	1983	1989	1992	1995	1998	2001	2004	2007	2010	2013	2016
<u>A. Mean Income</u>											
Whites	75.0	82.2	81.7	75.0	85.2	102.8	98.9	106.9	95.6	102.9	117.8
Blacks	40.4	36.6	40.9	36.2	41.9	49.8	48.4	51.6	45.6	42.8	53.9
Hispanics	45.4	37.5	38.6	48.6	45.8	51.0	48.8	53.7	54.0	46.1	57.0
Ratio:											
Blacks/Whites	0.54	0.45	0.50	0.48	0.49	0.48	0.49	0.48	0.48	0.42	0.46
Hispanics/Whites	0.60	0.46	0.47	0.65	0.54	0.50	0.49	0.50	0.57	0.45	0.48
<u>B. Median Income</u>											
Whites	52.8	54.7	50.3	50.4	54.5	59.6	61.0	57.9	56.1	55.6	60.0
Blacks	29.4	20.8	28.5	26.8	29.4	33.9	35.6	34.7	33.0	30.9	35.0
Hispanics	35.0	26.2	26.8	34.6	33.9	32.5	33.0	40.5	37.4	33.0	39.0
Ratio:											
Blacks/Whites	0.56	0.38	0.57	0.53	0.54	0.57	0.58	0.60	0.59	0.56	0.58
Hispanics/Whites	0.66	0.48	0.53	0.69	0.62	0.55	0.54	0.70	0.67	0.59	0.65
<u>C. Mean Net Worth</u>											
Whites	365.8	432.8	418.8	381.7	472.5	631.3	678.4	754.9	666.0	676.1	875.6
Blacks	68.8	72.5	77.8	64.2	85.8	89.9	128.9	142.0	95.6	87.0	126.3
Hispanics	59.5	71.2	93.1	80.8	116.6	108.6	145.4	197.2	102.4	101.2	165.8
Ratio:											
Blacks/Whites	0.19	0.17	0.19	0.17	0.18	0.14	0.19	0.19	0.14	0.13	0.14
Hispanics/Whites	0.16	0.16	0.22	0.21	0.25	0.17	0.21	0.26	0.15	0.15	0.19
<u>D. Median Net Worth</u>											
Whites	105.3	125.1	104.9	96.1	120.3	144.2	150.3	166.3	113.8	120.3	140.5
Blacks	7.0	3.2	17.7	11.6	14.7	14.4	15.0	10.7	6.9	1.7	3.4
Hispanics	4.1	2.6	6.3	7.9	4.4	4.0	7.0	10.5	3.0	2.0	6.3
Ratio:											
Blacks/Whites	0.07	0.03	0.17	0.12	0.12	0.10	0.10	0.06	0.06	0.01	0.02
Hispanics/Whites	0.04	0.02	0.06	0.08	0.04	0.03	0.05	0.06	0.03	0.02	0.04
<u>E. Mean Financial Resources</u>											
Whites	269.5	327.1	322.4	296.8	375.2	501.0	511.4	573.3	528.8	546.2	722.5
Blacks	34.7	35.5	44.3	33.4	55.4	58.6	78.2	81.8	52.2	55.0	82.8
Hispanics	17.6	34.8	59.8	46.1	74.2	69.8	85.1	111.5	58.8	59.9	108.4
Ratio:											

Blacks/Whites	0.13	0.11	0.14	0.11	0.15	0.12	0.15	0.14	0.10	0.10	0.11
Hispanics/Whites	0.07	0.11	0.19	0.16	0.20	0.14	0.17	0.19	0.11	0.11	0.15
F. Median Financial Resources											
Whites	29.3	39.6	32.2	28.4	55.4	57.1	45.8	50.5	36.7	42.0	47.5
Blacks	0.0	0.0	0.2	0.3	1.8	1.5	0.3	0.6	0.3	0.2	0.1
Hispanics	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.5	0.1	0.2	0.2
Ratio:											
Blacks/Whites	0.00	0.00	0.01	0.01	0.03	0.03	0.01	0.01	0.01	0.00	0.00
Hispanics/Whites	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00
F. Homeownership Rate (in Percent)											
Whites	68.1	69.3	69.0	69.4	71.8	74.1	75.8	74.8	74.6	73.1	71.9
Blacks	44.3	41.7	48.5	46.8	46.3	47.4	50.1	48.6	47.7	44.0	44.0
Hispanics	32.6	39.8	43.1	44.4	44.2	44.3	47.7	49.2	47.3	43.9	45.4
Ratio:											
Blacks/Whites	0.65	0.60	0.70	0.67	0.64	0.64	0.66	0.65	0.64	0.60	0.61
Hispanics/Whites	0.48	0.57	0.62	0.64	0.61	0.60	0.63	0.66	0.63	0.60	0.63
G. Percentage of Households with zero or negative net worth											
Whites	11.3	12.1	13.8	15.0	14.8	13.1	13.0	14.5	17.9	16.3	15.5
Blacks	34.1	40.7	31.5	31.3	27.4	30.9	29.4	33.4	32.9	40.0	37.0
Hispanics	40.3	39.9	41.2	38.3	36.2	35.3	31.3	33.5	34.6	33.9	32.8
Ratio:											
Blacks/Whites	3.01	3.38	2.28	2.09	1.85	2.35	2.27	2.30	1.84	2.46	2.38
Hispanics/Whites	3.55	3.31	2.98	2.56	2.45	2.69	2.41	2.30	1.93	2.09	2.11
H. Inequality of Net Worth (Gini coeff.)											
Whites	0.781	0.781	0.786	0.810	0.804	0.803	0.822	0.818	0.844	0.843	0.852
Blacks	0.851	0.868	0.826	0.832	0.825	0.855	0.913	0.848	0.948	1.010	0.972
Hispanics	0.791	0.917	0.894	0.845	0.903	0.894	0.907	0.880	0.960	0.967	0.945
Difference:											
Blacks-Whites	0.070	0.086	0.040	0.022	0.021	0.052	0.091	0.030	0.104	0.168	0.120
Hispanics-Whites	0.010	0.136	0.108	0.035	0.098	0.092	0.086	0.062	0.115	0.124	0.093

Source: author's computations from the 1983, 1989, 1992, 1995, 1998, 2001, 2004, 2007, 2010, 2013, and 2016 SCF.

Households are divided into four racial/ethnic groups: (i) non-Hispanic whites; (ii) non-Hispanic blacks; (iii) Hispanics; and (iv) American Indians, Asians, and others. For 1995, 1998, and 2001, the classification

scheme does not explicitly indicate non-Hispanic whites and non-Hispanic blacks for the first two categories so that some Hispanics may have classified themselves as either whites or blacks.

Table 2. Composition of Household Wealth by Race and Ethnicity, 2007

(Percent of gross assets)

Asset	Non-Hispanic		African-	Hispanic
	All	Whites	Americans	s
Principal residence	32.8	30.8	54.0	52.5
Liquid assets	6.6	6.6	7.6	3.9
Pension accounts	12.1	12.5	12.3	7.7
Corporate stock, financial securities, mutual funds, and personal trusts	15.5	17.1	3.4	2.5
Unincorporated business equity	31.3	31.3	20.9	32.9
other real estate				
Miscellaneous assets	1.7	1.7	1.8	0.4
	100.			
Total assets	0	100.0	100.0	100.0
<u>Memo (selected ratios in percent):</u>				
Debt / equity ratio	18.1	15.4	55.3	51.1
	118.			
Debt / income ratio	7	109.0	152.2	187.9
Net home equity / total assets	21.4	20.8	27.3	28.8
Principal residence debt / house value	34.9	32.4	49.4	45.2
All stocks / total assets	16.8	18.3	5.0	5.1
a. Ratio of gross value of principal residence less mortgage debt on principal residence to total assets				
b. Includes direct ownership of stock shares and indirect ownership through mutual funds, trusts, and IRAs, Keogh plans, 401(k) plans, and other retirement accounts				
c. Based on average portfolio composition and rates of return by asset type over the period.				

Table 3. The Evolution of the Composition of Household Wealth for Non-Hispanic Whites, 1983-2016

(Percent of gross assets)

Asset	1983	1989	2001	2007	2010	2013	2016
Principal residence	35.6	31.2	26.9	30.8	28.8	26.5	23.1
Liquid assets	12.2	11.8	9.0	6.6	7.9	7.8	6.8
Pension accounts	3.9	7.0	12.4	12.5	15.3	17.2	15.7
Corporate stock, financial securities, mutual funds, and personal trusts	9.6	13.1	22.6	17.1	16.2	18.6	21.8
Unincorporated business equity	36.5	33.4	27.2	31.3	30.0	28.4	31.4
other real estate							
Miscellaneous assets	2.4	3.5	1.9	1.7	1.7	1.5	1.3
Total assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Memo (selected ratios in percent):</u>							
Debt / net worth ratio	16.6	13.0	13.0	15.4	18.0	15.5	12.2
Debt / income ratio	66.9	64.0	79.6	109.0	125.8	102.1	90.7
Net home equity ^a / total assets	27.0	23.3	18.3	20.8	17.5	16.6	15.6
Principal residence debt/house value	24.0	25.4	32.2	32.4	39.5	37.3	32.6
All stocks / total assets ^b	--	8.4	25.4	18.3	18.2	22.0	23.5
<u>Ownership Rates (Percent)</u>							
Principal residence	65.1	70.5	74.1	74.8	74.6	73.1	71.9
Other real estate	19.4	22.8	19.3	21.0	21.2	20.7	20.3
Pension assets	32.1	43.4	56.9	57.4	57.3	56.0	59.6
Unincorporated business	15.1	13.7	14.0	13.7	14.3	12.1	13.7
Corporate stock, financial securities, mutual funds, and personal trusts	25.2	29.5	38.1	32.7	28.3	26.9	28.9
Stocks, directly or indirectly owned ^b	--	37.5	57.5	55.4	54.5	53.9	57.5
(1) \$5,000 or more	--	23.2	46.6	42.0	43.0	44.2	47.3
(2) \$10,000 or more	--	17.1	41.7	36.9	37.9	39.8	42.9
Sample Size	3468	2558	3580	3518	4759	4425	4480

a. Gross value of principal residence less mortgage debt on principal residence.

b. Includes direct ownership of stock shares and indirect ownership via mutual funds, trusts, IRAs, 401(k) plans, and other retirement accounts. This variable is not available for 1983.

Table 4. The Evolution of the Composition of Household Wealth for African Americans, 1983-2016

(Percent of gross assets)							
Asset	1983	1989	2001	2007	2010	2013	2016
Principal residence	46.4	53.8	46.3	54.0	52.5	48.3	43.1
Liquid assets	9.7	10.3	13.5	7.6	8.7	7.0	7.0
Pension accounts	3.0	6.5	12.4	12.3	12.3	14.0	13.9
Corporate stock, financial securities, mutual funds, and personal trusts	1.0	1.4	8.8	3.4	4.0	3.7	10.1
Unincorporated business equity other real estate	36.8	20.0	16.5	20.9	20.8	24.6	24.2
Miscellaneous assets	3.1	8.0	2.4	1.8	1.7	2.4	1.6
Total assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Memo (selected ratios in percent):</u>							
Debt / net worth ratio	24.8	29.8	48.0	55.3	59.4	60.9	44.5
Debt / income ratio	46.9	58.8	86.7	152.2	124.5	124.0	104.3
Net home equity ^a / total assets ^a	35.5	39.9	23.5	27.3	28.5	22.9	23.9
Principal residence debt/house value	23.5	25.9	49.3	49.4	45.8	52.6	44.6
All stocks / total assets ^b	--	3.3	14.9	5.0	8.9	8.1	9.3
<u>Ownership Rates (Percent)</u>							
Principal residence	49.4	42.4	47.4	48.6	47.7	44.0	44.0
Other real estate	11.4	11.0	8.9	12.2	13.2	8.8	10.7
Pension assets	20.7	17.1	38.9	36.6	32.4	33.9	34.0
Unincorporated business	5.7	4.8	3.0	5.4	5.1	5.6	6.0
Corporate stock, financial securities, mutual funds, and personal trusts	9.2	6.3	16.2	10.7	8.3	5.5	7.5
Stocks, directly or indirectly owned ^b	--	10.1	34.2	28.3	27.6	27.5	29.7
(1) \$5,000 or more	--	4.2	21.5	16.7	16.2	16.2	19.7
(2) \$10,000 or more	--	3.2	16.1	14.2	12.5	12.1	15.2
Sample Size	478	308	462	410	790	746	835

a. Gross value of principal residence less mortgage debt on principal residence.

b. Includes direct ownership of stock shares and indirect ownership via mutual funds, trusts, IRAs, 401(k) plans, and other retirement accounts. This variable is not available for 1983.

