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# The impact of the recession on the wealth of older immigrant and native households in the United States

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## Abstract

Using the 2006 and 2010 Health and Retirement Study, we explore how the recent recession impacted the wealth holding and retirement plans of older households in the United States. Of particular interest to us is whether the impact on household asset *ownership*, asset *wealth* and household *retirement* behavior varied with the nativity of the household and its standing in the wealth distribution prior to the onset of the recession. We find that the so-called Great Recession made a significant dent on the portfolios of older American households by eroding the value of specific assets to the point of delaying their planned retirement. Furthermore, its impacts were unevenly distributed across demographic and economic groups, with mixed and immigrant households in the middle and top wealth quartiles prior to the recession enduring significantly larger wealth losses than natives due, primarily, to their greater losses in primary housing ownership and primary housing values.

**JEL codes:** D31; J26

**Keywords:** Great recession; Wealth; Older households; Immigrants; Natives

## 1 Introduction

We examine how the 2008–2009 recession has impacted the wealth and wealth composition of older immigrant and native households in the United States. There are a number of reasons for undertaking this inquiry, and we seek to answer a number of interrelated questions. First, since the older population is a sizeable and ever growing demographic group with limited time to recover from economic shocks like the one recently experienced, we seek to understand how the recession impacted this demographic group overall. Understanding if and how the economic downturn impacted the wealth of this segment of the population can help us prepare for subsequent generations of older households that can be subject to similar shocks.

Second, we analyze whether there is a differential impact by nativity. Immigrants' and natives' portfolios are likely to differ in substantial ways due to various economic, social and cultural factors. For example, due to differences in labor market opportunities or risk preferences, immigrants may be more or less likely to own businesses, hold certain types of financial assets or invest in non-owner occupied housing than natives. As such, immigrants and natives might have either responded to or been impacted by

the 2008–2009 economic shock in different ways. By examining the impact of the recession by group, we may gain insights into whether different approaches to asset accumulation are better or worse suited to withstanding shocks like the Great Recession as different portfolio mixes may have either accentuated or attenuated the economic shock following the downturn.

Third, we examine whether different wealth categories did better or worse following the economic contraction. Since poorer and richer households face different constraints that result in differences in portfolio holdings, poorer and richer households may have been impacted differently due to the recession. We examine these differences, continuing to take nativity into consideration.

Using data from the 2006 and 2010 waves of the *Health and Retirement Study* (HRS), a longitudinal study of U.S. households aged 50 and above, we estimate the impact that the recession had on the overall wealth and asset accumulation strategies of older American households. In our analysis, we distinguish among three categories of households according to their nativity—native, immigrant and mixed households. Native households are households in which the household head and the spouse are both native-born. Immigrant households are similarly defined as those households where the household head and spouse are both foreign-born. Finally, mixed households are households in which the household head and the spouse differ in their nativity, with one being native-born and the other foreign-born. Sometimes these households are considered to be ‘partially’ assimilated. Do “partially assimilated” households behave more like native or immigrant households in their asset compositions? If the wealth accumulation patterns of households differ by nativity and the recession impacted the ownership rates and values of various assets differently, the downturn may have had different impacts on these various groups of households. Furthermore, the declines in asset values may have been particularly harmful among groups with inadequate safety nets. Due to their undocumented status (now or in the past), shorter work histories or differences in employment patterns, immigrant households might be less likely to qualify for old age social security benefits than natives. And, if they qualify, their payouts may be lower. If that is the case, immigrants could end up being exposed to significantly greater economic and well-being hurdles.

We find that the so-called Great Recession has made a significant dent on the portfolios of older American households by eroding the value of specific assets to the point of impacting their retirement strategies, as noted by other studies in the literature. Furthermore, its impacts were unevenly distributed across demographic and economic groups, with mixed and immigrant households in the middle and top wealth quartiles prior to the recession enduring significantly larger wealth losses than natives due, primarily, to their greater losses in primary housing ownership and primary housing values.

## 2 Background

Two strands of literature are relevant to our inquiry. The first line of research encompasses studies analyzing how recessions impact asset holdings and retirement decisions of older households, whereas the second line of research involves a narrower literature examining the differential asset accumulation pattern of immigrants and natives.

Within the first strand of literature, some studies have focused on the impact of the Great Recession on wealth, its overall distribution and the changing role of some of its

components. For instance, Bricker et al. (2011) use data from a panel of households participating in the 2007 Survey of Consumer Finances (SCF) who were interviewed again in 2009 and document changes in their wealth. The authors note that wealth declines were due, primarily, to changes in the value of their assets and not necessarily in their ownership of such assets. Also using data from the SCF, Smeeding (2012) reports how wealth inequality increased during the past recession. The increase is attributed to the fact that, despite enduring large wealth losses, the wealthy recovered quickly as the financial markets improved. However, the middle class experienced losses in housing values from which they did not recover. Wolff (2012) moves one step further and documents how the recession increased racial and ethnic disparity in wealth holding, whereas Gassoumis (2012) examines wealth disparities by age. Specifically, using data from the Survey of Income and Program Participation (SIPP), he concludes that wealth losses were particularly acute among older Hispanics, who lost up to 30 percent of their wealth due to significant reductions in their housing values. Focusing on the United Kingdom, Searle (2011) documents the changing role of housing wealth from an appreciating investment asset to collateral that households relied upon to accumulate debt during the past recession. And Banks et al. (2012) explore how the significant experienced by older households in England affected their spending and expected future bequests. Neither spending nor expected bequests responded by much to asset value erosion.

Also within this first strand of literature, there are some studies exploring the effects of the Great Recession on retirement behavior. One possibility that has been raised is that older Americans may have sped up their retirement plans due to financial difficulties faced by the firms that were employing them, resulting in job cuts, reduced profit sharing and hours of work. The need to keep up with mortgage payments and other responsibilities may have caused individuals to choose commencing social security benefits at age 62 or to take an early retirement incentive with its longer-run implication of reduced retirement payouts.<sup>1</sup> In this vein, using 30 years of Current Population Survey data, the 2000 Census and subsequent American Community Survey data, Coile and Levin (2011) find that unfavorable labor market conditions induce earlier retirements for those aged 62 and above.

