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# The Asset Price Melt-down and the Wealth of the Middle Class

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May 2013

## Report Abstract

After rising sharply through 2007, the collapse of the stock market and the sudden collapse in home prices took an immense toll on the assets of the middle class. This report summarizes what happened and why.

The most telling finding is that median wealth plummeted over the years 2007 to 2010, and by 2010 was at its lowest level since 1969. Moreover, inequality of net worth, after almost two decades of little movement, rose sharply between 2007 and 2010. Inequalities rose by income class, by race/ethnicity, and across age groups.

The middle class benefited from very rapid asset appreciation during the 2001-2007 period (6.0 percent per year). But the steep drop in asset prices during the recession, particularly housing, hit the middle class harder than more affluent Americans and was the main cause of increasing wealth inequality after 2007. Similar trends are found for racial and age inequalities. Blacks and Hispanics increased their net worth relative to whites during 2001-2007 as did young adults in relation to older Americans, mainly because so much of their assets were tied up in home ownership. But these gains were wiped out during the recession.

## Summary of major findings

The last two decades have witnessed some remarkable events in terms of personal wealth. After rising sharply through 2007, the collapse of the stock market and the sudden collapse in home prices took an immense toll on many Americans. What happened and why is an amazing story about the Great Recession and its repercussions.

- Median wealth plummeted over the years 2007 to 2010.
- Middle class debt exploded from 1983 to 2007, already creating a highly fragile middle class. Their situation worsened during the Great Recession. As a result inequality of net worth, after almost two decades of little movement, rose sharply between 2007 and 2010.
- The racial and ethnic disparity in wealth widened considerably in the years between 2007 and 2010. Blacks and especially Hispanics lost in net worth and net equity in their homes.
- Young households (under age 45) also were pummeled by the Great Recession, as their wealth declined sharply both in absolute terms and in comparison with older households.

## Data sources and methods

This study focuses mainly on how the middle class fared in terms of wealth over the years 2007 to 2010 during one of the sharpest declines in stock and real estate prices. I also investigate trends in wealth inequality, changes in the racial wealth gap, wealth differences by age, and trends in home ownership rates. The period covered spans the years from 1962 to 2010. The choice of years is dictated by the availability of survey data. By 2010, we are able to see what the fall-out was from the financial crisis and associated recession.

The primary data source is the *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. The high income supplement was selected from a sample derived from tax data from the IRS *Statistics of Income*. This second sample was designed to disproportionately select families that were likely to be relatively wealthy. Typically, about two thirds of the cases come from the representative sample and one third from the high-income supplement.<sup>1</sup>

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. Net worth is

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<sup>1</sup> Two other data sources are also used: the 1962 Survey of Financial Characteristics of Consumers, also conducted by the Federal Reserve Board, and the 1969 MESP file, a synthetic dataset based on the 1970 Census of Population with matched records from the 1969 Internal Revenue Survey Tax Model.

thus the difference in value between total assets and total liabilities or debt. Total assets are defined as the sum of (1) owner-occupied housing (2) other real estate (3) demand deposits (4) time and savings deposits, certificates of deposit, and money market accounts (5) government, corporate, and foreign bonds and other financial securities (6) the cash surrender value of life insurance plans (7) the cash surrender value of pension plans, including IRAs, Keogh, and 401(k) plans (8) corporate stock and mutual funds (9) net equity in unincorporated businesses; and (10) equity in trust funds. Total liabilities are the sum of (1) mortgage debt (2) consumer debt, and (3) other debt.

This measure reflects wealth as a store of value and therefore a source of potential consumption. In particular, consumer durables such as automobiles and furniture 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. Also excluded is the value of future Social Security benefits the family may receive upon retirement (usually referred to as "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 to families, they are not in their direct control and cannot be marketed.

## The housing value cycle

Nationally, median house prices were virtually the same in 2001 as in 1989 in real terms.<sup>2</sup> With real incomes rising, the home ownership rate shot up over this period from 62.8 percent in 1989 to 67.7 percent, according to data from the *Survey of Consumer Finances* (SCF). Then, even as the nation faced the 2001 recession (albeit a short one), house prices suddenly took off. The median sales price of existing one-family homes rose by 18 percent in real terms in just three years. However, from 2004 to 2007 housing prices slowed, with the median sales price advancing only 1.7 percent over these years in real terms. As such, over the years 2001 to 2007 real housing prices increased by 19 percent. The home ownership rate continued to expand, though at a somewhat slower rate, from 67.7 to 68.6 percent.

Then, the Great Recession and the associated financial crisis hit at the end of 2007 and asset prices plummeted. From 2007 to 2010, the median price of existing homes nose-dived by 24

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<sup>2</sup> The source for housing price data, unless otherwise indicated, is Table 935 of the *2009 Statistical Abstract*, US Bureau of the Census, available at [<http://www.census.gov/compendia/statab/>].

percent in real terms.<sup>3</sup> In some metropolitan areas such as Las Vegas, Phoenix, and Miami, median prices fell by half or more from their peak. Moreover, for the first time in 30 years, the share of households owning their own home fell, from 68.6 to 67.2 percent.

The housing price bubble was fueled in large part by a generous expansion of credit available for home purchases and re-financing. This took a number of forms. First, many home owners re-financed their primary mortgage. However, because of the rise in housing prices, these home owners increased the outstanding mortgage principal and thereby extracted equity from their homes. Second, many home owners took out second mortgages and home equity loans or increased the outstanding balances on these instruments. Third, among new home owners, credit requirements were softened, and so-called “no-doc” loans were issued requiring none or little in the way of income documentation. Many of these loans, in turn, were so-called “sub-prime” mortgages, characterized by excessively high interest rates and “balloon payments” at the expiration of the loan (that is, a non-zero amount due when the term of the loan was up). All told, average mortgage debt per household swelled by a staggering 59 percent in real terms between 2001 and 2007, and the value of outstanding mortgage loans as a share of total house value rose from 0.334 to 0.349, despite the 19 percent increase in real housing value.