Table 5. The Evolution of the Composition of Household Wealth for Hispanics, 1983-2016

(Percent of gross assets)							
Asset	1983	1989	2001	2007	2010	2013	2016
Principal residence	66.2	56.9	47.6	52.5	56.8	54.0	44.2
Liquid assets	8.4	9.9	8.9	3.9	5.2	4.2	8.1
Pension accounts	4.9	6.3	9.3	7.7	11.0	8.0	12.3
Corporate stock, financial securities, mutual funds, and personal trusts	0.2	1.5	9.9	2.5	3.9	5.1	9.6
Unincorporated business equity	19.9	23.0	22.9	32.9	22.1	28.1	24.3
other real estate							
Miscellaneous assets	0.4	2.4	1.4	0.4	1.0	0.5	1.4
Total assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Memo (selected ratios in percent):</u>							
Debt / net worth ratio	40.4	50.8	40.3	51.1	68.3	56.6	39.1
Debt / income ratio	53.6	96.1	85.9	187.9	129.5	124.1	113.7
Net home equity ^a / total assets	48.7	33.2	25.4	28.8	25.3	26.0	24.9
Principal residence debt/house value	26.5	41.7	46.6	45.2	55.4	51.8	43.7
All stocks / total assets ^b	--	1.6	10.6	5.1	6.9	7.0	12.9
<u>Ownership Rates (Percent)</u>							
Principal residence	42.8	41.9	44.3	49.2	47.3	43.9	45.4
Other real estate	15.8	9.7	7.7	12.9	8.7	8.0	8.8
Pension assets	28.3	15.5	30.8	32.0	27.6	25.6	30.8
Unincorporated business	7.5	4.0	5.3	7.4	5.6	5.7	5.5
Corporate stock, financial securities, mutual funds, and personal trusts	1.4	5.0	11.7	7.9	5.0	4.7	6.7
Stocks, directly or indirectly owned ^b	--	12.4	28.0	22.4	22.1	19.5	26.3
(1) \$5,000 or more	--	3.0	15.0	13.5	11.1	11.7	17.1
(2) \$10,000 or more	--	2.2	13.0	10.6	9.4	9.6	13.1
Sample Size	111	161	279	313	639	556	612

a. Gross value of principal residence less mortgage debt on principal residence.

b. Includes direct ownership of stock shares and indirect ownership via mutual funds, trusts, IRAs, 401(k) plans, and other retirement accounts. This variable is not available for 1983.

Table 6. Average Annual Real Rates of Return by Race and Ethnicity, 1983 - 2016
(percentage)

	1983- 1989	1989- 2001	2001- 2007	2007- 2010	2010- 2013	2013- 2016	1983- 2016
<u>A. Gross Assets</u>							
1. All Households	2.32	3.01	3.10	-5.98	4.60	5.42	2.45
2. Non-Hispanic Whites	2.09	3.11	3.06	-5.88	4.68	5.43	2.15
3. African-Americans	1.04	2.30	3.05	-6.82	3.42	5.26	1.40
4. Hispanics	1.01	2.20	3.64	-7.30	3.53	5.33	1.43
<u>B. Net Worth</u>							
1. All Households	3.31	3.97	4.04	-6.81	5.91	6.46	3.28
2. Non-Hispanic Whites	2.94	3.91	3.87	-6.57	5.84	6.32	2.85
3. African-Americans	2.34	4.34	6.00	-9.76	6.82	8.53	3.11
4. Hispanics	3.17	4.57	6.51	-10.61	7.12	8.33	3.41
<u>Memo: difference between :</u>							
(a) Blacks and Whites	-0.61	0.43	2.13	-3.18	0.98	2.21	0.26
(b) Hispanics and Whites	0.22	0.66	2.64	-4.04	1.28	2.01	0.56

Source: author's computations from the 1983, 1989, 2001, 2007, 2010, 2013, and 2016 SCF.

Rates of return by asset type are provided in Appendix Table 1.

Calculations are based on household portfolios averaged over the period.

Miscellaneous assets are excluded from the calculation.

Table 7. Decomposition of the Change in Mean Net Worth by Component

Period	All	Non-Hispanic Whites	African-Americans	Hispanics
<u>A. Dollar Changes (in 1000s, 2016\$)</u>				
<u>1983-1989</u>	45.6	67.0	3.7	11.8
a. Capital appreciation	68.7	70.6	10.4	12.4
b. Net wealth transfers	-3.3	-3.2	-5.6	-1.0
c. Residual(savings)	-19.8	-0.4	-1.1	0.3
<u>1989-2001</u>	156.6	198.5	17.4	37.3
a. Capital appreciation	218.7	259.0	49.5	52.0
b. Net wealth transfers	1.6	5.8	-13.3	-10.2
c. Residual(savings)	-63.7	-66.3	-18.8	-4.5
-				
<u>2001-2007</u>	105.3	123.6	52.1	88.7
a. Capital appreciation	141.3	164.8	38.9	51.9
b. Net wealth transfers	6.7	9.8	-6.9	2.1
c. Residual(savings)	-42.7	-51.0	20.0	34.7
<u>2007-2010</u>	-99.6	-88.9	-46.4	-94.8
a. Capital appreciation	-114.7	-135.1	-36.0	-53.8
b. Net wealth transfers	-2.7	-2.3	-4.4	-3.4
c. Residual(savings)	17.8	48.5	-5.9	-37.7
<u>2010-2013</u>	3.1	10.1	-8.6	-1.2
a. Capital appreciation	101.1	127.5	21.7	24.4
b. Net wealth transfers	4.8	6.9	-3.4	-0.1
c. Residual(savings)	-102.7	-124.3	-26.9	-25.6
<u>2013-2016</u>	143.5	199.5	39.3	64.7
a. Capital appreciation	112.0	141.1	25.4	28.7
b. Net wealth transfers	2.4	2.2	4.2	1.5
c. Residual(savings)	29.1	56.2	9.7	34.5
<u>Panel B. Percentage Decomposition</u>				
<u>1983-1989</u>	107.3	100.0	100.0	100.0
a. Capital appreciation	150.7	105.4	280.4	105.7
b. Net wealth transfers	-7.3	-4.8	-151.7	-8.4
c. Residual(savings)	-43.4	-0.6	-28.7	2.7
-				
<u>1989-2001</u>	99.0	100.0	100.0	100.0
a. Capital appreciation	139.7	130.5	285.2	139.4
b. Net wealth transfers	1.0	2.9	-76.7	-27.4
c. Residual(savings)	-40.7	-33.4	-108.5	-11.9
-				
<u>2001-2007</u>	93.6	100.0	100.0	100.0
a. Capital appreciation	134.1	133.3	74.7	58.5
b. Net wealth transfers	6.4	7.9	-13.2	2.4
c. Residual(savings)	-40.5	-41.2	38.4	39.1

<u>2007-2010</u>	97.3	100.0	100.0	100.0
a. Capital appreciation	115.2	151.9	77.7	56.7
b. Net wealth transfers	2.7	2.6	9.5	3.6
c. Residual(savings)	-17.9	-54.5	12.8	39.7
<u>2010-2013</u>	-52.3	100.0	100.0	100.0
a. Capital appreciation	3212.2	1263.5	-251.8	-1953.5
b. Net wealth transfers	152.3	68.3	39.2	5.6
c. Residual(savings)	-3264.5	-1231.8	312.6	2047.9
<u>2013-2016</u>	98.3	100.0	100.0	100.0
a. Capital appreciation	78.1	70.7	64.6	44.4
b. Net wealth transfers	1.7	1.1	10.7	2.3
c. Residual(savings)	20.2	28.2	24.7	53.3

Source: author's computations from the 1983, 1989, 2001, 2007, 2010, 2013, and 2016 SCF.

Table 8. Decomposition of the Change in Mean Net Worth Ratios by Component

Ratios	Period					
	1983-1989	1989-2001	2001-2007	2007-2010	2010-2013	2013-2016
A. Ratio between African-Americans and Whites						
1. Change in the Actual Ratio	-0.021	-0.025	0.046	-0.045	-0.015	0.016
2. Add Capital Appreciation Only	-0.007	0.009	0.019	-0.017	0.004	0.009
3. Add Net Wealth Transfers Only	-0.014	-0.033	-0.013	-0.005	-0.006	0.001
4. Add Residual Only	-0.003	-0.021	0.047	-0.019	-0.017	-0.034
<u>Memo: Percentage Contribution to the Change in the Ratio</u>						
1. Change in the Actual Ratio	100.0	100.0	100.0	100.0	100.0	100.0
2. Add Capital Appreciation Only	32.6	-35.2	42.5	38.5	-28.6	56.8
3. Add Net Wealth Transfers Only	67.0	129.4	-28.2	11.9	43.6	3.5
4. Add Residual Only	13.1	83.8	102.9	42.1	112.7	-219.0
Sum of Components	112.6	178.0	117.2	92.4	127.6	-158.8
B. Ratio between Hispanics and Whites						
1. Change in the Actual Ratio	0.002	0.007	0.089	-0.107	-0.004	0.040
2. Add Capital Appreciation Only	0.002	0.014	0.030	-0.030	0.006	0.009
3. Add Net Wealth Transfers Only	-0.001	-0.026	0.001	-0.004	-0.002	0.002
4. Add Residual Only	0.001	0.018	0.075	-0.063	-0.012	0.050
<u>Memo: Percentage Contribution to the Change in the Ratio</u>						
1. Change in the Actual Ratio	100.0	100.0	100.0	100.0	100.0	100.0
2. Add Capital Appreciation Only	107.8	184.4	33.1	27.8	-144.8	23.3
3. Add Net Wealth Transfers Only	-62.7	-347.6	0.8	3.4	40.5	4.4
4. Add Residual Only	52.0	240.2	83.8	58.3	286.7	126.6
Sum of Components	97.0	77.0	117.7	89.5	182.4	154.3

Source: author's computations from the 1983, 1989, 2001, 2007, 2010, 2013, and 2016 SCF.

Note: Components 1,2, and 3 do not necessarily sum to one.

Table 9 Distribution of Households by Age Group and Race/Ethnicity, 1983 - 2016
(Percentage)

Age Group	1983	1989	2001	2007	2010	2013	2016
<u>White</u>							
Under 25	7.5	3.8	4.7	4.0	4.7	4.4	4.8
Ages 25 - 34	21.9	20.4	15.7	13.6	14.1	14.0	13.5
Ages 35 - 44	19.5	23.8	20.8	18.7	16.0	15.3	14.7
Ages 45 - 54	15.4	14.5	21.0	20.8	20.5	18.7	16.8
Ages 55 - 64	15.2	14.2	14.0	18.2	19.2	20.3	20.9
Ages 65 - 74	13.2	13.3	11.7	11.7	12.4	14.5	15.8
Ages 75 and over	7.3	10.2	12.2	13.0	13.1	12.7	13.5
Total	100.	100.	100.	100.	100.	100.	100.
	0	0	0	0	0	0	0
Mean Age	47.4	49.1	50.6	52.2	52.4	53.0	53.6
Median Age	45.0	46.0	48.0	51.0	52.0	53.0	55.0
<u>African-American Households</u>							
Under 25	9.2	8.5	7.0	8.4	6.2	6.0	4.5
Ages 25 - 34	25.4	19.3	19.2	21.0	17.2	17.4	17.5
Ages 35 - 44	18.1	18.8	26.8	20.6	20.2	19.5	18.5
Ages 45 - 54	16.6	16.7	20.6	19.4	22.7	21.6	21.4
Ages 55 - 64	14.9	17.2	10.6	17.8	16.2	17.3	17.5
Ages 65 - 74	8.7	12.8	10.2	8.1	10.9	10.7	12.4
Ages 75 and over	7.2	6.7	5.5	4.7	6.6	7.5	8.1
Total	100.	100.	100.	100.	100.	100.	100.
	0	0	0	0	0	0	0
Mean Age	45.4	47.7	45.5	45.7	48.1	48.8	49.3
Median Age	43.0	46.0	43.0	45.0	47.0	48.0	49.0
<u>Hispanic</u>							
Under 25	11.8	3.6	12.3	12.3	6.6	7.6	5.0
Ages 25 - 34	27.6	36.7	26.7	26.6	24.8	23.8	20.5
Ages 35 - 44	22.6	28.1	25.6	24.1	28.5	23.8	25.9
Ages 45 - 54	16.4	10.9	18.9	20.8	21.9	20.7	22.3
Ages 55 - 64	11.5	9.5	9.8	7.2	9.5	13.3	13.0
Ages 65 - 74	6.3	6.4	4.6	6.3	6.6	5.3	9.1
Ages 75 and over	3.8	4.8	2.0	2.7	2.1	5.4	4.2
Total	100.	100.	100.	100.	100.	100.	100.
	0	0	0	0	0	0	0
Mean Age	41.8	42.2	40.7	41.3	42.4	44.3	45.8
Median Age	39.0	37.0	40.0	40.0	40.0	42.0	44.0

Source: author's computations from the 1983, 1989, 2001, 2007, 2010, 2013, and 2016 SCF.