Alternatively, individuals may have delayed retirement due to the impact of the financial crisis on financial asset values (in IRAs, Keogh plans and other retirement assets). Using simulation models, Gustman et al. (2010) suggest that early boomers delayed their retirement by 1.5 months on average using data on that cohort from the Health and Retirement Study (HRS). Similarly, Goda et al. (2011) use the 2006 and 2008 waves of the HRS to show that reductions in the S&P index increased the expectation to remain in the workforce at 62. Nonetheless, much of the change in reported delays remains unaccounted for in their analysis. McFall (2011) also reports delays in retirement plans using data from the Cognitive Economics study. She argues that the 2008 stock and real estate crashes were unanticipated, therefore treatable as a negative wealth shock. Using a quasi-experimental approach, she concludes that individuals responded to the shock by delaying retirement by a small amount. A third possible outcome is that the Great Recession had no impact on retirement plans—as found by Crawford (2011) in the United Kingdom. Bosworth and Burtless (2010) and Bosworth (2012) try to reconcile the distinct findings on the impact that recessions appear to have on

retirement decisions. Using data from the Panel Study of Income Dynamics and the Survey of Consumer Finances, they show how retirement decisions are influenced by labor market conditions and household wealth during a recession, although in opposite directions. Still, it is interesting how studies that specifically examine the past recession report retirement delays, while the study that uses information from a longer time period finds that retirement is hastened by recessions. The difference in patterns suggests that this recent recession was somewhat different in its outcome.

The second strand of literature relevant to our study relates to studies examining differences in saving and asset accumulation by nativity. A number of early papers speculated on the saving and wealth accumulation behavior of foreign-born households relative to that of native households (e.g., Galor and Stark 1990 and Dustmann 1997) and favored the idea that immigrants might have a greater propensity to accumulate assets. The first papers to empirically test this proposition actually found that the saving and asset accumulation of immigrants tended to fall short of those of the native born (Carroll et al. 1994; Carroll et al. 1999 and Amuedo-Dorantes and Pozo 2002). This empirical finding was corroborated by Cobb-Clark and Hildebrand (2006) in their study of U.S. households' wealth holdings; by Sevak and Schmidt (2007), who find that U.S. immigrants enter retirement at a significant financial disadvantage relative to native born households with similar characteristics; by Osili and Paulson (2009), who find that U.S. immigrants hold one fourth the total wealth of the native born; and by Mathä et al. (2011), who find similar asset disparities for immigrant versus native households in Germany, Italy and Luxembourg.

Digging a little deeper in search of explanations for the observed differential in wealth holdings, Sevak and Schmidt (2007) use data from the 1998 through 2004 Health and Retirement Study and find that immigrants have lower expected Social Security benefits,<sup>2</sup> are less likely to have private pension coverage, and are less likely to report homeownership than natives. Using data from the Survey of Income and Program Participation from 1996 through 2000, Osili and Paulson (2008) find a financial services' participation gap between immigrants and natives. In particular, 20 percent of natives owned stock, while only 8.6 percent of immigrants did. Similarly, 55 percent of natives reported ownership of a savings account compared to 40 percent of immigrants. Since, conditional on owning certain assets, the native-immigrant differential is smaller, they concluded that the participation gap in various categories is an important contributor to overall asset disparities. Additionally, Osili and Paulson arrived at several other interesting conclusions—including the finding that the financial wealth gap between natives and immigrants is larger than the home equity gap. As such, it appears as if immigrants have a preference for real assets over financial assets.<sup>3</sup>

Immigrant preference for real assets over financial assets has also been observed in Australia by Cobb-Clark and Hildebrand (2009). While they also find that immigrant couples hold substantially less wealth than do native couples, they find no wealth gap between native and mixed couples (with one partner foreign-born and the other native-born). Understanding whether there is a wealth gap is important since, in most cases, mixed households are simply lumped in together along with immigrant or native households depending on the nativity of the household head. Still focusing on Australia, Cobb-Clark and Sinning (2009) find evidence of a large native-immigrant

housing-appreciation gap. Housing values appreciated by 59.4 percent between 2001 and 2006 for natives—much more than the 41.7 percent appreciation enjoyed by immigrants. It remains to be seen if this result is generalizable to the United States.

In sum, it is well-accepted that the 2008–2009 recession, from a historical perspective, has been fairly substantial. It is also amply clear that immigrant, mixed and native households differ in their wealth accumulation patterns. If the downturn affected asset classes differently, the recession may have had differential impacts on immigrant, native and mixed households. This is the hypothesis we test in what follows.

### 3 Data and some descriptive statistics

We use data from the 2006 and 2010 waves of the *Health and Retirement Study* (HRS), a longitudinal study of U.S. households aged 50 and above, to assess how older-aged households fared during the Great Recession according to their nativity. Since its launch in 1992, the HRS has collected information on a broad range of topics—including work, income, wealth, retirement and health—every two years from various cohorts.<sup>4</sup> The 2006 wave provides us with a *pre-recession* baseline, whereas the 2010 wave is ideal for assessing how households' wealth fared *post-recession*. Our sample includes information on five cohorts: (1) Initial HRS cohort, born 1931 to 1941. This cohort was first interviewed in 1992 and subsequently every two years; (2) AHEAD cohort, born before 1924, initially a separate study (The Study of Assets and Health Dynamics among the Oldest Old). This cohort was first interviewed in 1993, next in 1995 and 1998, and subsequently every two years; (3) Children of Depression (CODA), born 1924 to 1930; (4) War Baby (WB) cohort, born 1942 to 1947 cohort, who were first interviewed in 1998 and subsequently every two years; and the (5) Early Baby Boomer (EBB) cohort, born 1948 to 1953, was first interviewed in 2004 and every two years thereafter. In addition to respondents from eligible birth years, the survey interviewed the spouse (or partner) of the respondent, regardless of their age. All asset and wealth values are expressed in 2010 dollars.