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 171 percent between 1989 and 2001.<sup>4</sup> Stock ownership spread and by 2001 over half of U.S. households owned stock either directly or indirectly. The middle class was expanding its wealth holdings. The stock market peaked in 2000, dropped steeply from 2000 to 2003, recovered somewhat in 2004, and then rebounded from 2004 to 2007. Over the period from 2001 to 2007, the S&P 500 was up 6 percent in real terms. The roller coast stock market ride, however, took its toll on stock ownership with the share of households owning stock either directly or indirectly falling from 52 to 49 percent. Then came the Great Recession. Stock prices, based on the S&P 500 index, crashed from 2007 to 2009 and then partially recovered in 2010 for a net decline of 26 percent in real terms. The stock ownership rate continued to decline to 47 percent.

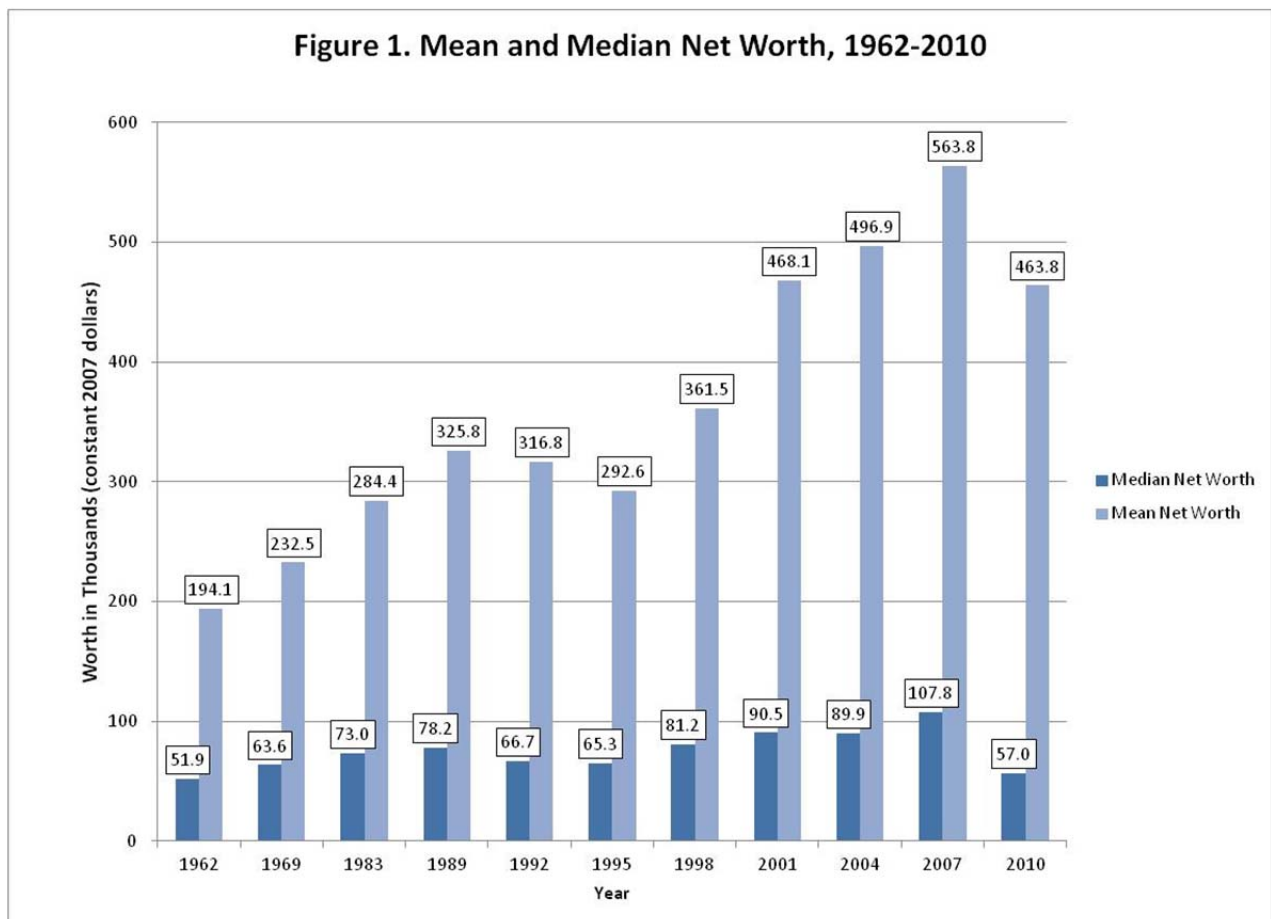
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<sup>3</sup> The source is National Association of Realtors, “Median Sales Price of Existing Single-Family Homes for Metropolitan Areas,” available at: <http://www.realtor.org/sites/default/files/reports/2012/embargoes/2012-q1-metro-home-prices-49bc10b1efdc1b8cc3eb66dbcdad55f7/metro-home-prices-q1-single-family-2012-05-09.pdf>.

<sup>4</sup> The source for stock price data is Table B-96 of the *Economic Report of the President, 2012*, available at <http://www.gpoaccess.gov/eop/tables12.html>.

There was also an explosion of consumer debt leading up to the Great Recession. Between 1989 and 2001, total consumer credit outstanding surged by 70 percent in real terms and then from 2001 to 2007 it rose by another 17 percent.<sup>5</sup> There were a number of factors responsible for this. First credit cards became more generally available for consumers. Second, credit standards were relaxed considerably, making more households eligible for credit cards. And third, credit limits were generously expanded by banks hoping to make profits out of increased fees and higher interest rates. Combined with the recession which forced families to borrow even for necessities, the relative indebtedness of families continued to rise from 2007 to 2010.

What have all these major transformations wrought in terms of the distribution of household wealth, particularly over the Great Recession? How have these changes affected individual racial/ethnic and age groups? This is the subject of the remainder of the paper.



<sup>5</sup> These figures are based on the Federal Reserve Board’s Flow of Funds data, Table B.100, available at: <http://www.federalreserve.gov/releases/Z1/>.