Note: Households are classified by the age of the head of household.

Table 10 Mean Net Worth Ratios by Race/Ethnicity Standardized by Age Distribution, 1983 - 2016

Ratios	1983	1989	2001	2007	2010	2013	2016
<u>A. Ratio between African-Americans and Whites</u>							
1. Actual Ratio	0.188	0.168	0.142	0.188	0.144	0.129	0.144
2. Ratio Standardized by age dist. of white households	0.219	0.178	0.152	0.191	0.174	0.144	0.162
3. Ratio standardized by age dist. dist. of black households	0.203	0.169	0.163	0.222	0.161	0.144	0.162
4. Ratio standardized by average age dist. of white and black households	0.211	0.173	0.157	0.205	0.168	0.144	0.162
<u>B. Ratio between Hispanics and Whites</u>							
1. Actual Ratio	0.163	0.165	0.172	0.261	0.154	0.150	0.189
2. Ratio Standardized by age dist. of white households	0.174	0.204	0.239	0.410	0.220	0.174	0.257
3. Ratio standardized by age dist. of Hispanic households	0.196	0.211	0.233	0.383	0.223	0.208	0.249
4. Ratio standardized by average age dist. of white and Hispanic households	0.184	0.207	0.236	0.399	0.221	0.188	0.254

Source: author's computations from the 1983, 1989, 2001, 2007, 2010, 2013, and 2016 SCF.

Note: Households are classified by the age of the head of household.

Table 11. Trends in Net Worth: Actual and Standardized by 2001 Socio-Demographic Characteristics

1983-2016

(In thousands, 2016 dollars)

Variable	1983	1989	2001	2007	2010	2013	2016	Percentage Change ^a		
								1983-2007	2007-2016	1983-2016
<u>A. Actual Net Worth</u>										
1. Median	80.4	86.1	99.6	118.6	66.5	65.8	78.1	47.5	-34.2	-2.9
2. Mean	313.0	358.6	515.2	620.5	521.0	524.1	667.6	98.2	7.6	113.3
3. Gini Coeff.	0.799	0.828	0.826	0.834	0.866	0.871	0.877	0.035	0.043	0.078
<u>B. Net worth standardized by 2001 racial/ethnic composition</u>										
1. Median	72.8	88.1	102.6	121.2	73.1	74.8	89.1	66.6	-26.5	22.4
2. Mean	298.6	356.4	530.8	627.4	543.5	550.8	716.4	110.1	14.2	139.9
3. Gini Coeff.	0.803	0.827	0.826	0.834	0.862	0.866	0.871	0.031	0.038	0.069

Source: author's computations from the 1983, 1989, 2001, 2007, 2010, 2013, and 2016 SCF.

a. Change for the Gini coefficient.

Table 12. Percentage of Households with Pension Wealth, 1989-2016

Category	1989	2001	2007	2010	2013	2016	Change			
							1989-2001	2001-2007	2007-2016	1989-2016
<u>A. All households</u>										
DC Wealth DCW	25.1	53.7	54.9	52.8	51.6	54.7	28.6	1.2	-0.2	29.5
DB Wealth DBW	47.7	35.4	35.4	27.9	35.2	34.8	-12.3	0.0	-0.6	-12.9
Pension Wealth PW	58.6	67.5	66.9	64.7	65.7	67.4	8.9	-0.6	0.6	8.9
<u>B. Non-Hispanic White</u>										
DC Wealth DCW	26.2	56.9	57.4	57.3	56.0	59.6	30.6	0.5	2.2	33.3
DB Wealth DBW	50.5	37.4	37.2	30.5	38.4	37.8	-13.1	-0.2	0.6	-12.8
Pension Wealth PW	61.5	70.5	69.2	69.0	70.1	71.8	9.0	-1.3	2.6	10.3
<u>C. African-American</u>										
DC Wealth DCW	15.8	38.9	36.6	32.4	33.9	34.0	23.2	-2.4	-2.6	18.2
DB Wealth DBW	34.0	27.7	29.1	22.5	27.9	26.8	-6.3	1.4	-2.3	-7.2
Pension Wealth PW	39.8	52.6	49.8	46.5	49.5	50.2	12.9	-2.8	0.4	10.4
<u>D. Hispanic</u>										
DC Wealth DCW	12.6	30.8	32.0	27.6	25.6	30.8	18.2	1.2	-1.2	18.2
DB Wealth DBW	24.6	21.1	16.6	10.2	16.3	19.0	-3.5	-4.5	2.4	-5.5
Pension Wealth PW	31.4	42.5	39.0	34.1	33.9	39.5	11.1	-3.5	0.5	8.1
<u>Racial/Ethnic Differences</u>										
<u>Whites minus Blacks</u>										
DC Wealth DCW	10.5	17.9	20.8	24.9	22.1	25.6				
DB Wealth DBW	16.5	9.7	8.1	8.0	10.5	11.0				
Pension Wealth PW	21.7	17.9	19.4	22.6	20.7	21.6				
<u>Whites minus Hispanics</u>										
DC Wealth DCW	13.6	26.1	25.4	29.6	30.4	28.7				
DB Wealth DBW	26.0	16.3	20.6	20.4	22.1	18.7				
Pension Wealth PW	30.1	28.0	30.2	34.9	36.2	32.3				
<p>Note: author's computations from the 1989, 2001, 2007, and 2016 SCF. Key: Pension Wealth PW = DCW + DBW</p>										

Table 13. Mean Retirement Wealth by Race/Ethnicity and Age Class, 1989-2016

(in thousands, 2016 dollars)

Category	1989	2001	2007	2016	Percentage Change			
					1989-2001	2001-2007	2007-2016	1989-2016
<u>A. All households</u>								
Pension Wealth PW	77.7	139.9	159.8	201.8	80.1	14.2	26.3	159.8
DB Wealth DBW	65.4	67.1	70.8	82.7	2.6	5.5	16.7	26.3
DC Wealth DCW	12.2	72.8	88.9	119.1	494.4	22.2	33.9	872.7
Memo: Median PW among PW Holders Only	65.8	91.3	108.3	111.5	38.7	18.6	3.0	69.4
Social Security Wealth SSW	129.6	189.1	191.4	222.9	46.0	1.2	16.4	72.0
Retirement Wealth RW	207.3	329.0	351.2	424.6	58.8	6.7	20.9	104.9
Memo: Median among all households								
Memo: Median PW	6.5	14.8	22.0	25.0	128.5	49.0	13.6	286.6
Memo: Median SSW	116.3	163.6	161.1	188.9	40.6	-1.5	17.2	62.4
Memo: Median RW	146.0	213.7	217.3	245.8	46.4	1.7	13.1	68.4
<u>B. Non-Hispanic White</u>								
Pension Wealth PW	89.7	164.4	189.7	255.3	83.4	15.4	34.6	184.8
DB Wealth DBW	74.7	75.7	80.7	101.4	1.4	6.6	25.7	35.9
DC Wealth DCW	14.9	88.7	109.0	153.9	494.2	22.9	41.2	931.1
Social Security Wealth SSW	147.3	211.2	211.4	250.8	43.4	0.1	18.6	70.3
Retirement Wealth RW	236.8	375.6	401.1	506.1	58.6	6.8	26.2	113.7
Memo: Median SSW	136.1	192.0	183.3	224.8	41.1	-4.5	22.6	65.2
Memo: Median RW	171.0	254.3	259.8	306.7	48.7	2.2	18.0	79.3
<u>C. African-American</u>								
Pension Wealth PW	40.8	61.4	76.9	76.3	50.7	25.2	-0.7	87.2
DB Wealth DBW	37.3	44.9	49.7	50.9	20.2	10.7	2.5	36.3
DC Wealth DCW	3.3	16.5	27.2	25.4	396.1	64.5	-6.5	662.6
Social Security Wealth SSW	64.4	110.8	121.4	150.6	72.1	9.6	24.1	133.9
Retirement Wealth RW	105.0	172.2	198.3	226.9	63.9	15.1	14.4	116.0
Memo: Median SSW	50.9	96.9	98.8	126.2	90.5	2.0	27.7	148.0
Memo: Median RW	56.9	111.1	115.9	146.1	95.4	4.3	26.1	157.0

D. Hispanic								
Pension Wealth PW	25.8	41.7	51.9	55.5	61.7	24.5	7.0	115.5
DB Wealth DBW	22.4	27.5	28.8	27.1	22.7	5.0	-6.1	20.9
DC Wealth DCW	3.4	14.2	23.1	28.5	321.0	62.3	23.4	743.4
Social Security Wealth SSW	70.0	112.2	123.5	149.9	60.2	10.2	21.3	114.0
Retirement Wealth RW	95.8	153.8	175.4	205.4	60.6	14.0	17.1	114.4
Memo: Median SSW	64.9	105.4	107.5	140.7	62.5	2.0	30.8	116.8
Memo: Median RW	67.7	118.4	115.5	151.9	74.9	-2.4	31.5	124.3
Ratios in Retirement Wealth by Component						Change		
1. All Households						1989-	2007-	1989-
Blacks/Whites						2007	2016	2016
Pension Wealth PW	0.45	0.37	0.41	0.30		-0.049	-0.106	-0.156
DB Wealth DBW	0.50	0.59	0.62	0.50		0.115	-0.114	0.002
DC Wealth DCW	0.22	0.19	0.25	0.17		0.026	-0.085	-0.058
Social Security Wealth SSW	0.44	0.52	0.57	0.60		0.137	0.026	0.163
Retirement Wealth RW	0.44	0.46	0.49	0.45		0.051	-0.046	0.005
Memo: Median SSW	0.37	0.50	0.54	0.56		0.165	0.022	0.188
Memo: Median RW	0.33	0.44	0.45	0.48		0.114	0.030	0.144
Hispanics/Whites								
Pension Wealth PW	0.29	0.25	0.27	0.22		-0.014	-0.056	-0.070
DB Wealth DBW	0.30	0.36	0.36	0.27		0.057	-0.090	-0.033
DC Wealth DCW	0.23	0.16	0.21	0.18		-0.014	-0.027	-0.041
Social Security Wealth SSW	0.48	0.53	0.58	0.60		0.109	0.013	0.122
Retirement Wealth RW	0.40	0.41	0.44	0.41		0.033	-0.032	0.001
Memo: Median SSW	0.48	0.55	0.59	0.63		0.110	0.039	0.149
Memo: Median RW	0.40	0.47	0.44	0.50		0.049	0.051	0.099
Note: author's computations from the 1989, 2001, 2007, and 2016 SCF. Key:								
Retirement Wealth RW = PW + SSW								

Table 14. Mean Augmented Wealth by Race/Ethnicity and Age Class, 1989-2016

(in thousands, 2016 dollars)