Table 1 provides general characteristics for native, mixed and immigrant households in 2006. Since mixed households are by definition couples, we limit our investigation to couples in order to make valid comparisons across groups. That is, single headed households are excluded from the study. A few differences across the three categories of households are worth noting. For instance, immigrant households are primarily Hispanic, display lower educational attainment and are the least likely to receive income from an employer pension plan. Mixed households receive the largest amounts of public aid, as captured by welfare, food stamps or veterans' benefits. The data also reveal that native households are the most likely to collect income from an employer pension plan or annuity and tend to receive the largest average levels of retirement social security income. Perhaps that helps explain why native households generally plan on retiring earlier than mixed and immigrant couples. In sum, older native, immigrant and mixed households differ with regards to their demographic characteristics and safety nets. Hence, their wealth composition and responses to the 2008 economic shock are likely to diverge.

In that regard, Table 2 provides evidence of the distinct composition of wealth exhibited by households according to nativity prior to the economic downturn. In measuring net worth, we sum financial and housing assets, while subtracting debt.<sup>5</sup> We include

**Table 1 Sample characteristics for native, mixed and immigrant households in 2006**

<b>Household and household head's characteristics</b>	<b>Native households</b>	<b>Mixed households</b>	<b>Immigrant households</b>
<b><i>Household Head's Characteristics:</i></b>			
Male	55.9%	59.0%	60.3%
White	86.3%	80.8%	61.6%
Black	11.0%	7.0%	9.3%
Other Race	2.7%	12.3%	29.1%
Hispanic	3.9%	24.5%	61.4%
HS or less	51.3%	46.5%	66.9%
More than HS	48.7%	53.5%	33.1%
<b><i>Age:</i></b>			
55 and Younger	13.6%	17.8%	19.8%
56 to 60	13.6%	14.8%	10.8%
61 to 65	17.3%	18.3%	15.1%
66 to 70	23.8%	25.3%	28.8%
71 to 80	25.1%	16.5%	21.7%
81 and Older	6.7%	7.5%	3.7%
<i>Time in the United States</i>	-	35	36
<b><i>Household Characteristics:</i></b>			
Couple	100.0%	100.0%	100.0%
No. of HH Residents	2	3	3
No. of Household Children	3	3	4
<b><i>Non-labor Income:</i></b>			
Any Income from Employer Pension Plans or Annuities	43.9%	35.5%	22.2%
Income from Employer Pension Plans or Annuities	23,922	23,577	18,348
Any Capital Income	75.7%	67.5%	49.2%
Capital Income	28,025	27,231	33,403
Social Security Income	19,921	18,437	16,884
Unemployment Insurance and Workers' Compensation	5,826	5,703	5,970
Welfare, Food Stamps, Veteran Benefits	13,687	15,080	4,355
<i>Planned Retirement Year</i>	2013	2014	2015
<b><i>Geographic Location:</i></b>			
New England	3.8%	4.3%	3.7%
Mid Atlantic	9.7%	12.0%	22.0%
East North Central	18.4%	10.0%	5.6%
West North Central	10.4%	3.8%	0.5%
East South Central	6.8%	1.0%	0.3%
West South Central	9.9%	14.3%	14.0%
Mountain States	6.4%	7.0%	3.4%
Pacific States	11.4%	23.3%	28.3%
South Atlantic	23.2%	24.5%	21.7%
No. of Households in 2006	4,634	400	378

**Table 2 Balance sheet for households in 2006**

Asset category	Percent of HHs with that asset	Mean holding	Share of total wealth	Values conditional on positive holding	
				Mean	Median
<b>Native Households</b>					
Financial Assets	94.3%	191,818	25.4%	240,860	48,659
Stocks	33.6%	102,223	13.5%	304,241	75,691
Bank Accounts	90.5%	33,087	4.4%	36,575	10,813
CDs	29.1%	20,843	2.8%	71,600	27,033
Bonds	7.7%	17,898	2.4%	232,319	48,659
Other Financial Wealth	19.2%	22,382	3.0%	116,275	25,951
Home Equity (Primary home)	90.3%	215,056	28.5%	245,183	153,545
Home Equity (Secondary home)	18.5%	36,981	4.9%	199,502	70,285
Home Equity (Other real estate)	19.3%	85,002	11.2%	439,621	108,130
Non-Mortgage Debt	31.3%	4,614	0.6%	14,747	5,407
Business Assets	13.0%	83,900	11.1%	645,834	216,260
Vehicle Assets	95.4%	22,632	3.0%	23,728	16,220
IRAs & Keoghs	50.1%	120,313	15.9%	240,212	86,504
<i>Net Worth</i>	99.5%	755,703	100.0%	780,054	327,634
<b>Mixed Households</b>					
Financial Assets	92.3%	174,643	22.3%	238,787	54,065
Stocks	30.3%	72,570	9.3%	239,902	108,130
Bank Accounts	87.3%	63,807	8.2%	73,131	10,813
CDs	24.5%	19,576	2.5%	79,903	27,033
Bonds	7.3%	8,909	1.1%	122,884	54,065
Other Financial Wealth	17.3%	16,832	2.2%	97,575	34,602
Home Equity (Primary Home)	87.0%	305,316	39.0%	356,491	216,260
Home Equity (Secondary home)	15.5%	33,779	4.3%	217,932	135,163
Home Equity (Other real estate)	17.8%	79,224	10.1%	446,335	270,325
Non-Mortgage Debt	33.5%	7,052	0.9%	21,051	6,488
Business Assets	8.8%	66,200	8.5%	756,572	162,195
Vehicle Assets	92.0%	17,883	2.3%	19,438	12,976
IRAs & Keoghs	43.0%	105,407	13.5%	245,133	85,963
<i>Net Worth</i>	99.0%	782,453	100.0%	832,191	392,512
<b>Immigrant Households</b>					
Financial Assets	78.6%	154,584	30.5%	256,269	18,382
Stocks	15.6%	113,697	22.4%	728,430	162,195
Bank Accounts	73.0%	22,692	4.5%	31,078	5,407
CDs	13.5%	10,568	2.1%	72,640	35,142
Bonds	3.7%	2,690	0.5%	72,640	35,142
Other Financial Wealth	11.1%	7,968	1.6%	71,713	26,492
Home Equity (Primary Home)	74.1%	197,593	39.0%	277,966	216,260
Home Equity (Secondary home)	14.6%	38,182	7.5%	262,415	216,260
Home Equity (Other real estate)	14.0%	47,167	9.3%	336,398	162,195
Non-Mortgage Debt	32.8%	3,031	0.6%	9,240	3,244
Business Assets	5.3%	24,643	4.9%	465,750	151,382
Vehicle Assets	82.3%	11,514	2.3%	13,994	8,650
IRAs & Keoghs	20.6%	33,183	6.5%	160,811	68,122
<i>Net Worth</i>	94.4%	506,866	100.0%	561,790	260,864