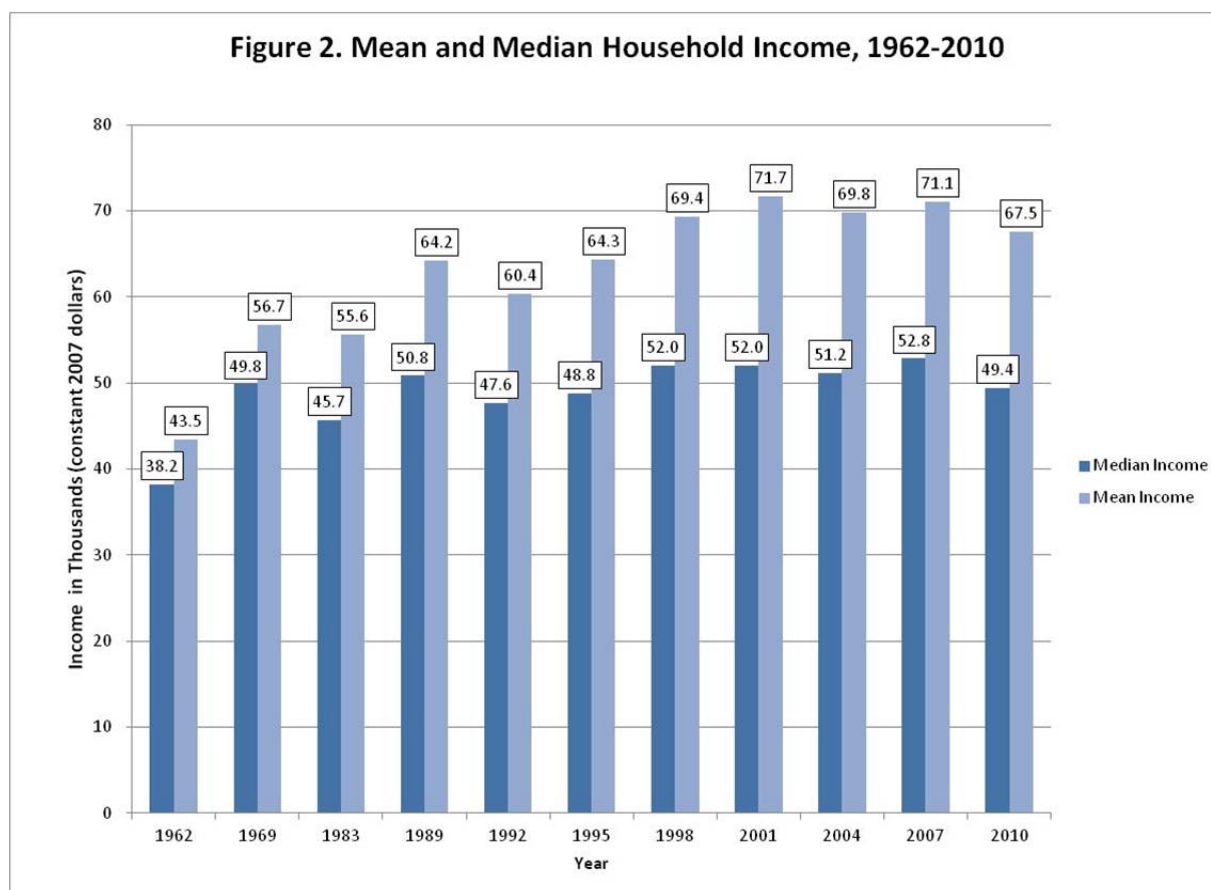
## Median wealth plummets over the late 2000s

Figure 1 shows a robust growth in wealth from 1962 to 2007. From 1962 to 1983, median wealth in real terms increased at an annual rate of 1.6 percent. Median wealth grew somewhat slower between 1983 and 1989 (1.1 percent) and 1.3 percent per year between 1989 and 2001. Then median wealth grew at a 2.9 percent breakneck pace between 2001 and 2007, a rate even faster than during the 1970s, 1980s, and 1990s, though comparable to the 1960s. Then the wealth boom collapsed. Between 2007 and 2010, median wealth plunged by a staggering 47 percent! Indeed, median wealth was actually lower in 2010 than in 1969 (in real terms). 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 grew even faster than *median* net worth, revealing a growing inequality in wealth holdings. Between 1962 and 1983, mean net worth grew vigorously at an annual rate of 1.8 percent and then at a 3.0 percent pace between 1989 and 2001. There was then a slight increase in wealth growth from 2001 to 2007 to 3.1 percent per year. This modest acceleration was due largely to the rapid increase in housing prices counterbalanced by the reduced growth in stock prices between 2001 and 2007, and to the fact that housing comprised a larger share of household wealth in 2007 (28 percent) than in 2001 (25 percent). Essentially, mean wealth grew about twice as fast as the median between 1983 and 2007, 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. In this case, both falling housing and stock prices were the main causes (see below). However, here, too, the relatively faster growth in mean wealth than median wealth (that is, the latter's more moderate decline) was coincident with rising wealth inequality.

Median household income in real terms, based on the *Current Population Survey* (CPS), advanced at a fairly solid pace from 1962 to 1983, at 0.85 percent per year (see Figure 2). Then, after gaining 11 percent between 1983 and 1989, it grew by only 2.3 percent from 1989 to 2001 and another 1.6 percent from 2001 to 2007. From 2007 to 2010, it fell off by 6.4 percent. This reduction was not nearly as great as that in median wealth. Mean income, after advancing at an annual rate of 1.2 percent from 1962 to 1983, 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.

