# WEALTH INEQUALITY

The Stanford Center on Poverty and Inequality

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#### **KEY FINDINGS**

- After two decades of robust growth in middle class wealth, median net worth plummeted by 47% from 2007 to 2010.
- As median net worth declined during the Great Recession, wealth became more unequally distributed.
  In fact, wealth inequality rose for the first time since the early 1980s, even as income inequality declined (under some measures).
- The recent sharp fall in median net worth and the rising inequality of net worth are due to the high leverage of middle class families and the high share of homes in their portfolio.
- The Great Recession hit black households much harder than white households, with the ratio of net worth between the two groups falling from 0.19 in 2007 to 0.14 in 2010. Hispanic households were hammered even more by the Great Recession: The ratio of net worth between Hispanic and white households plummeted from 0.26 to 0.15.

The last three decades have witnessed some remarkable asset price movements. While the median house price in real terms was virtually the same in 1989 and 2001, house prices suddenly took off thereafter, rising 19 percent in real terms from 2001 to 2007. Then, the Great Recession hit and home prices plummeted 24 percent. This was followed by a partial recovery. Median house prices rose 7.8 percent through September 2013, still well below their 2007 value.

The stock market has trended differently during this same period. In contrast to the housing market, the stock market boomed in the 1990s, surging 171 percent between 1989 and 2001. However, from 2001 to 2007, the Standard & Poor's 500 was up only 6 percent. During the Great Recession, it nosedived 26 percent. In this case, there was a strong recovery after 2010, with stock prices up 41 percent through September 2013.

This brief poses four simple questions in response to such shocks: How have the rapid and unprecedented movements in asset prices affected the absolute amount of middle class wealth? How have they affected wealth inequality? Which groups were most affected by these changes? And, finally, has the post-recession period brought about much of a recovery in household wealth?

It will be shown that the Great Recession abruptly reversed a trend of robust growth in middle class wealth since the early 1980s and also brought about the first growth in wealth inequality since the early 1980s. Median wealth plummeted 47 percent from

2007 to 2010, and the inequality of net worth, after almost two decades of little movement, rose sharply. Relative indebtedness of the middle class also continued to expand, even though the middle class had stopped taking on new debt.

What drove these changes? This brief will show that the recent sharp fall in median net worth and the recent rise in the inequality of net worth are traceable to the high leverage of middle class families and the high share of homes in their portfolios. Median net worth fell because middle class homeowners were not able to shed mortgage debt. At the same time, their home values declined.

Wealth inequality increased because home values composed 67 percent of middle class wealth but only 9 percent of the portfolios of the wealthiest one percent. It follows that the wealthiest were better protected against the sharp decline in housing prices during the Great Recession.

This brief will also reveal that the middle class wealth fallout was not felt equally across demographic groups. The sharp fall in the relative net worth of both minority and young households is again traceable to their high leverage and the high share of homes in their portfolio. The ratio of net worth between black and white households fell from 0.19 in 2007 to 0.14 in 2010 and that between Hispanic and white households plummeted from 0.26 to 0.15. The relative wealth of the under 35 age group (when compared to total wealth) plummeted from 0.17 in 2007 to 0.10 in 2010 and that of age group 35-44 from 0.58 to 0.41.

But has household wealth recovered since the Great Recession? The results are mixed. According to the Financial Accounts of the United States, mean household wealth fully recovered by the second quarter of 2013. Other sources, however, paint a less optimistic portrait.

In the following sections, these key results are laid out and elaborated. The concluding section will then examine the forces behind these results. For the years 1983 to 2010, the primary data source is the Survey of Consumer Finances (SCF), conducted by the Federal Reserve Board.

#### The Great Reversal in Wealth

It is useful to begin by examining trends in mean and median household wealth. These trends evince what may be called the "great reversal" in which the relatively high rates of growth in recent decades come to a sudden end with the Great Recession.