financial assets (current value of stock holdings, bank accounts, CDs, bonds and other financial wealth), equity in three categories of real estate (primary home, secondary home and other real estate), business holdings, vehicles and retirement saving accounts (such as IRAs and Keogh plans). Non-mortgage debt is then subtracted to obtain our measure of net worth.<sup>6</sup> Native households are more likely to own financial assets and individual tax-deferred retirement saving accounts (such as IRAs and Keogh plans) than immigrant households, with mixed households sandwiched between the two. Additionally, 13 percent of native households held business assets in 2006, relative to 5 percent of immigrant households and 9 percent of mixed households. Finally, while native and mixed households are most likely to claim equity in primary homes, immigrant and mixed households hold a larger share of their wealth (55.8 and 53.4 percent respectively after adding all real estate equity) in real estate assets in comparison to natives (44.6 percent). Hence, the finding in the literature that immigrants are more prone to holding real assets is borne out by our data.

Overall, it is probably fair to make two generalizations concerning wealth holding across the different categories of households. First, native households' distribution of wealth holdings across the different categories of assets is more uniform. In contrast, immigrants' asset holdings are more "lumpy", with bulk holdings in stocks and housing equity assets. The second generalization is that, in many respects, mixed households more closely resemble native households, (e.g., public aid receipts, household size and social security income). However, in other respects, they are similar to immigrant households (e.g., real estate holdings as a percentage of total wealth).

Asset accumulation patterns by nativity also differ with the households' standing in the wealth distribution. Table 10 in the Appendix displays the value of various asset categories at different points along the wealth distribution. Inequality in wealth is quite stark, seemingly largest for non-native households, and emphasizes the importance of also examining the differential impact of the downturn on mean wealth by wealth quartiles. In sum, the figures in Tables 1, 2 and 10 in the Appendix reveal important differences in the portfolio composition of older households by nativity and across the wealth distribution, which should be taken into account when examining how the past recession impacted household's wealth, portfolio composition and retirement behavior. In that regard, Table 3 reports on changes in asset holdings by the three types of households being examined from 2006 to 2010. On average, households reduced their propensity to hold almost every single type of asset over the 4-year period. Nevertheless, there are a few exceptions. Ownership of bonds, secondary homes, IRAs and Keogh plans increased among mixed households. Likewise, immigrants became more likely to own primary homes, IRAs and Keogh plans. Overall, however, there were non-negligible reductions in mean and median values for most assets between 2006 and 2010. Net worth fell by \$179,000 for natives, by \$230,000 for mixed households and by \$12,000 for immigrant households. To put these figures in perspective, these reductions amount to approximately 24 percent of the total net worth of native households in 2006, about 29 percent of that of mixed households and just 2 percent of the total net worth of immigrant households prior to the recession. Hence, the economic downturn clearly dented the nest egg of the vast majority of older Americans, although not to the same extent.



**Table 3 Change in households' asset holdings between 2006 and 2010**

Asset category	Change in the % of HHS holding the asset	Conditional on positive holding	
		Mean difference	Median difference
<b>Native Households</b>			
Financial Assets	-1.2%	-34,034	2,341
Stocks	-2.3%	-48,815	4,309
Bank Accounts	-2.5%	5,922	1,187
CDs	-5.3%	7,372	2,967
Bonds	0.3%	-92,792	-2,659
Other Financial Wealth	1.2%	-30,970	-951
Home Equity (Primary Home)	-0.5%	-54,715	-20,045
Home Equity (Secondary home)	0.5%	-64,062	-10,285
Home Equity (Other real estate)	-2.8%	-151,599	-8,130
Non-Mortgage Debt	2.4%	1,210	593
Business Assets	-0.6%	-156,420	-36,260
Vehicle Assets	-2.4%	-2,605	-1,220
IRAs & Keoghs	-0.3%	-44,663	3,496
<i>Net Worth</i>	-0.1%	-178,913	-33,634
<b>Mixed Households</b>			
Financial Assets	-7.1%	-21,649	18,435
Stocks	-0.1%	-22,939	-8,130
Bank Accounts	-9.1%	-21,449	-313
CDs	-5.8%	-13,124	-2,033
Bonds	1.1%	74,421	-4,065
Other Financial Wealth	3.1%	-12,095	5,398
Home Equity (Primary Home)	-2.4%	-125,542	-46,260
Home Equity (Secondary home)	1.8%	-77,851	-47,663
Home Equity (Other real estate)	-0.8%	34,617	-170,325
Non-Mortgage Debt	-1.1%	-6,608	-238
Business Assets	-2.4%	-360,425	37,805
Vehicle Assets	-5.1%	-325	-976
IRAs & Keoghs	3.6%	-58,457	-4,963
<i>Net Worth</i>	-1.2%	-229,650	-111,512
<b>Immigrant Households</b>			
Financial Assets	-11.6%	35,674	12,571
Stocks	-1.4%	-187,285	-82,195
Bank Accounts	-18.2%	17,642	593
CDs	-2.9%	17,376	11,858
Bonds	-0.7%	180,460	49,858
Other Financial Wealth	0.4%	101,472	3,508
Home Equity (Primary Home)	1.1%	-54,592	-66,260
Home Equity (Secondary home)	-0.4%	-36,166	-101,260
Home Equity (Other real estate)	-4.9%	-44,005	15,305
Non-Mortgage Debt	-5.2%	4,007	2,756
Business Assets	-1.7%	1,190,533	148,618
Vehicle Assets	-15.0%	2,077	-1,650
IRAs & Keoghs	2.4%	96,006	27,378
<i>Net Worth</i>	-3.8%	11,924	-87,364