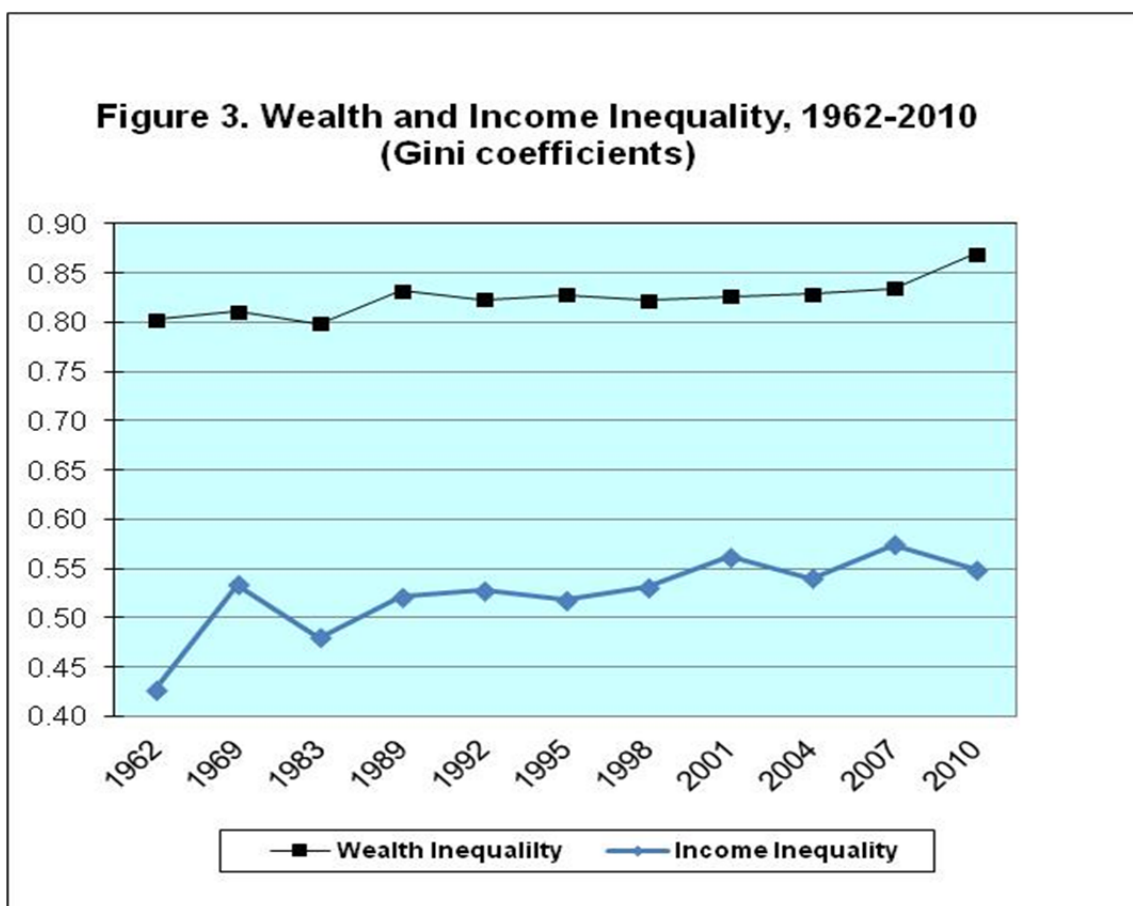


In sum, while median household income virtually stagnated for the average American household over the 1990s and 2000s, median net worth grew strongly over this period. From 2001 to 2007, mean and median income changed very little while mean and median net worth grew strongly. The Great Recession, on the other hand, saw a massive reduction in median net worth but much more modest declines in mean wealth and both median and mean income.

### Wealth inequality jumps in the late 2000s

Figure 3 reveals that wealth inequality in 1983 was quite close to its level in 1962, as measured by the Gini coefficient.<sup>6</sup> The higher the Gini, the more unequal the distribution. After rising between 1983 and 1989 from 0.80 to 0.83, this measure of inequality remained virtually unchanged from 1989 to 2007.

<sup>6</sup> This is not to say that there was no change in wealth inequality over these years. Indeed, Wolff (2002) documents a sharp reduction in wealth inequality from about 1969 to 1976 and an equally sharp rise from 1976 to 1983.



What was behind the sharp rise in wealth inequality in the 1980s? There are two principal factors accounting for changes in wealth concentration (see Section 7). The first is the change in income inequality. A rise in income inequality leads to an increase in wealth inequality as enriched households invest more in assets while stagnant incomes for everyone else keeps them on the asset-building sidelines. The second is the change in the ratio of stock prices to housing prices, since the wealthy hold a large share of their wealth in stocks and everyone else holds most of their assets in housing. As we shall see below, there was a huge increase in income inequality between 1983 and 1989, with the Gini coefficient rising by 0.041 points. Second, stock prices increased much faster than housing prices. The stock market boomed and the S&P 50 Index in real terms was up by 62 percent, whereas median home prices increased by a mere two percent in real terms. As a result, the ratio between the two climbed by 58 percent. Between 1989 and 2007, the Gini coefficient was virtually unchanged -- 0.832 in 1989 and 0.834 in 2007. In contrast, the years of the Great Recession saw a very sharp elevation in wealth inequality, with the Gini coefficient rising from 0.83 to 0.87.



Perhaps, somewhat surprisingly, the Great Recession witnessed a rather sharp contraction in income inequality. The Gini coefficient fell from 0.574 to 0.549. Property income and realized capital gains (which is included in the SCF definition of income), as well as corporate bonuses and the value of stock options, plummeted over these years, a process which explains the steep decline in the share of income going to the top percentile. Real wages, as noted above, actually rose over these years, though the unemployment rate also increased. As a result, the income of the middle class was down but not nearly as much in percentage terms as that of high income groups. In contrast, transfer income such as unemployment insurance rose, so that the bottom also did better in relative terms than the top. As a result, overall income inequality fell over the years 2006 to 2009. One of the puzzles we have to contend with is the fact wealth inequality rose sharply over the Great Recession while income inequality fell sharply. I will return to this question in Section 7 below.