Figure 1 shows the robust growth in wealth from 1983 to 2007. Median wealth grew at 1.1 percent per year from 1983 to 1989, 1.3 percent per year between 1989 and 2001, and then at 2.9 percent per year on average from 2001 to 2007. Between 2007 and 2010, median wealth plunged by a staggering 47 percent. The primary reasons, as we shall see below, were the collapse in the housing market and the high leverage of middle class families.

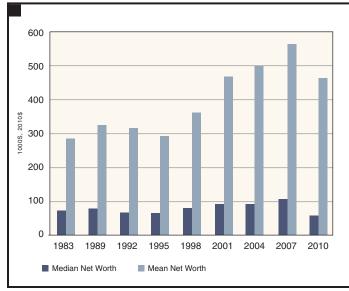
Mean net worth, which is more sensitive to the long "right tail" of the distribution, also grew vigorously over this time period. It grew at 2.3 percent per year from 1983 to 1989, at 3.0 percent per year from 1989 to 2001, and at 3.1 percent per year on average from 2001 to 2007. Between 1983 and 2007, mean wealth grew more than twice as fast as the median, indicating widening inequality of wealth over these years.

The Great Recession also saw an absolute decline in mean household wealth. However, whereas median wealth plunged by 47 percent, mean wealth fell by only 18 percent. The relatively faster growth in mean wealth than median wealth from 2007 to 2010 was coincident with rising wealth inequality.

The changes in the income distribution are rather different. When the Current Population Survey (CPS) is used to track median income in real terms, we see that it gained 11 percent between 1983 and 1989, grew by only 2.3 percent from 1989 to 2001, and then grew by another 1.6 percent from 2001 to 2007 (see Figure 2). From 2007 to 2010, it fell by 6.4 percent. This reduction was not nearly as great as that in median wealth.

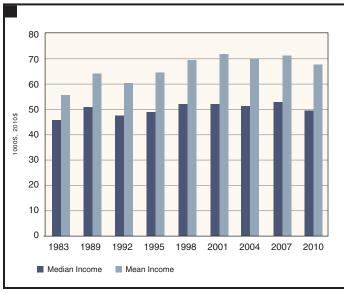
Mean income surged by 2.4 percent per year from 1983 to 1989, advanced by 0.9 percent per year from 1989 to 2001, and then dipped by 0.1 percent per year from 2001 to 2007. Mean income also dropped in real terms from 2007 to 2010, by 5.0 percent, slightly less than that of median income.

FIGURE 1. Mean and Median Net Worth, 1983-2010



Source: Survey of Consumer Finances.

FIGURE 2. Mean and Median Household Income, 1983-2010



Source: Survey of Consumer Finances

#### **Trends in Inequality**

What about trends in inequality? The Gini coefficient for wealth, after rising steeply between 1983 and 1989 from 0.80 to 0.83, remained virtually unchanged from 1989 to 2007 (Figure 3). In contrast, the years of the Great Recession saw a very sharp elevation in wealth inequality, with the Gini coefficient rising to 0.87.

The time trend for income inequality contrasts with that for wealth inequality. Income inequality showed a sharp rise from 1983 to 1989, with the Gini coefficient expanding from 0.48 to 0.52, and again from 1989 to 2007, with the Gini index advancing to 0.57. Perhaps somewhat surprisingly, the Great Recession witnessed a rather sharp contraction in income inequality. The Gini coefficient fell from 0.57 in 2007 to 0.55 in 2010. One of the puzzles we have to contend with is that wealth inequality rose sharply over the Great Recession while income inequality contracted, at least according to the Survey of Consumer Finances used here. It should be noted, however, that other data sets and other measures of inequality do not suggest a sharp contraction (see, e.g., the brief on income inequality).