#### 4 Methodology

Our primary aim is to learn how the 2008–2009 recession impacted the wealth, wealth composition and retirement plans of older-aged households, whereas our secondary aim is to discern systematic differences in the aforementioned impacts among native, immigrant and mixed households. A natural way to address both goals is to pool the two waves of HRS data and estimate the following model via OLS:

$$y_{it} = \delta_0 + \delta_1 2010_t + \beta_1 I_{it} + \beta_2 M_{it} + \gamma_1 (I_{it} * 2010_t) + \gamma_2 (M_{it} * 2010_t) + Z_{it} \theta + a_i + u_{it}, \quad (1)$$

where  $y_{it}$  is the logarithm of net total wealth; the likelihood of owning each type of asset included in the calculation of net total wealth; the logarithm of the individual categories of asset values; and planned retirement year.<sup>7</sup> The variable  $2010_t$  is a dummy indicative of the *post*-recession period, whereas  $I_{it}$  and  $M_{it}$  are dummies indicative of whether the household is an immigrant or mixed household in a particular year. The year dummy is interacted with the dummies specifying the household's nativity to provide a difference-in-difference estimate of how the downturn may have impacted native, mixed and immigrant households differently. Equation (1) also includes a variety of time-varying household characteristics captured by  $Z_{it}$ , such as categorical dummies for the age and educational attainment of its head, household size, number of children and region of residence. The variable  $a_i$  captures all unobserved, time-invariant characteristics impacting  $y_{it}$ , and the idiosyncratic error term is denoted as  $u_{it}$ .

The problem with estimating equation (1) using pooled OLS is that the coefficient estimates of interest to us, " $\delta_1$ ", " $\gamma_1$ " and " $\gamma_2$ ", will be biased and inconsistent if  $a_i$  and  $u_{it}$  are correlated, which is highly likely since household-level heterogeneity drives much of wealth accumulation patterns.<sup>8</sup> One option is to estimate equation (1) via fixed-effects by time-demeaning the data and applying the OLS estimator.<sup>9</sup> The time-demeaned equation is given by:

$$\ddot{y}_{it} = \delta_1 \ddot{2010}_t + \beta_1 \ddot{I}_{it} + \beta_2 \ddot{M}_{it} + \gamma_1 \left( \ddot{I}_{it} * \ddot{2010}_t \right) + \gamma_2 \left( \ddot{M}_{it} * \ddot{2010}_t \right) + \ddot{Z}_{it} \theta + \ddot{u}_{it} \quad (2)$$

Note that any household characteristic that remains constant over time, including the terms  $\beta_1 \ddot{I}_{it}$  and  $\beta_2 \ddot{M}_{it}$  if there is no change in the couple's nativity, will get swept away by the fixed-effects transformation. However, the effect of aging—captured by changes in the various categorical dummies—and other time-varying characteristics will still be captured. Similarly, the coefficients of interest to us will be present. In particular,  $\delta_1$  will measure how wealth and retirement plans for native households were impacted by the recession, whereas the interaction terms  $\gamma_1$  and  $\gamma_2$  will gauge systematic differences in how the downturn impacted the wealth accumulation and retirement plans of households according to their nativity.

At this juncture in the analysis, it is worth noting that a traditional problem with wealth analyses is the presence of negative and zero values in some asset categories. Note, however, that this problem can be alleviated by breaking down the analysis in two parts: one examining the impact of the recession on asset ownership, and the second one addressing the effect of the downturn on the wealth accumulated in specific assets by their owners. When examining asset ownership, households reporting a zero

or negative value for a particular asset are coded with a zero to reflect lack of ownership of the asset in question. Everyone else reporting a positive value is coded as an asset owner. As such, the asset ownership models allow us to effectively assess the effect of the recession on, say, asset ownership losses. Once we have gauged the impact of the downturn on asset ownership, we can focus on its impact on the wealth accumulated in a particular type of asset by asset owners.<sup>10</sup>

To further understand the impact of the recession, when estimating equation (2), we add a series of interaction terms between the post-recession dummy and other personal characteristics contained in vector  $Z_{it}$ , such as the gender, race and educational attainment of the household head. This allows us to learn about differential impacts of the recession on the wealth accumulation of households according to whether the head was male or female, black, Hispanic or white, and whether s/he had more than a high school education.

Most importantly, because of the notable disparities in wealth accumulation patterns between households in the bottom and top percentiles of the wealth distribution observed in Table 3, we also estimate equation (2) for households that were in the bottom, middle and top quartiles of the wealth distribution prior to the economic downturn in 2006. In that manner, we are able to account for household level heterogeneity, which is problematic in a quantile regression framework (Koenker 2004).<sup>11</sup> The analysis allows us to identify population segments particularly hurt during the downturn and gauge if the recession's impacts, when present, were statistically different for households at the extremes of the wealth distribution—possibly contributing to increasing wealth inequality.

## 5 The recession's impact on total wealth and its components

Table 4 displays the results from estimating equation (2) for the logarithm of net total wealth. Two versions of this equation are presented in the table. First, we attempt to explain wealth holdings defined as the sum of financial, equity and business wealth. As a robustness check, we also report results from estimating total net wealth including Social Security wealth. There are pros and cons to estimating a wealth variable that includes Social Security wealth (defined here as the stream of prospective Social Security income). Given that Social Security wealth is rather substantial for many households, it seems only appropriate to include it in our inquiry. Unfortunately, we are only able to compute Social Security wealth for about half of the households in our sample. Hence, we use those results as a robustness check but warn that data constraints make these rough estimates. Details on how we computed Social Security wealth for each household are outlined in the Appendix, along with mean values of estimated Social Security wealth over the different household types. These figures suggest that Social Security constitutes about 25 percent of total wealth for immigrant households, 20 percent for mixed households and about 22 percent for native households.