Category	1989	2001	2007	2016	Percentage Change			
					1989-2001	2001-2007	2007-2016	1989-2016
A. All households								
1. NWX	346.5	442.6	531.8	548.8	27.7	20.2	3.2	58.4
2. Net Worth NW	358.8	515.4	620.8	667.9	43.7	20.4	7.6	86.2
3. Private Augmented Wealth (PAW)	424.0	582.7	691.9	750.6	37.4	18.7	8.5	77.0
4. Augmented Wealth AW	553.6	771.8	883.3	973.4	39.4	14.4	10.2	75.8
Memo: Median for all households								
1. NWX	81.8	78.6	87.1	51.0	-3.9	10.7	-41.4	-37.7
2. Net Worth NW	86.1	99.7	118.7	78.1	15.8	19.1	-34.2	-9.3
3. Private Augmented Wealth (PAW)	132.1	137.0	165.3	119.0	3.7	20.7	-28.0	-9.9
4. Augmented Wealth AW	260.6	321.4	358.1	330.9	23.3	11.4	-7.6	27.0
B. Non-Hispanic White								
1. NWX	417.5	542.8	646.3	722.1	30.0	19.1	11.7	73.0
2. Net Worth NW	433.2	631.5	755.2	876.0	45.8	19.6	16.0	102.2
3. Private Augmented Wealth (PAW)	507.1	707.2	835.9	977.4	39.5	18.2	16.9	92.7
4. Augmented Wealth AW	654.4	918.4	1047.4	1228.2	40.3	14.0	17.3	87.7
Memo: Median								
1. NWX	121.8	116.5	123.5	90.6	-4.3	6.0	-26.6	-25.6
2. Net Worth NW	126.2	144.2	166.3	140.5	14.2	15.3	-15.5	11.3
3. Private Augmented Wealth (PAW)	187.1	194.7	227.3	200.5	4.1	16.7	-11.8	7.2
4. Augmented Wealth AW	331.2	410.1	428.5	441.8	23.8	4.5	3.1	33.4
C. African-American								
1. NWX	69.5	73.4	114.8	100.9	5.6	56.4	-12.1	45.2
2. Net Worth NW	72.6	89.9	142.0	126.3	23.8	57.9	-11.0	74.0
3. Private Augmented Wealth (PAW)	110.2	134.8	191.7	177.2	22.3	42.2	-7.5	60.8
4. Augmented Wealth AW	174.5	245.6	313.0	327.8	40.7	27.5	4.7	87.9
Memo: Median								
1. NWX	2.2	7.6	5.2	0.9	238.9	-31.6	-82.9	-60.4
2. Net Worth NW	3.3	14.4	10.7	1.7	343.5	-25.9	-84.5	-49.0

3. Private Augmented Wealth (PAW)	14.0	28.6	29.2	17.4	104.5	1.8	-40.4	24.1
4. Augmented Wealth AW	80.6	137.4	146.2	120.9	70.4	6.4	-17.3	49.9
<u>C. Hispanic</u>								
<u>1. All Households</u>								
1. NWX	65.7	94.4	174.2	137.4	43.6	84.6	-21.1	109.1
2. Net Worth NW	71.3	108.6	197.2	165.9	52.2	81.7	-15.9	132.6
3. Private Augmented Wealth (PAW)	91.5	136.0	226.1	192.9	48.7	66.2	-14.7	110.9
4. Augmented Wealth AW	161.5	248.2	349.6	342.8	53.7	40.9	-2.0	112.3
Memo: Median								
1. NWX	2.7	3.5	5.4	1.9	32.8	52.1	-64.5	-28.4
2. Net Worth NW	2.7	4.0	10.5	2.0	50.7	163.8	-81.5	-26.5
3. Private Augmented Wealth (PAW)	5.4	12.7	14.8	12.2	136.4	16.3	-17.9	125.7
4. Augmented Wealth AW	84.2	136.9	137.1	124.3	62.6	0.2	-9.4	47.6
						Change		
<u>Ratios in Mean Augmented Wealth by Component</u>						1989-	2007-	1989-
<u>Blacks/Whites</u>						2007	2016	2016
1. NWX	0.17	0.14	0.18	0.14		0.011	-0.038	-0.027
2. Net Worth NW	0.17	0.14	0.19	0.14		0.020	-0.044	-0.023
3. Private Augmented Wealth (PAW)	0.22	0.19	0.23	0.18		0.012	-0.048	-0.036
4. Augmented Wealth AW	0.27	0.27	0.30	0.27		0.032	-0.032	0.000
Memo: Median								
1. NWX	0.02	0.07	0.04	0.01		0.024	-0.032	-0.009
2. Net Worth NW	0.03	0.10	0.06	0.01		0.039	-0.053	-0.014
3. Private Augmented Wealth (PAW)	0.07	0.15	0.13	0.09		0.053	-0.042	0.012
4. Augmented Wealth AW	0.24	0.34	0.34	0.27		0.098	-0.068	0.030
<u>Hispanics/Whites</u>								
1. NWX	0.16	0.17	0.27	0.19		0.112	-0.079	0.033
2. Net Worth NW	0.16	0.17	0.26	0.19		0.097	-0.072	0.025
3. Private Augmented Wealth (PAW)	0.18	0.19	0.27	0.20		0.090	-0.073	0.017
4. Augmented Wealth AW	0.25	0.27	0.33	0.28		0.087	-0.055	0.032
Memo: Median								

1. NWX	0.02	0.03	0.04	0.02	0.022	-0.022	-0.001
2. Net Worth NW	0.02	0.03	0.06	0.01	0.042	-0.050	-0.007
3. Private Augmented Wealth (PAW)	0.03	0.07	0.07	0.06	0.036	-0.005	0.032
4. Augmented Wealth AW	0.25	0.33	0.32	0.28	0.066	-0.039	0.027

Note: author's computations from the 1989, 2001, 2007, and 2016 SCF.

Augmented Wealth AW = NWX + PW + SSW

Table 15. Portfolio Composition by Race/Ethnicity, 1989-2016

(Percentage of augmented wealth)

Category	1989	2001	2007	2016	Change			
					1989-2001	2001-2007	2007-2016	1989-2016
<u>A. All households</u>								
Pension Wealth PW	14.0	18.1	18.1	20.7	4.1	0.0	2.6	6.7
DB Wealth DBW	11.8	8.7	8.0	8.5	-3.1	-0.7	0.5	-3.3
DC Wealth DCW	2.2	9.4	10.1	12.2	7.2	0.6	2.2	10.0
Social Security Wealth SSW	23.4	24.5	21.7	22.9	1.1	-2.8	1.2	-0.5
Retirement Wealth RW	37.4	42.6	39.8	43.6	5.2	-2.9	3.9	6.2
NWX	62.6	57.3	60.2	56.4	-5.3	2.9	-3.8	-6.2
Net Worth NW	64.8	66.8	70.3	68.6	2.0	3.5	-1.7	3.8
Private Augmented Wealth (PAW)	76.6	75.5	78.3	77.1	-1.1	2.8	-1.2	0.5
<u>B. Non-Hispanic White</u>								
Pension Wealth PW	13.7	17.9	18.1	20.8	4.2	0.2	2.7	7.1
DB Wealth DBW	11.4	8.2	7.7	8.3	-3.2	-0.5	0.6	-3.1
DC Wealth DCW	2.3	9.7	10.4	12.5	7.4	0.7	2.1	10.2
Social Security Wealth SSW	22.5	23.0	20.2	20.4	0.5	-2.8	0.2	-2.1
Retirement Wealth RW	36.2	40.9	38.3	41.2	4.7	-2.6	2.9	5.0
NWX	63.8	59.1	61.7	58.8	-4.7	2.6	-2.9	-5.0
Net Worth NW	66.2	68.8	72.1	71.3	2.6	3.4	-0.8	5.1
Private Augmented Wealth (PAW)	77.5	77.0	79.8	79.6	-0.5	2.8	-0.2	2.1
<u>C. African-American</u>								
Pension Wealth PW	23.4	25.0	24.6	23.3	1.6	-0.5	-1.3	-0.1
DB Wealth DBW	21.4	18.3	15.9	15.5	-3.1	-2.4	-0.3	-5.9
DC Wealth DCW	1.9	6.7	8.7	7.8	4.8	2.0	-0.9	5.8
Social Security Wealth SSW	36.9	45.1	38.8	45.9	8.2	-6.3	7.2	9.0
Retirement Wealth RW	60.2	70.1	63.3	69.2	9.9	-6.8	5.9	9.0
NWX	39.8	29.9	36.7	30.8	-9.9	6.8	-5.9	-9.0
Net Worth NW	41.6	36.6	45.4	38.5	-5.0	8.7	-6.8	-3.1
Private Augmented Wealth (PAW)	63.2	54.9	61.2	54.1	-8.3	6.3	-7.2	-9.1

D. Hispanic									
Pension Wealth PW	16.0	16.8	14.8	16.2	0.8	-1.9	1.4	0.2	
DB Wealth DBW	13.9	11.1	8.2	7.9	-2.8	-2.8	-0.4	-6.0	
DC Wealth DCW	2.1	5.7	6.6	8.3	3.6	0.9	1.7	6.2	
Social Security Wealth SSW	43.4	45.2	35.3	43.7	1.8	-9.9	8.4	0.4	
Retirement Wealth RW	59.3	62.0	50.2	59.9	2.7	-11.8	9.7	0.6	
NWX	40.7	38.0	49.8	40.1	-2.7	11.8	-9.7	-0.6	
Net Worth NW	44.2	43.7	56.4	48.4	-0.4	12.7	-8.0	4.2	
Private Augmented Wealth (PAW)	56.7	54.8	64.7	56.3	-1.9	9.9	-8.4	-0.4	
							Change		
Differences in portfolio percentages between races							1989-	2007-	1989-
E. Blacks - Whites							2007	2016	2016
Pension Wealth PW	9.7	7.1	6.4	2.5		-3.2	-4.0	-7.2	
DB Wealth DBW	10.0	10.0	8.2	7.3		-1.8	-0.9	-2.7	
DC Wealth DCW	-0.4	-2.9	-1.7	-4.8		-1.3	-3.1	-4.4	
Social Security Wealth SSW	14.4	22.1	18.6	25.5		4.2	6.9	11.1	
Retirement Wealth RW	24.0	29.2	25.0	28.0		1.0	3.0	4.0	
NWX	-24.0	-29.2	-25.0	-28.0		-1.1	-3.0	-4.0	
Net Worth NW	-24.6	-32.1	-26.7	-32.8		-2.2	-6.0	-8.2	
Private Augmented Wealth (PAW)	-14.3	-22.1	-18.6	-25.5		-4.3	-6.9	-11.2	
F. Hispanics - Whites									
Pension Wealth PW	2.3	-1.1	-3.3	-4.6		-5.5	-1.3	-6.8	
DB Wealth DBW	2.5	2.8	0.5	-0.4		-1.9	-0.9	-2.8	
DC Wealth DCW	-0.2	-3.9	-3.8	-4.2		-3.6	-0.4	-4.0	
Social Security Wealth SSW	20.9	22.2	15.2	23.3		-5.7	8.1	2.4	
Retirement Wealth RW	23.1	21.1	11.9	18.7		-11.2	6.8	-4.4	
NWX	-23.1	-21.1	-11.9	-18.7		11.2	-6.8	4.4	
Net Worth NW	-22.0	-25.0	-15.7	-22.9		6.3	-7.2	-0.9	
Private Augmented Wealth (PAW)	-20.8	-22.2	-15.2	-23.3		5.7	-8.1	-2.5	
Note: author's computations from the 1989, 2001, 2007, and 2016 SCF. Key:									
Augmented Wealth AW = NWX + PW + SSW									