## Household debt continues to remain high

There were some significant changes in the composition of household wealth among all households over the years 1983 to 2010. These shifts are shown in Table 1. First, the share of gross housing wealth in total assets increased from 30 percent in 1983 to 33 percent in 2007 and then fell to 31 percent in 2010. There are two main factors behind this – the home ownership rate and housing prices. The home ownership rate rose from 63 percent in 1983 to 69 percent in 2007 but then fell to 67 percent in 2010. Median house prices for existing homes rose by 19 percent in real terms between 2001 and 2007 but then plunged by 26 percent from 2007 to 2010. These two time trends explain a substantial share of the movement of the proportion of housing in gross assets.

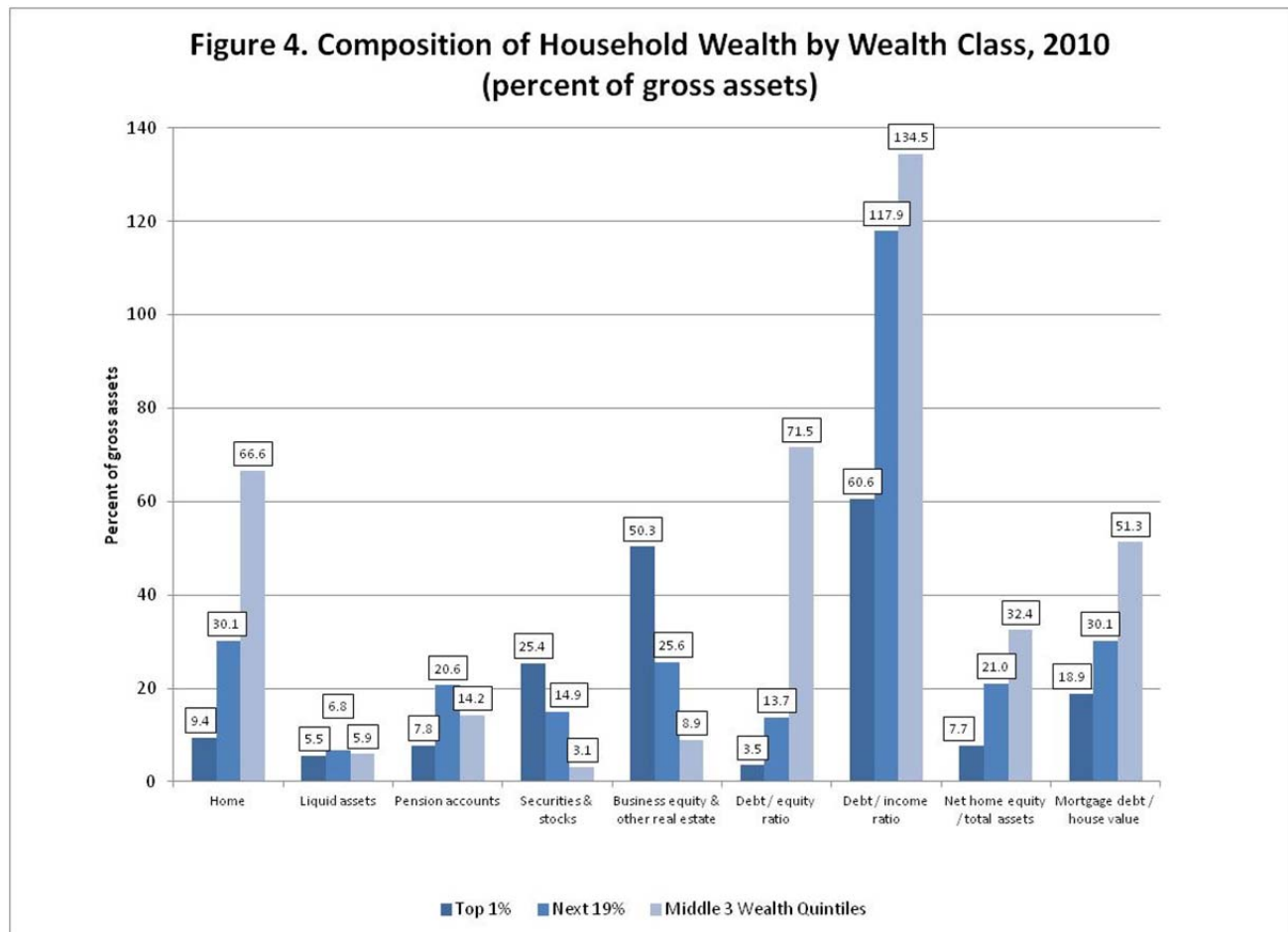
Second, net equity in owner-occupied housing as a share of total assets fell sharply from 24 percent in 1983 to 18 percent in 2010. The difference between gross and net housing as a share of total assets can be traced to the changing magnitude of mortgage debt on homeowner's property, which almost doubled from 21 percent in 1983 to 41 percent in 2010

Third, relative indebtedness increased, with the debt-equity ratio climbing from 0.15 in 1983 to 0.18 in 2007 and then to 0.21 in 2010. Likewise, the ratio of debt to total income surged from 0.68 in 1983 to 1.19 in 2007 and then to 1.27 in 2010. The large rise in *relative* indebtedness 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 Figures 1 and 2, both mean net worth and mean income fell over the three years. There was also a slight contraction of debt in constant dollars, with mortgage debt declining by 5.0 percent, other debt by 2.6 percent, and total debt by 4.4 percent. Thus, the steep

rise in the debt to equity and the debt to income ratios over the three years was entirely due to the reduction in wealth and income.