The figures from the regression excluding Social Security wealth (in the first column of Table 4) reveal that net total wealth among non-immigrant older Americans declined by 26.4 percent between 2006 and 2010, a little above the average net wealth losses computed for native households in the descriptive statistics.<sup>12</sup> We also find, substantiated by the F-statistics, that the wealth of immigrant households declined by a bit less

**Table 4 Fixed-effects estimates of logarithm of net total wealth**

Regressors	Without SS wealth		With SS wealth	
	Coefficient (Robust S.E.)	F-Statistic	Coefficient (Robust S.E.)	F-Statistic
Age 56-60	0.046 (0.063)		-0.039 (0.315)	
Age 61-65	0.188** (0.088)		0.126 (0.415)	
Age 66-70	0.258** (0.111)		0.386 (0.418)	
Age 71-80	0.274** (0.135)		0.418 (0.421)	
Age 81+	0.161 (0.172)		0.394 (0.534)	
No. of HH Residents	0.023 (0.025)		0.023 (0.020)	
No. of Children	0.028 (0.037)		0.006 (0.021)	
<b>Post-Recession</b>	-0.264*** (0.036)		-0.228*** (0.025)	
<b>Post*Migrant HH</b>	0.021 (0.083)	27.15***	0.111 (0.074)	41.54***
<b>Post*Mixed HH</b>	-0.119* (0.068)	29.11***	-0.041 (0.052)	41.92***
Post*Male	0.005 (0.032)	36.20***	0.015 (0.026)	57.04***
Post*Black	0.083 (0.065)	27.18***	0.117*** (0.042)	42.50***
Post*Other Race	-0.048 (0.089)	27.35***	-0.013 (0.076)	40.92***
Post*Hispanic	-0.049 (0.077)	28.21***	-0.037 (0.059)	42.08***
Post*More than HS	0.029 (0.032)	29.91***	-0.014 (0.025)	44.99***
New England	-0.132 (0.256)		0.313 (0.201)	
Mid Atlantic	0.146 (0.330)		0.196 (0.146)	
East North Central	0.140 (0.215)		0.277** (0.137)	
West North Central	0.430 (0.407)		0.480*** (0.173)	
East South Central	-0.104 (0.246)		0.109 (0.226)	
West South Central	-0.017 (0.521)		0.422 (0.324)	

**Table 4 Fixed-effects estimates of logarithm of net total wealth** (*Continued*)

Mountain	0.023 (0.351)	0.214 (0.182)
Pacific	0.187 (0.459)	0.191 (0.160)
N	9,505	4,875

**Notes:** The regressions include a constant term. \* indicates significance at the 10% level, \*\* indicates significance at the 5% level and \*\*\* indicates significance at the 1% level. Reference categories are younger than 56 and residing in the South Atlantic region. Standard errors are robust.

(for a total decline of 24.3 percent), while mixed households, on average, experienced a decline in wealth of 38.3 percent.<sup>13</sup> In sum, the impact of the recession appears to have been rather substantial, with households experiencing anywhere from roughly 24 percent to 38 percent in wealth losses depending on their nativity. Black households fared better, losing only 18 percent of their wealth holdings compared to the 31.3 percent loss experienced by Hispanic households. Similarly, more educated households coped better with the downturn, holding on to more of their wealth than their less educated counterparts.

A slightly different picture emerges with respect to the impact of the recession on net wealth when we incorporate Social Security. Wealth declined by about 22.8 percent among natives and by only 12 percent among migrant households. Mixed households experienced a 27 percent decline in wealth in the post-recession period, still less than when we measure wealth changes excluding social security. The smaller reductions in wealth emanating from this regression are understandable as Social Security wealth is largely impervious to market fluctuations, especially if one is already claiming benefits. Additionally, Social Security wealth is minimally responsive to a short-run variation in labor market income if one is still in the accumulation phase. Therefore, the addition of the stream of Social Security earnings to wealth is likely to mitigate the impact of the recession on wealth.

A few other results from the estimation of net wealth including Social Security are worth discussing. For example, of interest is the impact that the recession had on households headed by blacks. On average, blacks' wealth declined by 11 percent relative to the 22.8 percent loss experienced by other households. Perhaps Social Security wealth represents a larger share of blacks' wealth and, given the lower sensitivity of Social Security wealth to the downturn, the economic recession did not impact blacks as harshly. Interestingly, when considering the cushion of Social Security wealth, the recession had a slightly greater impact on the wealth accumulation of households with a more educated (as opposed to a less educated) household head. Perhaps the more educated households are also wealthier households for whom the relative crisis-resilient Social Security wealth constitutes a smaller share of their portfolios. Finally, the regression results also reveal that households residing in the East North Central and West North Central regions of the country experienced wealth gains.<sup>14</sup>

What lies behind the observed declines in overall wealth? Were certain categories of assets more impacted than others? Were some demographic groups less or more favorably treated by the recession owing to their portfolios' composition? Did the downturn have a differential impact on households depending on their standing in the wealth distribution prior to the recession? We address these questions next.

### A) The recession's impact on the ownership of various types of assets

In order to better understand the impact of the recession on the wealth of older households, it is important to first determine how the economic downturn impacted the ownership likelihood of various portfolio assets and, if owned, their net values. Panel A of Table 5 reports on the recession's impact on the ownership likelihood of financial wealth and its components.<sup>15</sup> When examining, first, all financial assets combined, we observe that the recession did not appear to have significantly impacted overall ownership rates. This is because most households are still able to report holding one type of financial asset after the crisis even if they consolidated from holding different forms of financial assets to only one (a checking account or a savings account, for example).

However, once we examine the various components, the results reveal that the recession did lower ownership rates of certain categories of financial assets rather substantially. Ownership rates of stocks, mutual funds and investment trusts declined by 4.6 percentage points for natives, 3.2 percentage points for migrant households and 2.7 percentage points for mixed households. Savings, checking and money market accounts ownership rates declined by about 3 percentage points for native households and by considerably more for immigrant (10 percentage points) and mixed (7.5 percentage points) households. Both native and immigrant households endured a 6.7 percentage points reduction in ownership rates of CDs, savings bonds and T-Bills, while mixed households were hit a bit harder with an 8 percentage point decline.

In sum, the recession significantly reduced the ownership of most financial wealth categories. Yet, as noted earlier, most households continued to hold at least some type of financial asset given the negligible drop in *overall* financial asset ownership. Perhaps households consolidated financial assets, for example, closing stock, savings or CD accounts but maintaining positive balances in a checking account.