Table 16. Inequality of Augmented Wealth by Race/Ethnicity, 1989-2016

(Gini coefficients)	Gini coeff. Change							
	1989	2001	2007	2016	1989- 2001	2001- 2007	2007- 2016	1989- 2016
Category								
<u>A. All Households</u>								
Pension Wealth PW	0.799	0.788	0.783	0.798	-0.011	-0.005	0.015	-0.002
Social Security Wealth SSW	0.370	0.344	0.363	0.354	-0.026	0.019	-0.009	-0.015
Retirement Wealth RW	0.485	0.493	0.514	0.531	0.009	0.021	0.017	0.046
NWX	0.835	0.845	0.857	0.905	0.011	0.011	0.049	0.071
Net Worth NW	0.828	0.826	0.834	0.877	-0.002	0.008	0.043	0.049
PAW	0.793	0.796	0.805	0.846	0.003	0.009	0.042	0.054
NWX + SSW	0.676	0.665	0.693	0.716	-0.011	0.028	0.023	0.040
Augmented Wealth AW	0.663	0.661	0.684	0.711	-0.002	0.023	0.027	0.048
<u>B. Non-Hispanic White</u>								
Pension Wealth PW	0.771	0.764	0.762	0.765	-0.008	-0.001	0.003	-0.006
Social Security Wealth SSW	0.322	0.314	0.346	0.332	-0.009	0.033	-0.014	0.010
Retirement Wealth RW	0.443	0.469	0.500	0.513	0.026	0.031	0.013	0.070
NWX	0.808	0.824	0.842	0.883	0.015	0.018	0.041	0.074
Net Worth NW	0.781	0.803	0.818	0.852	0.021	0.015	0.034	0.070
PAW	0.758	0.772	0.788	0.821	0.014	0.016	0.033	0.063
NWX + SSW	0.648	0.649	0.687	0.711	0.001	0.037	0.025	0.063
Augmented Wealth AW	0.632	0.642	0.674	0.699	0.010	0.032	0.025	0.067
<u>C. African-American</u>								
Pension Wealth PW	0.853	0.837	0.816	0.832	-0.016	-0.021	0.016	-0.021
Social Security Wealth SSW	0.491	0.348	0.358	0.350	-0.143	0.009	-0.007	-0.141
Retirement Wealth RW	0.591	0.487	0.503	0.478	-0.104	0.015	-0.025	-0.113
NWX	0.865	0.895	0.891	1.044	0.030	-0.003	0.153	0.179
Net Worth NW	0.868	0.855	0.848	0.972	-0.013	-0.007	0.124	0.104
PAW	0.809	0.809	0.803	0.892	0.000	-0.006	0.089	0.082
NWX + SSW	0.622	0.513	0.568	0.571	-0.108	0.054	0.004	-0.050
Augmented Wealth AW	0.646	0.561	0.597	0.601	-0.086	0.036	0.004	-0.046
<u>D. Hispanic</u>								

Pension Wealth PW	0.896	0.869	0.878	0.880	-0.027	0.008	0.002	-0.017
Social Security Wealth SSW	0.396	0.329	0.306	0.312	-0.067	-0.022	0.006	-0.083
Retirement Wealth RW	0.500	0.443	0.449	0.437	-0.057	0.006	-0.012	-0.064
NWX	0.926	0.917	0.900	0.980	-0.009	-0.017	0.080	0.054
Net Worth NW	0.917	0.894	0.880	0.945	-0.023	-0.014	0.064	0.027
PAW	0.869	0.852	0.853	0.905	-0.017	0.001	0.053	0.036
NWX + SSW	0.599	0.558	0.614	0.586	-0.041	0.055	-0.027	-0.013
Augmented Wealth AW	0.623	0.582	0.629	0.608	-0.041	0.047	-0.021	-0.015
<u>Differences in Gini coeffs between races</u>								
					Change			
<u>1. All Households</u>					1989-	2007	1989-	
<u>Blacks - Whites</u>	1989	2001	2007	2016	2007	2016	2016	
Pension Wealth PW	0.082	0.073	0.054	0.067	-0.028	0.013	-0.015	
Social Security Wealth SSW	0.169	0.034	0.011	0.018	-0.158	0.007	-0.150	
Retirement Wealth RW	0.148	0.019	0.002	-0.035	-0.146	-0.038	-0.183	
NWX	0.057	0.071	0.049	0.161	-0.007	0.112	0.105	
Net Worth NW	0.086	0.052	0.030	0.120	-0.057	0.091	0.034	
PAW	0.052	0.037	0.015	0.071	-0.037	0.056	0.019	
NWX + SSW	-0.026	-0.136	-0.119	-0.140	-0.092	-0.021	-0.114	
Augmented Wealth AW	0.015	-0.081	-0.077	-0.098	-0.092	-0.021	-0.113	
<u>Hispanics - Whites</u>								
Pension Wealth PW	0.125	0.106	0.115	0.114	-0.010	-0.001	-0.011	
Social Security Wealth SSW	0.073	0.015	-0.040	-0.020	-0.113	0.020	-0.093	
Retirement Wealth RW	0.057	-0.026	-0.051	-0.077	-0.108	-0.025	-0.134	
NWX	0.118	0.093	0.058	0.097	-0.060	0.039	-0.021	
Net Worth NW	0.136	0.092	0.062	0.093	-0.074	0.031	-0.043	
PAW	0.112	0.080	0.065	0.084	-0.047	0.020	-0.027	
NWX + SSW	-0.049	-0.091	-0.073	-0.125	-0.024	-0.052	-0.076	
Augmented Wealth AW	-0.009	-0.060	-0.044	-0.091	-0.036	-0.046	-0.082	
<u>Differences in Gini coeffs between PAW and AW</u>								
A. Non-Hispanic White	0.126	0.130	0.114	0.122	-0.011	0.008	-0.004	
B. African-American	0.163	0.248	0.206	0.291	0.043	0.085	0.128	

C. Hispanic	0.246	0.270	0.223	0.297	-0.023	0.074	0.051
<u>Differences in Gini coeffs between NWX and NWX+SSW</u>							
A. Non-Hispanic White	0.160	0.174	0.156	0.171	-0.005	0.016	0.011
B. African-American	0.243	0.381	0.324	0.473	0.080	0.149	0.229
C. Hispanic	0.327	0.359	0.287	0.394	-0.040	0.107	0.066
Note: author's computations from the 1989, 2001, 2007, and 2016 SCF.							
Retirement Wealth RW = PW + SSW							
Augmented Wealth AW = NWX + PW + SSW							

**Appendix Table 1. Average Annual Nominal Rates of Return
By Asset Type and Period, 1983-2016**

Description	Average nominal rates of return by period (percentage)					
	1983- 2013	1983- 1989	1989- 2001	2001- 2007	2007- 2010	2010- 2013
Residential real estate	3.51	4.02	4.49	5.84	-7.22	4.59
Business + non-home real estate	4.53	3.94	4.10	9.75	-5.83	7.38
Liquid assets	3.98	6.70	4.69	3.11	1.28	0.12
Financial assets (including stocks)	8.63	13.32	11.17	2.34	-1.33	11.63
Pension accounts	7.52	11.19	9.68	2.99	-0.20	8.26
Mortgage debt	0.00	0.00	0.00	0.00	0.00	0.00
Non-mortgage debt	0.00	0.00	0.00	0.00	0.00	0.00
Inflation (CPI-U average)	2.88	3.72	3.02	2.66	1.71	2.23

Notes:

Real Rate of Return = $(1 + \text{nominal rate}) / (1 + \Delta\text{CPI}) - 1$

Owner-Occupied Housing: The source for years 1989 to 2007 is Table 935 of the *2009 Statistical Abstract*, U.S. Bureau of the Census, available at [<http://www.census.gov/compendia/statab/>]. For years after 2007, the source is the National Association of Realtors, “Median Sales Price of Existing Single-Family Homes for Metropolitan Areas,” available at: <http://www.realtor.org/>. The figures are based on median prices of existing houses for metropolitan areas only.

Business and Non-Home Real Estate: Holding gains (taken from the Financial Accounts of the United States, Table R.100, divided by equity in noncorporate business (taken from the FFA, Table B.100), available at: <http://www.federalreserve.gov/releases/Z1/20140605>).

Liquid assets: The weighted average of the rates of return on checking deposits and cash, time and saving deposits, and life insurance reserves. The weights are the proportion of these assets in their combined total (calculated from the FFA, Table B.100). The assumptions regarding the rates of return are: zero for checking deposits, the rate of return on a 1-month CD (taken from the table “H.15 Selected Interest Rates” published by the Federal Reserve and available at: <http://www.federalreserve.gov/releases/h15/data.htm>) for time and saving deposits, and, one plus the inflation rate for life insurance reserves.

Financial assets: The weighted average of the rates of return on open market paper, Treasury securities, municipal securities, corporate and foreign bonds, corporate equities, and mutual fund shares. The weights are the proportion of these assets in total financial assets held by the household sector (calculated from the FFA, Table B.100). The assumption regarding the rate of return on open market paper is that it equals the rate of return on 1-month Finance paper (taken from the table H.15 “Selected Interest Rates” published by the Federal Reserve and available at: <http://www.federalreserve.gov/releases/h15/data.htm>). The data for the rates of return on other assets are taken from the *Economic Report of the President 2017*, Table B-25, available at <https://www.govinfo.gov/content/pkg/ERP-2017/pdf/ERP-2017-table25.pdf>

The assumptions regarding Treasury securities, municipal securities, corporate and foreign bonds, and corporate equities are, respectively, average of Treasury security yields, high-grade municipal bond yield, average of corporate bond yields, and annual percent change in the S&P 500 index. Mutual fund shares are assumed to earn a rate of return equal to the weighted average of the rates of return on open market paper, Treasury securities, municipal securities, corporate and foreign bonds, and corporate equities. The weights are the proportions of these assets in the total financial assets of mutual funds (calculated from the FFA, Table L.123).

Stock prices: Table B-96 of the *Economic Report of the President, 2013*, available at

available at <http://www.gpoaccess.gov/eop/tables13.html>, with updates to 2016 from:
<http://www.fedprimerate.com/s-and-p-500-history.htm>

Pension (DC) Accounts: Weighted average of returns on stocks, bonds, and money market funds, where the weights are based on the average portfolio composition of DC accounts over the period (for the 1983-89 period, the weights are based on 1989 data only).

CPI-U: from the *Economic Report of the President 2017*, Table B-10, available at:
<https://www.govinfo.gov/content/pkg/ERP-2017/pdf/ERP-2017-table10.pdf>

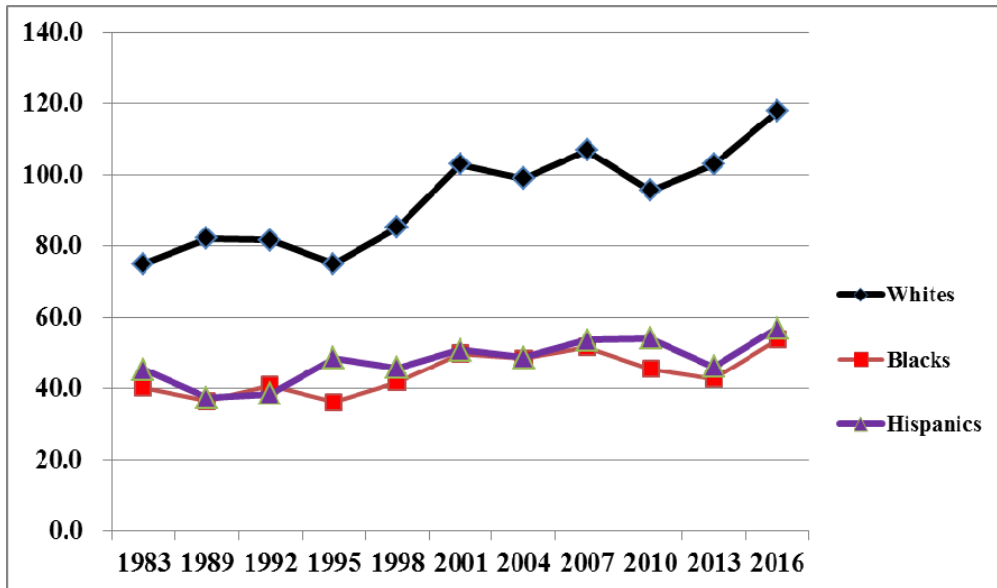


Figure 1a. Mean Income by Race and Ethnicity, 1983-2016 (1000s, 2016\$)