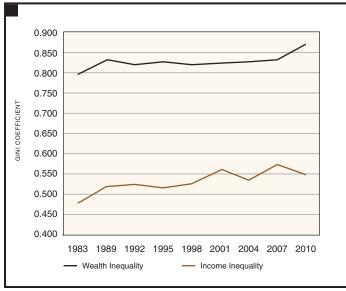
It is of course well known that wealth is more unequally distributed than income. This result is quite dramatically revealed in Figure 3. Because the Great Recession increased wealth inequality but reduced income inequality, this disparity has become even more pronounced in recent years.

#### **Portfolios and Debt**

It is also important to monitor portfolio composition because some types of assets, particularly housing assets, were especially vulnerable during the Great Recession. In 2010, homes accounted for 31 percent of total assets among all households (first column of Figure 4). However, net home equity—home value minus mortgage debt—amounted to only 18 percent of total assets. Liquid assets made up 6 percent and pension accounts 15 percent. "Investment assets" (non-home real estate, business equity, financial securities, corporate stock, mutual funds, and trust funds) collectively amounted to 45 percent. The debt-equity ratio (the ratio of debt to net worth) was 0.21 and the debt-income ratio was 1.27.

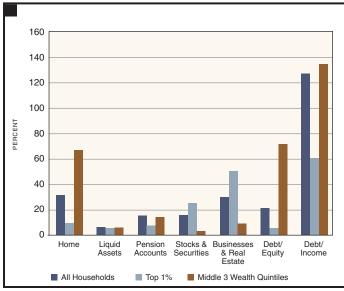
There are marked differences in portfolio composition by wealth class. As shown in the second column of Figure 4, the wealthiest one percent invested over three quarters of their savings in investment assets. Housing accounted for only 9 percent, liquid assets 5 percent, and pension 8 percent. The debt-equity ratio was only 0.03, the debt-income ratio was 0.61, and the ratio of mortgage debt to house value was 0.19. In contrast, 67 percent of the assets of the middle three wealth quintiles was invested in their home, a crucial difference relative to the portfolios of the wealthier (column 3 of

FIGURE 3. Wealth and Income Inequality, 1983-2010 (Gini Coefficients)



Source: Survey of Consumer Finances.

FIGURE 4. Composition of Household Wealth by Wealth Class, 2010



Source: Survey of Consumer Finances.

Figure 4). Home equity amounted to only 32 percent of total assets, a reflection of their large mortgage debt. Another 20 percent went into monetary savings and pension accounts. Together housing, liquid, and pension assets accounted for 87 percent, with the remainder in investment assets. Their debt-equity ratio was 0.72 and their debt-income ratio was 1.35, both much higher than that of the top percentile. Finally, their mortgage debt amounted to a little more than half the value of their home.

The rather staggering debt level of the middle class in 2010 raises the question of whether this was a recent phenomenon. It indeed was. There was a sharp rise in the debt-equity ratio of the middle class from 0.37 in 1983 to 0.61 in 2007, mainly a reflection of a steep rise in mortgage debt. The debt-income ratio more than doubled from 1983 to 2007, from 0.67 to 1.57. The rise in the debt-equity ratio and the debt to income ratio was much steeper than for all households. In 1983, the debt-income ratio was about the same for middle class as for all households, but by 2007 the ratio was much larger for the middle class.

Then, the Great Recession hit. The debt-equity ratio continued to rise, reaching 0.72 in 2010, but there was actually a retrenchment in the debt-income ratio, falling to 1.35. The reason is that, from 2007 to 2010, the mean debt of the middle class actually contracted by 25 percent in constant dollars. Mortgage debt fell by 23 percent as families paid

down their outstanding balances, and other debt dropped by 32 percent as families paid off credit card balances and other consumer debt. The steep rise in the debt-equity ratio was due to the sharp drop in net worth, while the decline in the debt to income ratio was almost exclusively due to the sharp contraction of overall debt.