Turning next to other types of assets in Panel B of Table 5, we find that the past economic downturn reduced primary home ownership among all household types by almost 3 percentage points. Ownership of "other real estate" fell by 2.8 percentage points after the recession among natives, by 4.6 percentage points among immigrants and by 0.6 percentage points among mixed households. Lastly, vehicle ownership declined by about 3 percentage points for natives and mixed households and by 7.6 percentage points for immigrants. Natives suffered a 3 percentage point reduction in their ownership likelihood of individual tax-deferred retirement savings accounts (IRAs/Keogh-type accounts). In sum, there were significant cutbacks in real estate, followed by vehicle and IRA/Keogh accounts ownership rates.

### B) The recession's impact on net asset values

Although the recession's impact on asset ownership rates may be considered modest by some, its effect on the overall level of wealth of older households was substantial. According to the figures in Table 6, Panel A, financial wealth declined by nearly one-fifth (\$7,300 at the overall mean of financial wealth) for native households. Migrant households were hit less, suffering only an 11 percent loss, while mixed households ended up worse off, losing 22 percent of their financial wealth. Portfolio compositions

**Table 5 Fixed-effects estimates of the ownership likelihood of various components of financial wealth**

**Panel A – Dependent variable: likelihood of owning various components of financial wealth**

Key regressors	Financial wealth in:											
	Financial wealth		Stocks, mutual funds, investment trusts		Checking, savings, money market		CDs, saving bonds, T-bills		Bonds, bond funds, other savings		Non-housing financial debt	
	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat
Post-Recession	-0.019 (0.015)		-0.046*** (0.016)		-0.029** (0.013)		-0.067*** (0.017)		-0.007 (0.017)		0.016 (0.017)	
Post*Migrant HH	-0.049 (0.036)	1.78	0.014 (0.028)	4.13**	-0.069** (0.030)	5.53***	0.006 (0.027)	7.77***	-0.004 (0.031)	0.10	-0.038 (0.036)	0.93
Post*Mixed HH	-0.038 (0.027)	1.80	0.019 (0.027)	4.20**	-0.046** (0.024)	4.54***	-0.013 (0.026)	8.14***	0.006 (0.027)	0.11	-0.033 (0.031)	0.99
N	9,933		9,933		9,933		9,933		9,933		9,933	
Dep. Var. Mean	0.777		0.314		0.873		0.254		0.241		0.321	

**Panel B – Dependent variable: likelihood of owning various components of net total wealth**

Key regressors	Financial wealth in:											
	Primary home		Secondary home		Other real estate		Businesses		Vehicles		IRAs/Keogh plans	
	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat
Post-Recession	-0.028*** (0.009)		-0.005 (0.008)		-0.028** (0.013)		0.001 (0.011)		-0.031 (0.009)		-0.030** (0.015)	
Post*Migrant HH	-0.009 (0.021)	5.55***	-0.005 (0.015)	0.22	-0.018 (0.024)	2.75*	-0.017 (0.020)	0.39	-0.045* (0.023)	8.34***	0.038 (0.030)	2.98**
Post*Mixed HH	0.004 (0.013)	5.53***	0.012 (0.016)	0.44	0.022 (0.020)	2.82*	0.015 (0.020)	0.27	-0.001 (0.015)	6.16***	0.035 (0.026)	2.91*
N	9,907		9,933		9,933		9,933		9,933		9,933	
Dep. Var. Mean	0.896		0.058		0.175		0.142		0.942		0.479	

**Notes:** The regressions include a constant term as well as the same regressors included in Table 4. \* indicates significance at the 10% level, \*\* indicates significance at the 5% level and \*\*\* indicates significance at the 1% level. Standard errors are robust.

**Table 6 Fixed-effects estimates of the log net value of various components of total net wealth**

**Panel A – Dependent variable: log net value of various components of financial wealth**

Key regressors	Financial wealth in:											
	Financial wealth		Stocks, mutual funds, investment trusts		Checking, savings, money market		CDs, saving bonds, T-bills		Bonds, bond funds, other savings		Non-housing financial debt	
	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat
Post-Recession	-0.192** (0.077)		-0.221 (0.141)		-0.039 (0.070)		-0.101 (0.146)		-0.346* (0.201)		0.093 (0.127)	
Post*Migrant HH	0.078 (0.170)	3.19**	-0.361 (0.325)	1.83	-0.128 (0.147)	0.54	0.089 (0.199)	0.28	-0.063 (0.407)	1.51	-0.021 (0.315)	0.27
Post*Mixed HH	-0.031 (0.137)	3.19**	0.027 (0.199)	1.23	-0.216* (0.118)	1.92	0.110 (0.286)	0.29	0.300 (0.286)	1.87	-0.224 (0.230)	0.71
N	7,711		3,120		8,663		2,524		2396		3,193	
Dep. Var. Mean	\$37,987		\$59,516		\$15,230		\$23,861		\$32,761		\$5,271	

**Panel B – Dependent variable: log net value of various components of net total wealth**

	Primary home		Secondary home		Other real estate		Businesses		Vehicles		IRAs/Keogh plans	
	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat	Coef. (S.E.)	F-stat
Post-Recession	-0.141*** (0.031)		-0.51*** (0.119)		-0.154 (0.156)		-0.380** (0.181)		-0.208*** (0.043)		-0.250*** (0.072)	
Post*Migrant HH	-0.054 (0.069)	10.71***	0.232 (0.194)	9.80***	-0.706 (0.361)	2.33*	0.025 (0.264)	2.21	0.016 (0.093)	11.5***	0.425** (0.211)	8.2***
Post*Mixed HH	-0.049 (0.049)	11.25***	-0.253 (0.234)	10.6***	-0.197 (0.209)	0.91	-0.792** (0.332)	5.18**	0.115* (0.069)	12.5***	0.147 (0.131)	6.7***
N	8,579		1,805		1,745		1,179		9,205		4,759	
Dep. Var. Mean	\$136,626		\$62,131		\$101,926		\$164,555		\$12,836		\$75,358	

**Notes:** The regressions include a constant term as well as the same regressors included in Table 4. \* indicates significance at the 10% level, \*\* indicates significance at the 5% level and \*\*\* indicates significance at the 1% level. Standard errors are robust.



do differ across the different household types, perhaps explaining the variances in impact of the recession on overall financial wealth. While we previously saw that many households lost access to various components in their portfolios, the estimates in Table 6, Panel A, indicate that those households continuing to be in possession of assets seem to be holding their own, neither increasing nor decreasing their financial wealth in the different categories, with the exception of two cases. Mixed households lost nearly one-quarter of their checking/saving/money market balances, and native households in possession of bonds and other financial assets endured losses of up to 35 percent.