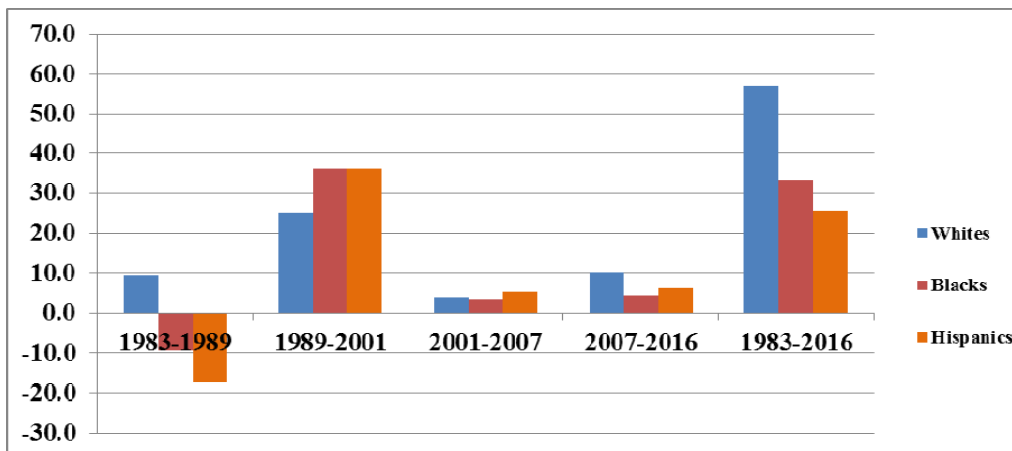


Figure 1b. Percentage Change in Mean Income (2016\$) by Race and Ethnicity, 1983-2016

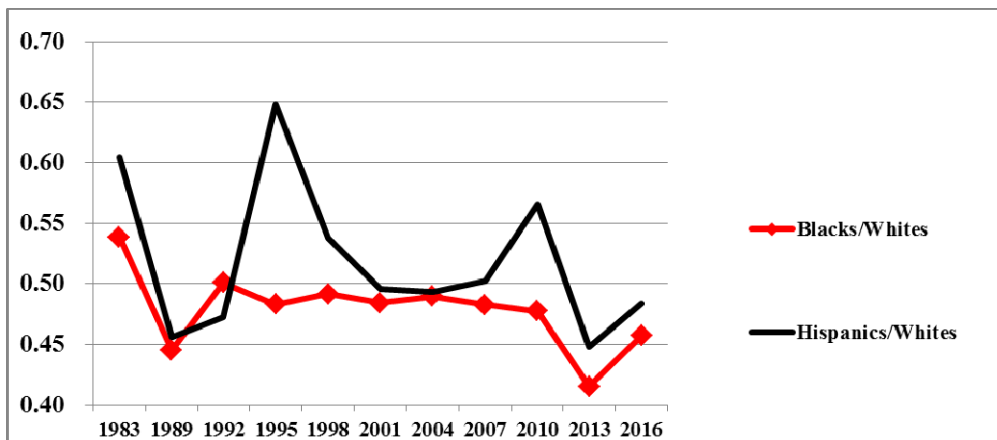


Figure 1c. Ratio of Mean Income by Race and Ethnicity, 1983-2016

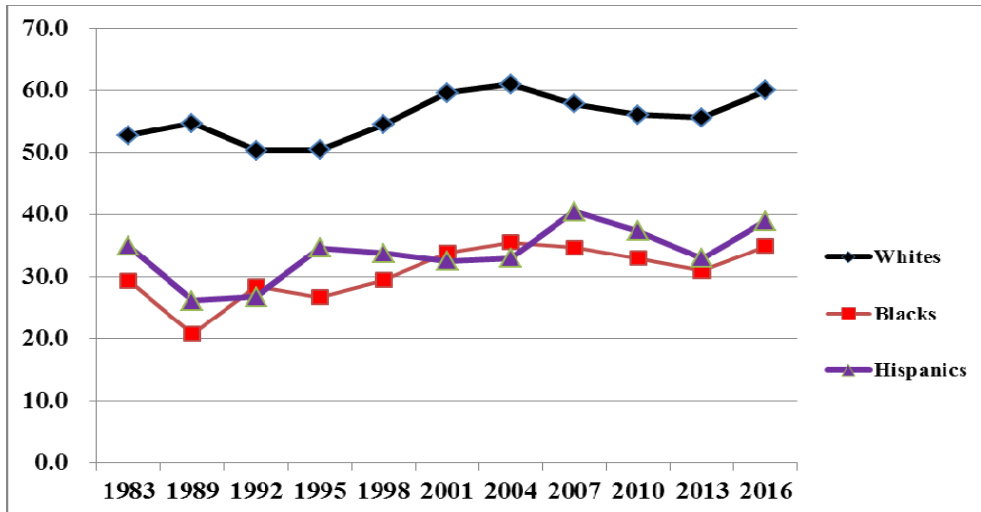


Figure 2a. Median Income by Race and Ethnicity, 1983-2016 (1000s, 2016\$)

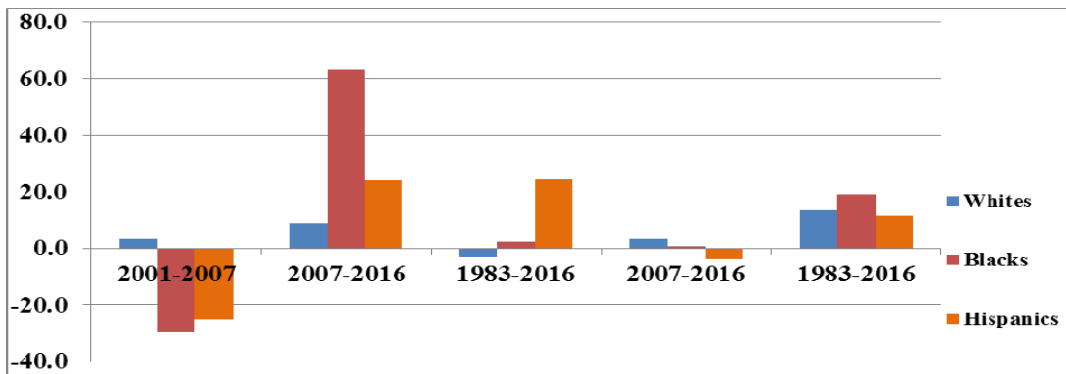


Figure 2b. Percentage Change in Median Income (2016\$) by Race and Ethnicity, 1983-2016

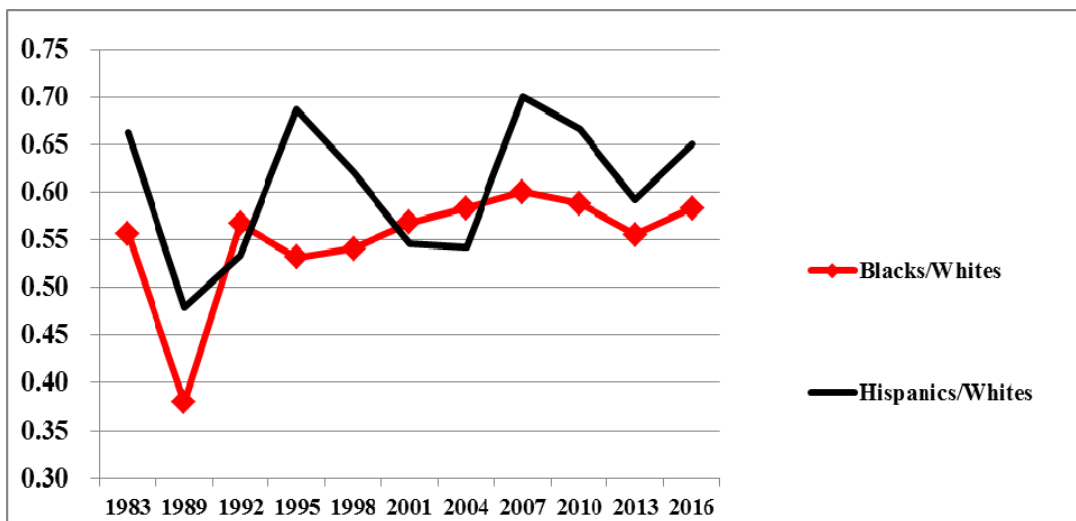


Figure 2c. Ratio of Median Income by Race and Ethnicity, 1983-2016

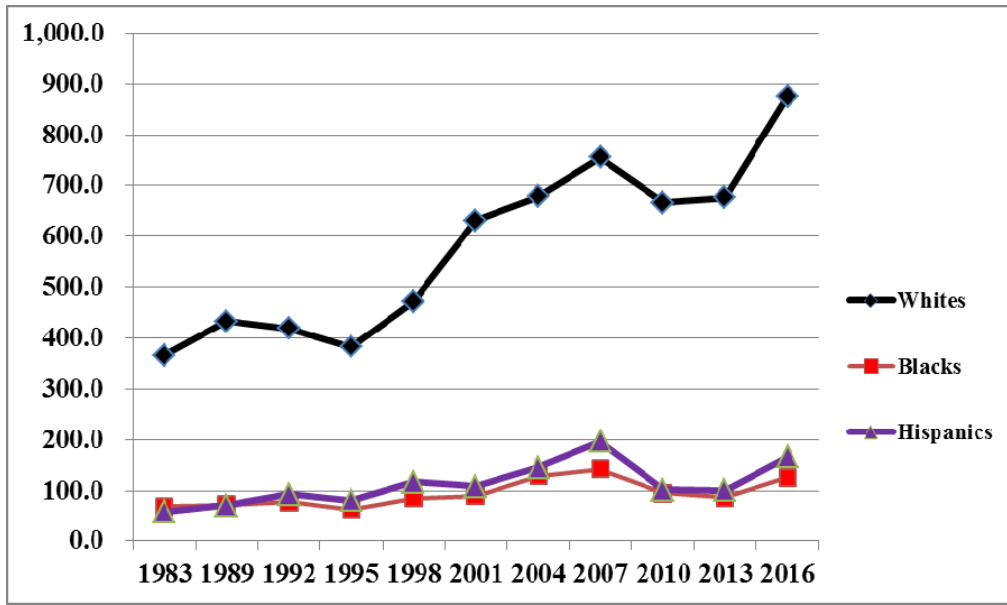


Figure 3a. Mean Net Worth by Race and Ethnicity, 1983-2016 (1000s, 2016\$)

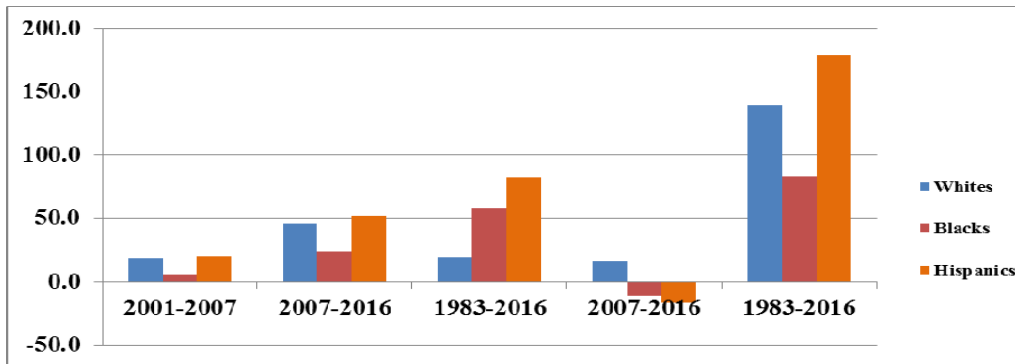


Figure 3b. Percentage Change in Mean Net Worth (2016\$) by Race and Ethnicity, 1983-2016