	Percent of gross assets				
	1983	1989	2001	2007	2010
<b>Wealth component</b>					
Principal residence	30.1	30.2	28.2	32.8	31.3
Other real estate <sup>a</sup>	14.9	14.0	9.8	11.3	11.8
Unincorporated business equity <sup>b</sup>	18.8	17.2	17.2	20.1	18.0
Liquid assets <sup>c</sup>	17.4	17.5	8.8	6.6	6.2
Pension accounts <sup>d</sup>	1.5	2.9	12.3	12.1	15.3
Financial securities <sup>e</sup>	4.2	3.4	2.3	1.5	1.8
Corporate stock & mutual funds	9.0	6.9	14.8	11.8	11.4
Net equity in personal trusts	2.6	3.1	4.8	2.3	2.4
Miscellaneous assets <sup>f</sup>	1.3	4.9	1.8	1.7	1.7
<b>Total assets</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Debt</b>					
Debt on principal residence	6.3	8.6	9.4	11.4	12.9
All other debt <sup>g</sup>	6.8	6.4	3.1	3.9	4.5
<b>Total debt</b>	<b>13.1</b>	<b>15.0</b>	<b>12.5</b>	<b>15.3</b>	<b>17.4</b>
<b>Selected ratios as percentages</b>					
Debt / equity ratio	15.1	17.6	14.3	18.1	21.0
Debt / income ratio	68.4	87.6	81.1	118.7	127.0
Net home equity / total assets <sup>h</sup>	23.8	21.6	18.8	21.4	18.4
Ratio of principal residence debt to house value	20.9	28.6	33.4	34.9	41.2
Stocks, directly or indirectly owned as a ratio to total assets <sup>i</sup>	11.3	10.2	24.5	16.8	17.8
<b>Source: Survey of Consumer Finance</b>					
<sup>a</sup> In 2001, 2004, and 2007, this equals the gross value of other residential real estate plus net equity in non-residential real estate.					
<sup>b</sup> Net equity in unincorporated farm and non-farm businesses and closely-held corporations.					
<sup>c</sup> Checking accounts, savings accounts, time deposits, money market funds, certificates of deposits, and cash surrender value of life insurance.					
<sup>d</sup> IRAs, Keogh plans, 401(k) plans, the accumulated value of defined contribution pension plans, and other retirement accounts.					
<sup>e</sup> Corporate bonds, government bonds (including savings bonds), open-market paper, and notes.					
<sup>f</sup> Gold and other precious metals, royalties, jewelry, antiques, furs, loans to friends and relatives, future contracts, and miscellaneous assets.					
<sup>g</sup> Mortgage debt on all real property except principal residence; credit card, installment, and other consumer debt.					
<sup>h</sup> Ratio of gross value of principal residence less mortgage debt on principal residence to total assets.					
<sup>i</sup> Includes direct ownership of stock shares and indirect ownership through mutual funds, trusts, and IRAs, Keogh plans, 401(k) plans, and other retirement accounts					

The tabulation in Table 1 provides a picture of the average holdings of all families in the economy, but there are marked class differences in how middle-class families and the rich invest their wealth. As shown in Figure 4, the wealthiest one percent of households invested over three quarters of their savings in investment real estate, businesses, corporate stock, and financial securities in 2010. Housing accounted for only 9 percent of their wealth, liquid assets 5 percent, and pensions account for 8 percent. The debt-equity ratio of these very wealthy households was only 0.03. Among the next richest 19 percent, housing comprised 30 percent of their total assets, liquid assets 7 percent, and pension assets 21 percent. Investment assets – non-home real estate, business equity, stocks, and bonds – made up 41 percent. Debt amounted to 14 percent of their net worth.



*In contrast, almost exactly two thirds of the assets of the middle three quintiles was invested in their home in 2010. However, 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 assets, and pension assets accounted for 87 percent of total*

assets, with the remainder in investment assets. Their mortgage debt amounted to a little more than half the value of their principal residences.

The rather staggering debt level of the middle class in 2010 raises the question of whether this is a recent phenomenon or whether it has been going on for some time. 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 to 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.

This new debt took two major forms. First, because housing prices went up, families were able to borrow against the now enhanced value of their homes by refinancing their mortgages and by taking out home equity loans. In fact, mortgage debt on owner-occupied housing (principal residence only) as a proportion of total assets climbed from 29 percent in 1983 to 47 percent in 2007, and home equity as a share of total assets fell from 44 to 35 percent over these years. Second, because of their increased availability, families ran up huge debt on their credit cards.

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 to income* ratio, falling to 1.35 in 2010. The sharp contraction of debt (down 25 percent from 2007-2010) was due to a combination of two factors. First, there was reduced credit availability from banks and other financial institutions as they curtailed new home equity loans and mortgage refinancings and reduced credit lines on credit cards. Second, household themselves reduced new borrowing and paid off existing debt as repayment difficulties rose as a fall-out of the recession. There was, in fact, a 23 percent reduction in mortgage debt as families paid down their outstanding balances, and an even larger drop in other debt of 32 percent as families paid off credit card balances and other forms of consumer debt.

## The role of leverage

Two apparent puzzles emerge from the preceding analysis. The first is the steep plunge in median net worth between 2007 and 2010 of 47 percent. This happened despite a moderate drop in median income of 6.4 percent in real terms and steep but less steep declines in housing and stock prices of 24 and 26 percent in real terms, respectively.

The second is the steep increase of wealth inequality of 0.035 Gini points. It is surprising that wealth inequality rose so sharply, given that income inequality dropped by 0.025 Gini points

and the ratio of stock prices to housing prices was essentially unchanged. In fact, as shown in Wolff (2002) (and noted above in Section 5), wealth inequality is positively related to both income inequality and the ratio of stock to house prices, since the former is heavily concentrated among the rich and the latter is the chief asset of the middle class.

Changes in median wealth and wealth inequality from 2007 to 2010 can be explained to a large extent 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.

### 1. An arithmetic example

A simple arithmetical example might illustrate the effects of leverage. Suppose for “rich” households, average assets are 50 and average debt is zero. In this case, net worth -- the difference between total assets and total debt -- is 50 (50-0). Also, suppose that asset prices rise by 20 percent. Then average net worth also rises by 20%. Now suppose for “middle class” families that average assets are also 50 but that average debt is 40 and asset prices once again rise by 20 percent. Then average net worth increases from a base of 10 (50 minus 40) to 20 (60 minus 40) or by *100 percent*. Thus, leverage amplifies the effects of asset price changes. However, the converse is also true. Suppose that asset prices decline by 20 percent. In the first case, net worth falls from 50 to 40 or by 20 percent. In the second case, net worth falls from 10 to 0 (40 minus 40) or by 100 percent. Thus, leverage can also magnify the effects of an asset price bust.