## The Role of Leverage

Two major puzzles emerge. The first is the steep plunge in median net worth in real terms of 47 percent between 2007 and 2010 despite an only moderate drop in median income of 6.4 percent and less steep declines in housing and stock prices of 24 percent and 26 percent, respectively. The second is the steep increase of wealth inequality of 0.035 Gini points despite a decline in income inequality of 0.025 Gini points and a virtually unchanged ratio of stock to housing price. As noted above, wealth inequality is positively related to the ratio of stock to house prices, since stocks are heavily concentrated among the rich and real estate is the chief asset of the middle class.

Changes in median wealth and wealth inequality from 2007 to 2010 can be explained by leverage, the ratio of debt to net worth. The steep fall in median wealth was due in large measure to the high leverage of middle class households. The spike in wealth inequality was largely due to differential leverage between the rich and the middle class.

**Gross Assets Gross Assets Gross Assets** Net Worth Net Worth Net Worth Middle 3 Quintiles Middle 3 Quintiles All Housholds Top 1% All Housholds **Top 1%** 8 6 4 2 0 -2 -4 -6 -8 -10 -12 -14 **1983-1989 1989-2001** 2001-2007 2007-2010

FIGURE 5. Average Annual Rates of Return by Period and Wealth Class

Source: Survey of Consumer Finances.

Figure 5 shows average annual real rates of return for both gross assets and net worth over the period from 1983 to 2010. Results are based on the average portfolio composition over the period. It is of interest to examine the results for all households. The overall annual return on gross assets rose from 2.20 percent in the 1983-1989 period to 3.25 percent in the 1989-2001 period and then to 3.34 percent in the 2001-2007 period before plummeting to -6.95 percent from 2007 to 2010.

The average annual rate of return on net worth among all households also increased from 3.17 percent in the first period to 4.25 percent in the second and to 4.31 percent in the third but then fell off sharply to -7.98 percent in the last period. It is notable that the returns on net worth are uniformly higher by about one percentage point—than those on gross assets over the first three periods, when asset prices were generally rising. However, in the 2007-2010 period, the opposite was the case, with the annual return on net worth 1.03 percentage points 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 1983-2010 period, the annual return on net worth was 0.87 percentage points higher than that on gross assets.

There are striking differences in returns by wealth class. The returns on gross assets were generally higher for the top one percent than the middle three quintiles. The differences are quite substantial. Over the full 1983-2010 period, the average annual rate of return on gross assets for the top one percent was 1.39 percentage points greater than that of the middle quintiles. The differences reflect the greater share of high yield investment assets like stocks in the portfolios of the rich and the greater share of housing in the portfolio of the middle class (see Figure 4).

This pattern is almost exactly reversed for returns on net worth. In this case, in the first three periods, the return was higher for the middle quintiles (except for the 1983-1989 period when its return was slightly lower than that of the top one percent), but in the 2007-2010 period the middle three quintiles registered a lower (that is, more negative) return. Differences in returns between the top one percent and the middle quintiles were quite substantial in some years. In the 2001-2007 period, the annual return was 1.92 percentage points higher for the middle quintiles, while in the 2007-2010 period, it was 4.27 percentage points higher for the top percentile. The spread in returns between the top one percent and the middle quintiles reflects the much higher leverage of the middle class (see Figure 4).

The huge negative rate of return on net worth of the middle quintiles was largely responsible for the precipitous drop in median net worth between 2007 and 2010. This factor, in turn, was attributable to the steep drop in housing prices and the very high leverage of the middle class. Likewise, the very high rate of return on net worth of the middle three quintiles over the 2001-2007 period (almost 6.0 percent per year) played a big role in explaining the robust advance of median net worth, despite the sluggish growth in median income. This, in turn, was a result of their high leverage coupled with the boom in housing prices.

The substantial differential in returns on net worth between the middle quintiles and the top percentile (over a point and a half lower) helps explain why wealth inequality rose sharply between 2007 and 2010 despite the decline in income inequality. Likewise this differential over the 2001-2007 period (a spread of about two percentage points in favor of the middle quintiles) helps account for the stasis in wealth inequality over these years despite the increase in income inequality.