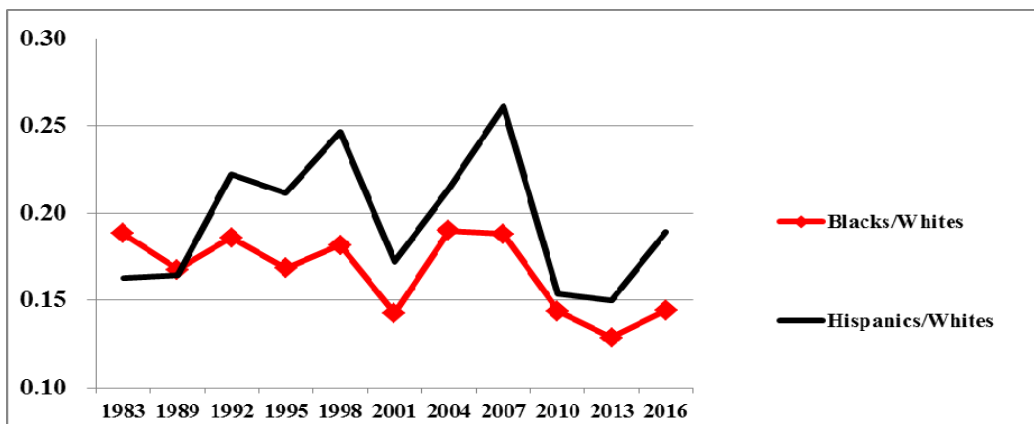


Figure 3c. Ratio of Mean Net Worth by Race and Ethnicity, 1983-2016

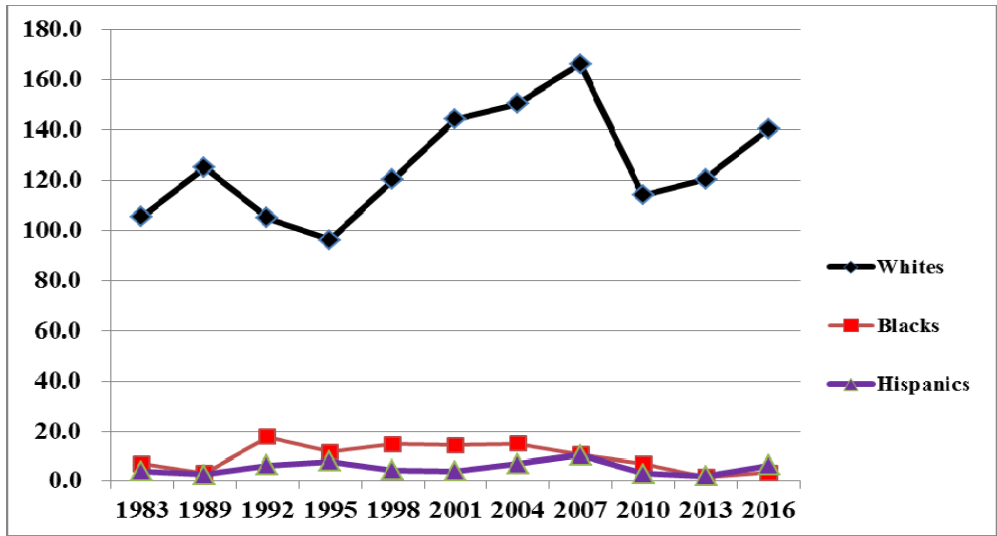


Figure 4a. Median Net Worth by Race and Ethnicity, 1983-2016 (1000s, 2016\$)

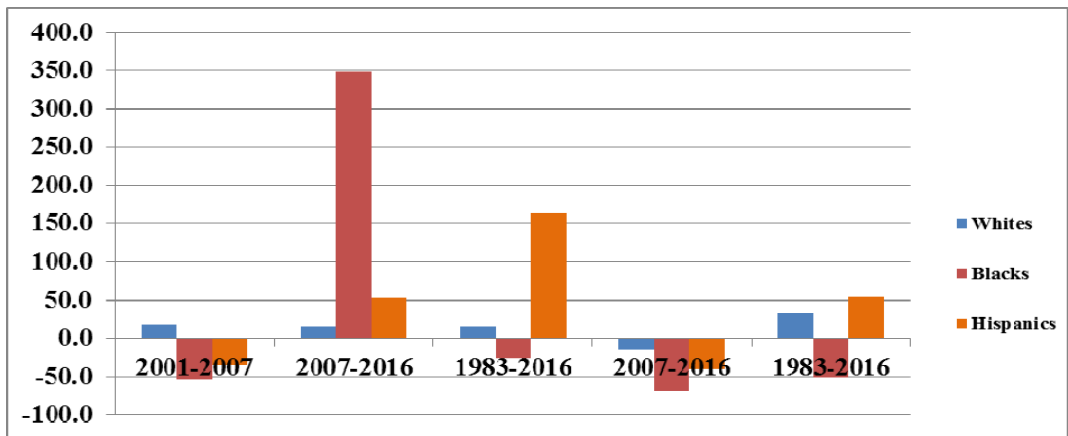


Figure 4b. Percentage Change in Median Net Worth (2016\$) by Race and Ethnicity, 1983-2016

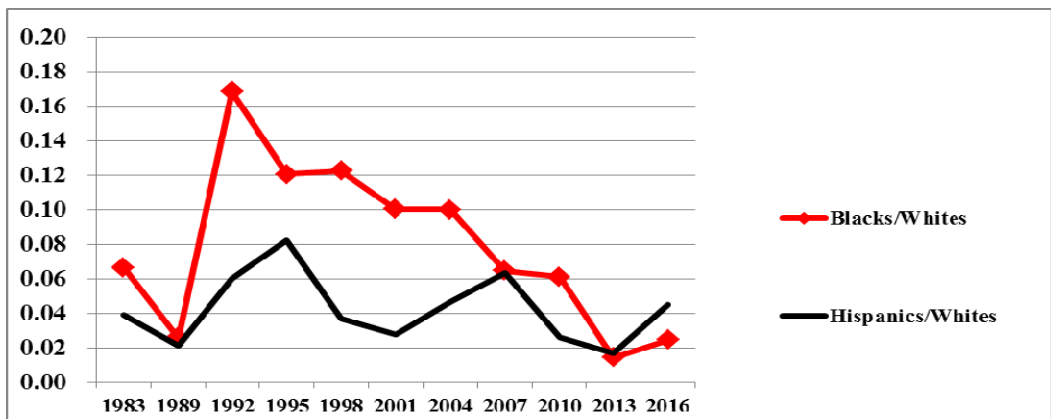


Figure 4c. Ratio of Median Net Worth by Race and Ethnicity, 1983-2016

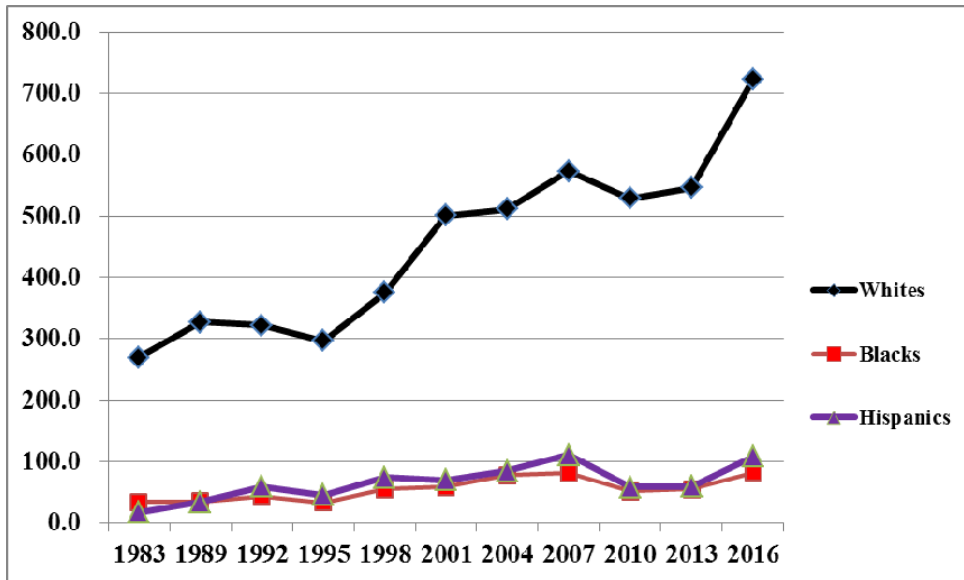


Figure 5a. Mean Financial Resources by Race and Ethnicity, 1983-2016 (1000s, 2016\$)

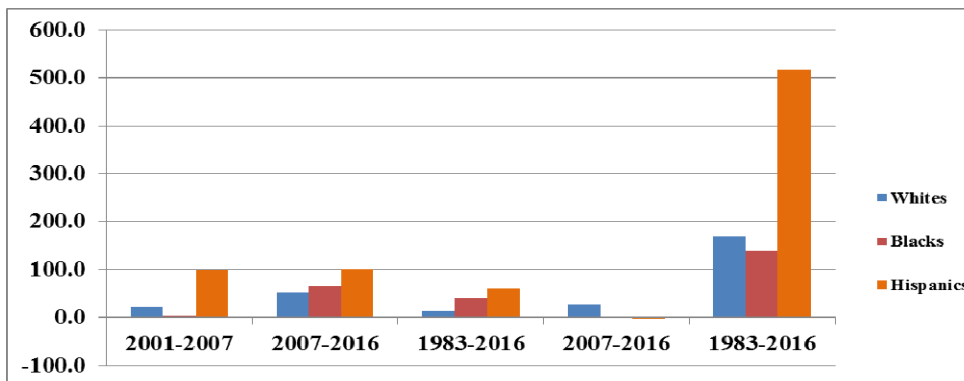


Figure 5b. Percentage Change in Mean Financial Resources (2016\$) by Race and Ethnicity, 1983-2016

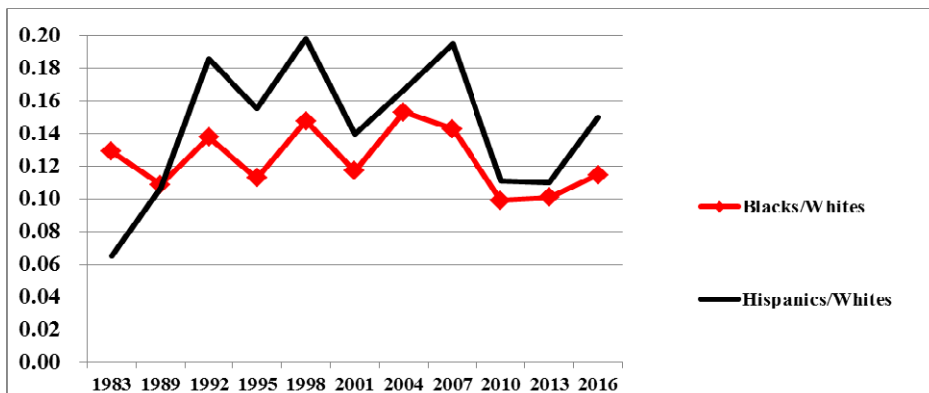


Figure 5c. Ratio of Mean Financial Resources by Race and Ethnicity, 1983-2016

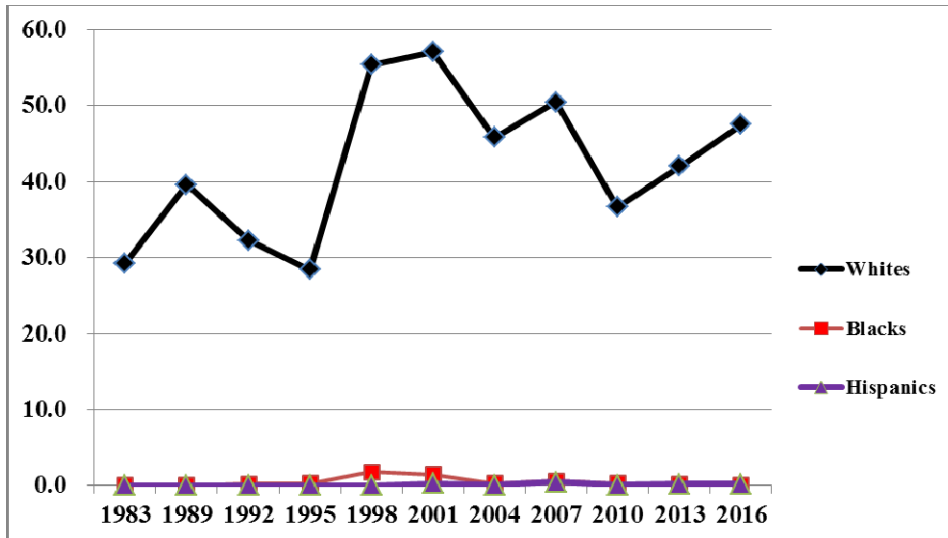


Figure 6. Median Financial Resources by Race and Ethnicity, 1983-2016 (1000s, 2016\$)