This example also illustrates how *differential leverage* can affect wealth inequality. Let us assume that the rich hold stocks and the middle class holds housing and the asset prices for both falls by 20 percent. Then, the ratio of net worth between the rich and the middle rises from 5.0 (50/10) to infinity (40/0)! Here it is apparent that even though housing and stock prices fall at the *same rate*, wealth inequality goes up. The reason is differential leverage between the two groups. If asset prices decline at the same rate, net worth decreases at an even greater rate for the middle class than the rich, since the debt-equity ratio is higher for the former than the latter.

### 2. Rates of return

Table 2 shows estimated average annual *real* rates of return for both gross assets and net worth over the period from 1983 to 2010. These results are based on the average portfolio composition over the period. The overall return on *gross assets* rose from 2.20 percent per year in

the 1983-1989 period to 3.25 percent per year in the 1989-2001 period and then to 3.34 percent per year in the 2001-2007 period before plummeting by 6.95 percent per year over the Great Recession. 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”. During this period, the value of financial assets alone, including stocks, bonds, and other securities, registered an annual rate loss of “only” 2.23 percent – about one-third the rate for gross assets -- because interest rates on corporate and foreign bonds continued to remain strong over these years. The value of pension accounts had a 2.46 percent annual loss, reflecting the mixture of bonds and stocks held in pension accounts.

	Percentage Return				
	1983-1989	1989-2001	2001-2007	2007-2010	1983-2010
<b>Gross Assets</b>					
<b>All Households</b>	2.20	3.25	3.34	-6.95	1.90
<b>Top 1 Percent</b>	3.00	3.88	3.86	-6.94	2.48
<b>Next 19 Percent</b>	2.17	3.33	3.19	-6.70	1.93
<b>Middle 3 Quintiles</b>	1.21	2.23	2.95	-7.52	1.08
<b>Net Worth</b>					
<b>All Households</b>	3.17	4.25	4.31	-7.39	2.73
<b>Top 1 Percent</b>	3.38	4.15	4.03	-7.10	2.70
<b>Next 19 Percent</b>	2.82	3.97	3.80	-7.35	2.42
<b>Middle 3 Quintiles</b>	3.15	4.55	5.95	-8.89	3.06
<b>Source: Survey of Consumer Finance</b>					
Households are classified into wealth class according to their net worth.					
Calculations are based on household portfolios averaged over the period.					
Miscellaneous assets are excluded from the calculation.					

The average annual rate of return on *net worth* among all households increased from 3.17 percent in the first period to 4.25 percent in the second and then to 4.31 percent in the third but then declined sharply by 7.39 percent in the last period. Note that the annual rates of return on net worth are uniformly higher – by about one percentage point – than those of 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 0.44 percent 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 0.83 percentage points higher than that on gross assets.

There are striking differences in returns by wealth class. The highest returns on gross assets were registered by the top one percent of wealth holders, followed by the next 19 percent and then by the middle three wealth quintiles. The one exception was the 2007-2010 period when the next 19 percent was first, followed by the top one percent and then 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 0.55 percentage points greater than that of the next 19 percent and 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 when asset prices were generally rising, the highest return was generally recorded by the middle quintiles (except for the 1983-1989 period when it had the second highest return) but in the 2007-2010 period, when asset prices were declining, the middle three quintiles registered the highest losses.. Differences in returns between the top one percent and the middle quintiles were quite substantial in some years. In the 2001-2007 period, the return on net worth was 5.95 percent per year for the latter and 4.03 percent per year for the former – a difference of 1.92 percentage points. Over the years 2007 to 2010 the annual loss on net worth was 7.10 percent for the top one percent and 8.89 percent for the middle quintiles – a differential of 1.78 percentage points. The spread in returns between the top one percent and the middle quintiles reflects the much higher leverage of the middle class. In 2010, for example, the debt-equity ratio of the middle quintiles was 0.72 while that of the top one percent was 0.04.

The huge negative rate of return on net worth of the middle three wealth quintiles was largely responsible for the precipitous drop in median net worth between 2007 and 2010. This factor, in turn, was due to the steep drop in asset prices, particularly housing, 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 (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 rates of return 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 over the Great Recession

Striking differences are found in the wealth holdings of specific racial and ethnic groups. In Table 3, 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% in 2007, a little less than two thirds that among whites.

<b>Table 3. Household Income and Wealth by Race and Ethnicity, 1983-2010 (selected years, mean values in thousands, 2010 dollars)</b>					
	<b>Non-Hispanic Whites</b>	<b>African-Americans</b>	<b>Hispanics</b>	<b>Ratio African American to White</b>	<b>Ratio Hispanic to White</b>
<b>Income</b>					
1982	68.2	36.7	41.2	0.54	0.60
1988	74.7	33.2	34.0	0.45	0.46
2000	93.4	45.3	46.3	0.48	0.50
2006	97.1	46.9	48.8	0.48	0.50
2009	86.8	41.4	49.1	0.48	0.57
<b>Net Worth</b>					
1983	332.3	62.5	54.0	0.19	0.16
1989	393.2	65.9	64.7	0.17	0.16
2001	573.5	81.7	98.6	0.14	0.17
2007	685.8	129.0	179.2	0.19	0.26
2010	593.3	84.5	90.3	0.14	0.15
<b>Percent Homeowners</b>					
1983	68.1	44.3	32.6	0.65	0.48
1989	69.3	41.7	39.8	0.60	0.57
2001	74.1	47.4	44.3	0.64	0.60
2007	74.8	48.6	49.2	0.65	0.66
2010	74.6	47.7	47.3	0.64	0.63

Source: Survey of Consumer Finance

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 in 1982 to 0.48 in 2006. 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. 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 and relative to white households stayed at 0.65.

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.