#### The Racial Divide Widens

Striking differences are found in the wealth holdings of specific racial and ethnic groups. In Figure 6, households are divided into three groups: (i) non-Hispanic whites ("whites" for short), (ii) non-Hispanic African-Americans ("blacks" for short), and (iii) Hispanics. In 2007, while the ratio of mean incomes between black and white households was an already low 0.48, the ratio of mean wealth holdings was even lower, at 0.19. The homeownership rate for black households was 49 percent in 2007, a little less than two thirds that among whites.

Between 1982 and 2006, while the average real income of white households increased by 42 percent, it rose by only 28 percent for black households. As a result, the ratio of mean income slipped from 0.54 to 0.48. Between 1983 and 2001, average net worth in constant dollars climbed by 73 percent for white households but rose by only 31 percent for black households, so that the net worth ratio fell from 0.19 to 0.14. However, between 2001 and 2007, mean net worth among blacks gained an astounding 58 percent while white wealth advanced by 29 percent, so that by 2007 the net worth ratio was back to 0.19, the same level as in 1983. The large gains made by black households over these six years can be traced to the much higher share of homes in their portfolio (46 percent of total assets in 2001, compared to 27 percent among whites). The homeownership rate of black households grew from 44 to 49 percent between 1983 and 2007.

The picture is rather different for Hispanics. The ratio of mean income between Hispanics and whites in 2007 was 0.50, almost the same as that 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. The Hispanic homeownership rate was 49 percent, almost identical to that of black households.

Over the years 1983 to 2007, Hispanic mean income grew by only 18 percent, so that the ratio of Hispanic to white mean income slid from 0.60 to 0.50. On the other hand, between 1983 and 2001, mean wealth doubled for Hispanic households, at a slightly higher rate than whites, so the ratio of mean net worth increased slightly from 0.16 to 0.17. Mean net worth among Hispanics then climbed by another 82 percent between 2001 and 2007, and the corresponding ratio advanced to 0.26, quite a bit higher than that between black and white households. The surge in Hispanic wealth from 2001 to 2007 can be traced to a five percentage point jump in the Hispanic home ownership rate.

The racial picture changed radically by 2010. While the ratio of mean income between black and white households changed very little between 2007 and 2010 (income fell for both groups), the ratio of mean net worth dropped from 0.19 to 0.14. The proximate causes were the higher leverage of black households and their higher share of housing wealth in gross assets. In 2007, the debt-equity ratio among blacks was an astounding 0.55, compared to 0.15 among whites,

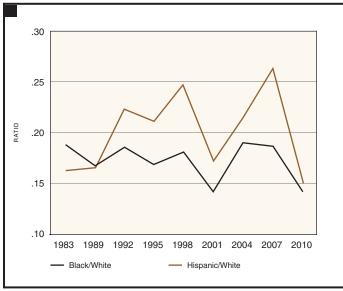
while housing as a share of gross assets was 0.54 for the former as against 0.31 for the latter. The sharp drop in home prices from 2007 to 2010 thus led to a relatively steeper loss in home equity for blacks (25 percent) than for whites (21 percent), and this factor, in turn, led to a much steeper fall in mean net worth for black households than white households.

The Great Recession actually hit Hispanic households much harder than blacks in terms of 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. However, the mean net worth in 2010 dollars of Hispanics fell almost in half, so that the mean wealth ratio relative to whites 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 0.53 for the former as against 0.31 for the latter. As a result, net home equity dropped by 48 percent among Hispanic home owners, compared to 21 percent among white home owners, and this factor, in turn, was largely responsible for the huge decline in Hispanic net worth both in absolute and relative terms.