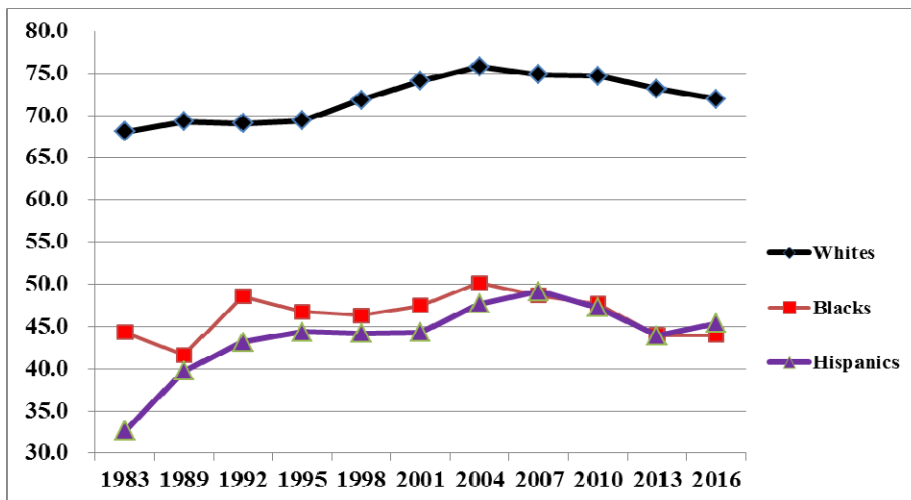


Figure 7a. Homeownership Rate by Race and Ethnicity, 1983-2016 (percentage)

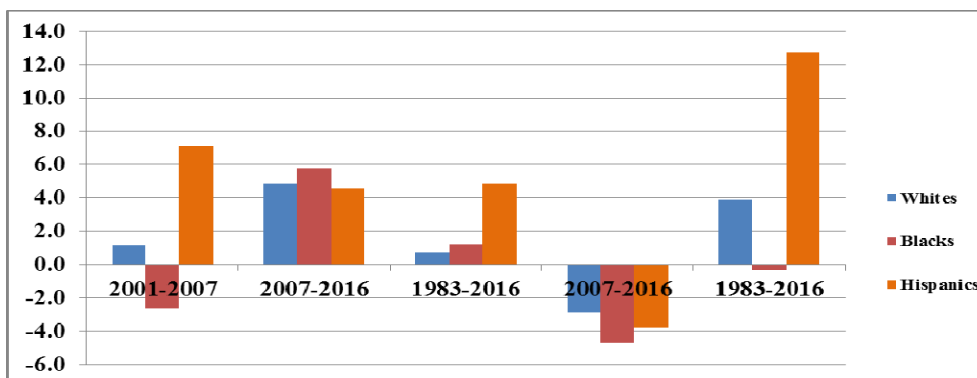


Figure 7b. Change in Homeownership Rate by Race & Ethnicity, 1983-2016 (percentage points)

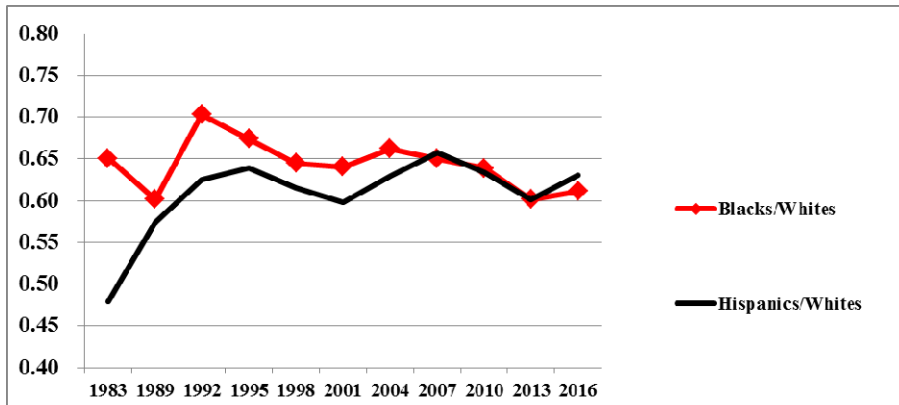


Figure 7c. Ratio of Homeownership Rates by Race and Ethnicity, 1983-2016

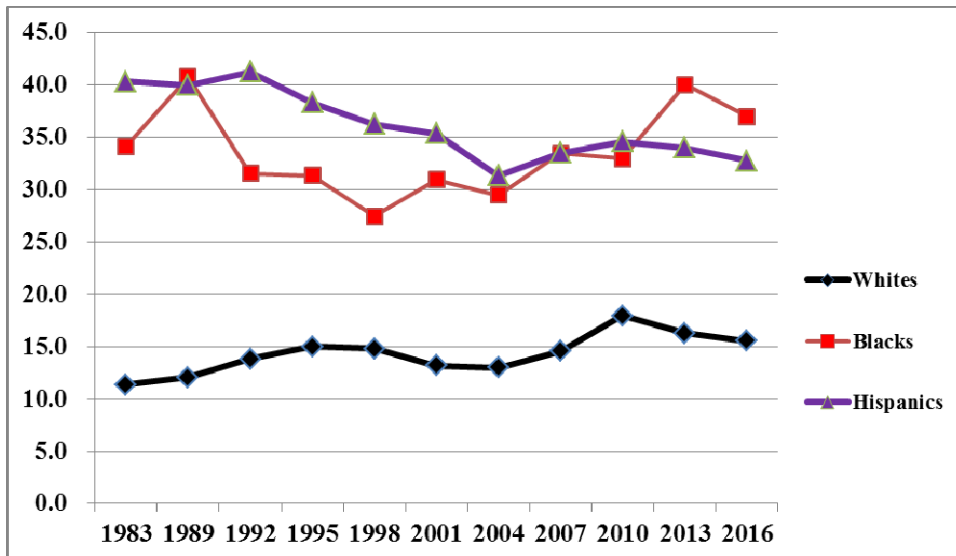


Figure 8a. Percentage of Households with Zero or Negative Net Worth by Race and Ethnicity, 1983-2016

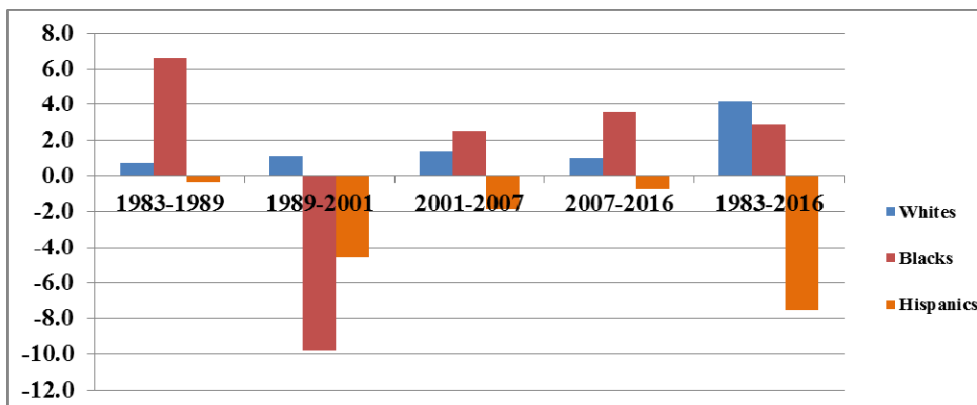


Figure 8b. Change in Share with Non-Positive Wealth by Race and Ethnicity, 1983-2016 (Percentage points)

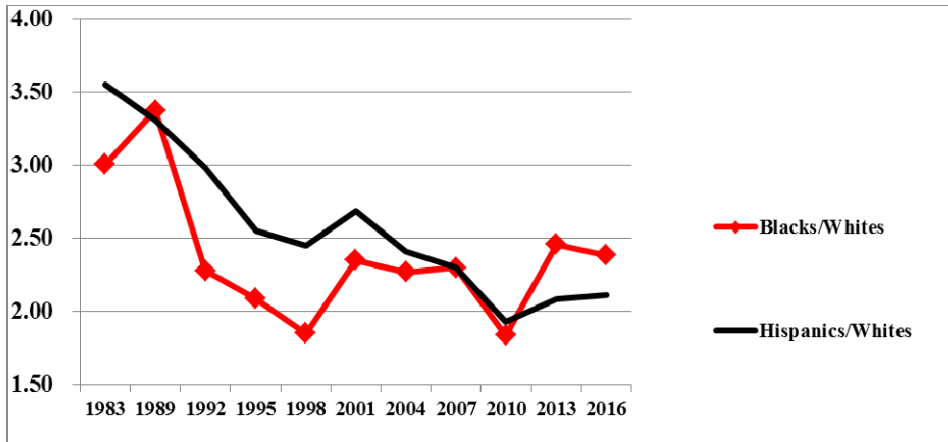


Figure 8c. Ratio of Percentage Shares with Non-Positive Wealth by Race and Ethnicity, 1983-2016

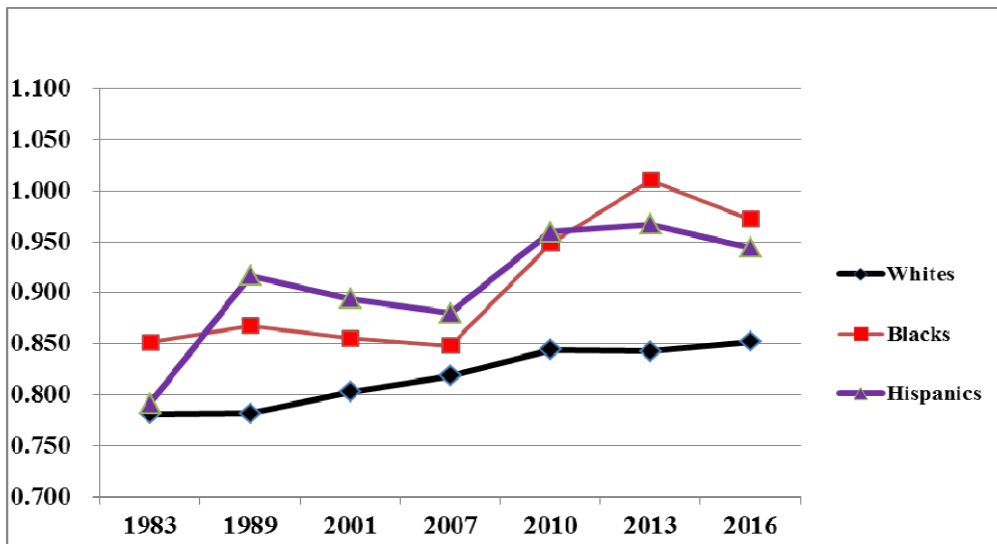


Figure 9a. Gini Coefficients for Net Worth by Race and Ethnicity, 1983-2016

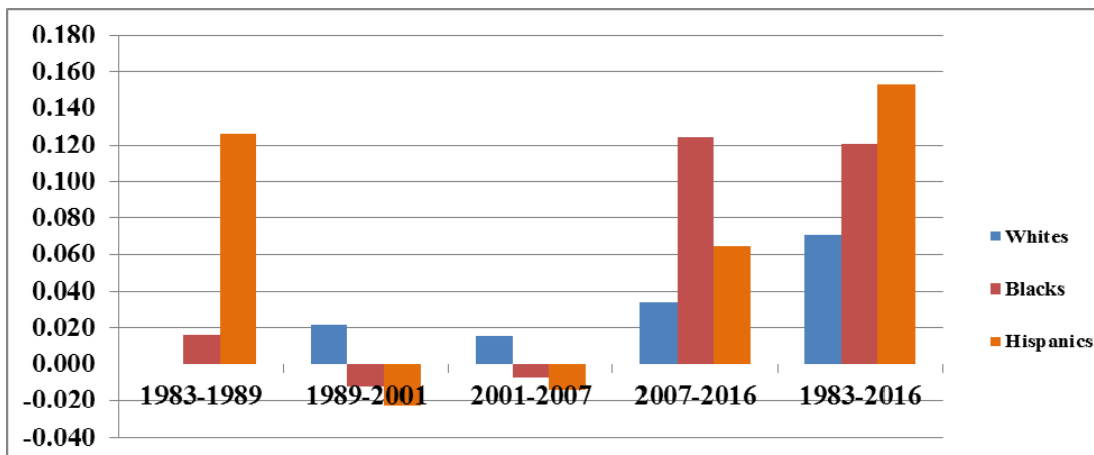


Figure 9b. Change in the Gini Coefficient for Net Worth by Race and Ethnicity, 1983-2016