Hispanic households generally made considerable progress over the years 1983 to 2007, but not as much as whites. 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. 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 homeownership rate among Hispanic households surged from 33 to 44 percent between 1983 and 2001, and the ratio of homeownership rates between Hispanics and whites grew from 0.48 to 0.60. Between 2001 and 2007, the Hispanic homeownership rose once again, to 49 percent, ending that period at about the same rate as black households, and thus the Hispanic-white homeownership ratio rose sharply to 0.66.

The racial picture really 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 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 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. The ratio of mortgage debt to home value was also higher for Hispanics, 0.45, than for whites, 0.32. 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. There was also a drop in the home ownership rate among Hispanic households of 1.9 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.

## Wealth shifts from the young to the old

As shown in Table 4, there were notable shifts in the relative wealth holdings by age group between 1983 and 2007. The relative wealth of the youngest age group, under 35 years of age, declined from 21 percent of the overall mean in 1983 to 17 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 collapsed from 0.71 relative to the overall mean in 1983 to 0.58 in 2007. The relative wealth of the next youngest age group, 45-54, also declined while that of age group 55-64 stayed about the same. The relative net worth of age group 65-74 was also down a bit while that of age group 75 and over, gained some ground. Changes in homeownership rates tend to mirror these trends. The statistics point to a relative shifting of net worth and home ownership away from younger towards older households between 1983 and 2007.

**Table 4. Age-Wealth Profiles and Homeownership Rates by Age, 1983-2010**

	1983	1989	1992	1995	1998	2001	2004	2007	2010
<b>Mean Net Worth (Ratio to Overall Mean)</b>									
Under 35	0.21	0.29	0.20	0.16	0.22	0.19	0.14	0.17	0.10
35-44	0.71	0.72	0.71	0.65	0.68	0.64	0.65	0.58	0.41
45-54	1.53	1.50	1.42	1.39	1.27	1.25	1.21	1.19	1.14
55-64	1.67	1.58	1.82	1.81	1.91	1.86	1.91	1.69	1.81
65-74	1.93	1.61	1.59	1.71	1.68	1.72	1.57	1.86	1.74
75 & over	1.05	1.26	1.20	1.32	1.12	1.20	1.19	1.16	1.36
<b>Percent Homeowners</b>									
All ages	63.4	62.8	64.1	64.7	66.3	67.7	69.1	68.6	67.2
Under 35	38.7	36.3	36.8	37.9	39.2	40.2	41.5	40.8	37.5
35-44	68.4	64.1	64.4	64.7	66.7	67.6	68.6	66.1	63.8
45-54	78.2	75.1	75.5	75.4	74.5	76.1	77.3	77.3	75.2
55-64	77.0	79.2	77.9	82.3	80.6	83.2	79.1	80.9	78.1
65-74	78.3	78.1	78.8	79.4	81.7	82.5	81.2	85.5	82.5
75 & over	69.4	70.2	78.1	72.5	76.9	76.2	85.1	77.0	81.3

Source: Survey of Consumer Finance

Households are classified according to the age of the householder.

Changes in relative wealth were even more dramatic from 2007 to 2010. The relative wealth of the under 35 age group plummeted from 0.17 to 0.10 and that of age group 35-44 from 0.58 to 0.41, while that of age group 45-54 fell somewhat from 1.19 to 1.14. In actual (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. Although the real wealth of older households also declined after 2007, the decline was much smaller. As a result, the relative net worth of age group 55-64 increased sharply from 1.69 to 1.81, as did that of the oldest age group from 1.16 to 1.36, though the relative wealth of age group 65 to 74 declined from 1.86 to 1.74. Home ownership rates fell for all age groups from 2007 to 2010 (except the very oldest) but the percentage point decline was greatest for the youngest age group.

Changes in the relative wealth position of different age groups depend in large measure on relative asset price movements and differences in asset composition. Homes comprised over half the value of total assets for age group 35 and under in 2007, and the share fell off with age to about a quarter for age group 55-64 and then rose to 30 percent for the oldest age group. There was 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, as well as the debt to income ratio from 1.68 to 0.30 and mortgage debt as a

share of house value from 0.65 to 0.05. As a result of the latter, net home equity as a proportion of total assets rose from 19 to 29 percent from the youngest to oldest age group. 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.

Younger households benefit relatively when housing prices rise and inflation is strong while older households benefit relatively from rising stock prices. Changes in the relative net worth position of age groups over the 1983 to 2007 period were thus largely due to these differential asset price movements. In particular, as with minority households, the higher leverage of younger age groups made them vulnerable when asset prices, particularly housing prices, declined. The steep decline in house prices from 2007 to 2010 thus led to a relatively steeper loss in home equity for the youngest age group (59 percent) than overall (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, their ratio of mortgage debt to house value was 0.51, and their share of housing in gross assets was 0.44, all much higher than the averages 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 fall off in their relative net worth.

## Conclusion

With stock prices falling somewhat faster than housing prices from 2007 to 2010, it would seem to be the case that households with portfolios more heavily invested in stocks would have been hit harder than households folks invested mainly in housing. And if richer folks and older households had stock-heavy portfolios, it would seem that they should have taken a bigger hit in their asset positions after 2007? This was clearly not the case. The answer lies in the higher leverage ratios for non-rich, minority, and younger households.

The key to understanding the collapse of middle class assets over the Great Recession is, indeed, their high degree of leverage and the high concentration of assets in their home.

The large spread in rates of return on net worth between the middle three wealth quintiles and the top quintile (over a point and a half lower) also largely explains why wealth inequality increased steeply from 2007 to 2010 despite the 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. This factor is also reflected in the fact that median wealth dropped much more in percentage terms than mean wealth over the Great Recession.

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. 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 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.

The real question is what might happen now as the Great Recession recedes. Will homeownership rates for blacks, Hispanics, and young households begin to rise again? Will home equity values increase so that those who have housing-based portfolios once again see their net asset positions rising? Or will housing values stabilize while stock market prices rise, leading to even greater wealth inequality despite an economic recovery? Stay tuned!

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