### Wealth Shifts from the Young to the Old

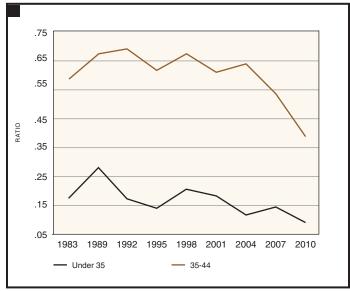
There were also notable shifts in relative wealth holdings by age group between 1983 and 2007 (see Figure 7). The relative wealth of the youngest age group, under 35 years of age, declined from 17 percent of the overall mean in 1983 to

FIGURE 6. Ratio of Mean Net Worth by Race and Ethnicity, 1983-2010



Source: Survey of Consumer Finances.

FIGURE 7. Ratio of Mean Net Worth of Young Age Groups to Overall Mean Net Worth, 1983-2010



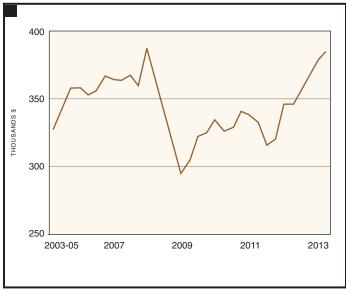
Source: Survey of Consumer Finances.

15 percent in 2007. In 2007, the mean wealth of the youngest age group was \$95,900 (in 2010 dollars), which was only slightly more than the mean wealth of this age group in 1989. The mean net worth of the 35-44 age group fell from 0.59 relative to the overall mean in 1983 to 0.54 in 2007.

Changes in relative wealth were even more dramatic during the period from 2007 to 2010. The relative wealth of the under 35 age group plummeted from 0.15 to 0.09 and that of age group 35-44 from 0.54 to 0.39. In 2010 dollar terms, the average wealth of the youngest age group collapsed from \$95,500 in 2007 to \$48,400 in 2010, while that of age group 35-44 shrank from \$325,000 to \$190,000.

Changes in the relative wealth position of the younger age groups over the Great Recession can be explained by their higher debt-equity ratio and the heavier concentration of homes in their portfolio. Homes comprised over half the value of total assets for the age group 35 and under in 2007, and the share tended to fall off with age. There was also a pronounced fall off of the debt-equity ratio with age, declining from 0.93 for the youngest group to 0.02 for the oldest, while the debt-income ratio for these groups declined from 1.68 to 0.30. Younger households were thus more heavily invested in homes and more heavily in debt, whereas the portfolio of older households was more heavily skewed to financial assets. As such, the wealth position of younger households was hit much harder by the Great Recession than that for older households.

FIGURE 8. Mean Household Wealth (from the Financial Accounts of the United States, 2013\$)



Source: Survey of Consumer Finances.

The steep decline in house prices from 2007 to 2010 thus led to a much more pronounced loss in home equity for the youngest age group (59 percent) than for all households (26 percent), and this factor, in turn, led to a much steeper fall in their net worth. The story is very similar for age group 35 to 44. Their debt-equity ratio was 0.41 in 2007, and their share of housing in gross assets was 0.44, both much higher than the corresponding figures for all households. As with the youngest age group, the drop in home prices from 2007 to 2010 caused a large fall in home equity of 49 percent, which in turn caused a steep collapse in their net worth.

## **Recovery on the Horizon?**

What, if anything, can be concluded about trends in wealth after 2010? The results presented to this point have been based on the Survey of Consumer Finance, but these data are not available after 2010. This section reports briefly on four other sources that may be used to assess post-2010 trends.

The first is the Survey of Income and Program Participation (SIPP), conducted by the U.S. Bureau of the Census. It shows essentially no change in median household wealth in real terms from 2010 to 2011. In contrast, wealth data from the Panel Study of Income Dynamics (PSID) show a continued plunge in median net worth. A third source, based on the Consumer Finance Monthly, shows a still different result. According to Lucia Dunn and Randall Olsen, median net worth in real terms hit its low point in 2010 but then more than doubled (a gain of 115 percent) through the first half of 2013. Real mean household wealth, in contrast, reached its nadir in 2009 and subsequently increased by 58 percent through the first half of 2013. In both cases, net worth in 2013 was still below its peak value in 2006 (with the median 30 percent below and the mean 14 percent below).

The fourth source is the Financial Accounts of the United States (which used to be called the "Flow of Funds"). This source differs from the other three in that it is based on aggregate data instead of household survey data. Results on mean household wealth in 2013 dollars based on my own calculations are shown in Figure 8. The figure indicates a peak wealth figure of \$387,000 in the first quarter of 2008. This was followed by a pronounced fall of 24 percent to its lowest value of \$294,000 reached in the first quarter of 2009. Mean household wealth then started to increase as asset markets recovered and reached a figure of \$386,000 by the second quarter of 2013, just about equal to its previous high.

The unfortunate upshot: The results are mixed. Because conclusions differ across sources, it is probably best to withhold judgment at this point. The next SCF is expected to be released in late 2014.

#### **Conclusions**

Median wealth showed robust growth during the 1980s and 1990s and an even faster advance from 2001 to 2007. However, from 2007 to 2010, house prices fell by 24 percent in real terms, stock prices by 26 percent, and median wealth by a staggering 47 percent. Wealth inequality, after remaining relatively stable from 1989 to 2007, also showed a steep increase over the Great Recession, with the Gini coefficient climbing from 0.834 to 0.870.

The key to understanding the plight of the middle three wealth quintiles over the Great Recession was their high degree of leverage and the high concentration of assets in their home. The steep decline in median net worth between 2007 and 2010 was primarily due to their very high negative return on net worth (-8.9 percent per year). This, in turn, was attributable to their very high degree of leverage and the precipitous fall in home prices. High leverage, moreover, helps explain why median wealth fell more than house (and stock) prices over these years and declined much more than median household income.

The large spread in rates of return on net worth between the middle three wealth quintiles and the top percentile (over a point and a half lower) also largely explains why wealth inequality increased steeply from 2007 to 2010 despite the 0.025 Gini point decline in income inequality. Indeed, the middle class took a bigger relative hit on their net worth from the decline in home prices than the top 20 percent did from the stock market plunge, a result that has not been widely appreciated.

The racial disparity in wealth holdings was almost exactly the same in 2007 as in 1983. However, the Great Recession hit black households much harder than whites. Black households suffered substantial relative (and absolute) losses from 2007 to 2010 because they had a higher share of assets invested in the home than did whites and a much higher debt-equity ratio (0.55 versus 0.15).

Hispanic households made sizeable gains on whites from 1983 to 2007. However, in a reversal of fortune, Hispanic households got hammered by the Great Recession. The relative (and absolute) losses suffered by Hispanic households over these three years are likewise traceable to the much larger share of assets invested in the home and a much higher debt-equity ratio (0.51 versus 0.15).

Young households also got pummeled by the Great Recession. The same two factors explain the losses suffered by young households—the higher share of homes in their wealth portfolio and their much higher leverage ratios.

Results are mixed on whether household wealth has turned around since the Great Recession. The SIPP data show no change through 2011, and the PSID data show a continued fall, also through 2011. Data from the Consumer Finance Monthly, in contrast, show a recovery from its bottom point, but net worth in 2013 was still below its previous high. In contrast, data from the Financial Accounts of the United States indicate a full recovery in mean household wealth by the second guarter of 2013.

We therefore have to await the release of the next SCF, slated for late 2014, to reach any definitive conclusion on recent trends in household wealth. Whatever the results may be, we are obviously in the midst of a very volatile period, one of those rare moments of rapid and momentous change.

#### ADDITIONAL RESOURCES

Dunn, Lucia, and Randall Olsen, "U.S. Household Real Net Worth through the Great Recession and beyond: Have We Recovered?" *Economic Letters, forthcoming.* 

Pfeffer, Fabian T., Sheldon Danziger, and Robert F. Schoeni, "Wealth Disparities before and after the Great Recession," National Poverty Center Working Paper #13-05. University of Michigan, April 2013.

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