Table 6, Panel B, also informs about wealth losses in non-financial assets and tax-sheltered retirement savings. In contrast to financial assets, households did experience broad declines in the values of these holdings. Primary housing equity declined by 14 percent for natives and by almost 20 percent for immigrant and mixed households. Equity in second homes dropped by approximately 51 percent for natives, by 28 percent for immigrants and by almost 77 percent in mixed households. Business wealth was also severely impacted by the recession. The net value of businesses declined for native households by 38 percent, with immigrant and mixed households also sustaining large losses. Nevertheless, given the very limited number of migrant and, especially, mixed households with business assets in our sample,<sup>16</sup> we should be cautious of these estimates. The net value of vehicles also decreased. The drop in values was approximately 21 percent for natives, slightly less for immigrants and just 9 percent for mixed households. Finally, the net worth of IRAs and Keogh plans fell by 25 percent for native households, rose by 17.5 percent in immigrant households while falling by 10 percent in mixed households.

Summarizing, the economic downturn lowered the total net wealth of older households by a non-trivial amount. It reduced ownership rates of real estate, vehicles, IRA/Keogh plans and business assets, as well as the overall wealth accumulated in all asset types. Both real and financial asset net worth plunged. Given the extent of wealth inequality displayed in Table 10 in the Appendix, we wonder whether the recession may have also impacted native, immigrant and mixed households differently depending on their standing in the income distribution prior to the economic downturn. Is it the case that richer and poorer households endured losses of similar magnitudes? Or were these average effects driven by the recession's impact on households at one or other end of the wealth spectrum? In what follows, we address these questions with an analysis of how the recession's impacts were distributed across the wealth distribution while also accounting for differences in nativity.

## **6 Did the recession impact rich and poor households similarly?**

To address this question, we estimate equation (2) for households at different quartiles of the wealth distribution prior to the recession in 2006.<sup>17</sup> Because the cells become fairly small for some of the wealth categories as we split the sample by nativity and wealth quartiles, we report on the impact of the recession on the ownership and wealth holdings in the most prominent wealth categories, namely: net wealth (excluding Social Security), financial wealth and primary home equity. We distinguish among households in the bottom, middle two and top wealth quartiles before the economic downturn. Table 7

**Table 7 Fixed-effects estimates of the ownership likelihood of various components of net wealth by wealth quartiles in 2006**

Key regressors	Financial wealth		Primary home	
	Coefficient (Robust S.E.)	F-statistic	Coefficient (Robust S.E.)	F-statistic
<b>Households in the Bottom Wealth Quartiles in 2006</b>				
Post-Recession	-0.012 (0.045)		-0.035 (0.026)	
Post*Migrant HH	-0.097 (0.075)	0.85	-0.024 (0.054)	1.00
Post*Mixed HH	-0.058 (0.076)	0.32	-0.064 (0.041)	2.25*
N	2,485		2,485	
<b>Households in the Middle Wealth Quartiles in 2006</b>				
Post-Recession	-0.021 (0.020)		-0.034*** (0.010)	
Post*Migrant HH	-0.048 (0.057)	0.98	0.017 (0.020)	6.09***
Post*Mixed HH	-0.064 (0.043)	1.75	0.021 (0.015)	5.86***
N	4,932		4,932	
<b>Households in the Top Wealth Quartiles in 2006</b>				
Post-Recession	-0.037* (0.019)		-0.009 (0.011)	
Post*Migrant HH	0.014 (0.042)	1.93	-0.062* (0.034)	2.31*
Post*Mixed HH	0.011 (0.026)	1.93	0.021 (0.017)	0.96
N	2,697		2,697	

**Notes:** The regressions include a constant term as well as the same regressors included in Table 4. \* indicates significance at the 10% level, \*\* indicates significance at the 5% level and \*\*\* indicates significance at the 1% level. Standard errors are robust.

reports on the impact of the downturn on asset ownership, whereas Table 8 looks at its impact on wealth holdings.

Tables 7 and 8 suggest that despite the 10 percentage point decline in primary home ownership by mixed nativity households, poorer households did not come out of the recession with less wealth. Households managing to keep their primary homes enjoyed wealth gains that seemed to shelter them from wealth losses in other asset categories. In the bottom quartile, 69 percent of households claim equity in primary homes while only 47 percent claim to own financial wealth. This greater reliance on primary home ownership may have protected these households from the crash in financial assets. Native households in the bottom quartile who owned homes experienced a 30.5 percent gain in housing values. Mixed and immigrant households did even better, with a 57 percent and 82 percent gains, respectively, in the value of such assets.

Like the poorest households, those in the middle wealth quartiles did not endure losses in financial asset ownership. However, they did experience losses in homeownership and large declines in home equity, which explain the broad declines in wealth holdings (see column labeled “Net Total Wealth” for the middle quartile group). Native

**Table 8 Fixed-effects estimates of the log net value of various components of net wealth by wealth quartiles in 2006**

Key regressors	Net total wealth		Financial wealth		Primary home	
	Coefficient (Robust S.E.)	F-stat	Coefficient (Robust S.E.)	F-stat	Coefficient (Robust S.E.)	F-stat
<b>Households in the Bottom Wealth Quartiles in 2006</b>						
Post-Recession	0.083 (0.121)		-0.262 (0.268)		0.305** (0.122)	
Post*Migrant HH	0.299 (0.238)	1.01	0.012 (0.399)	0.49	0.519* (0.296)	4.35***
Post*Mixed HH	0.006 (0.255)	0.24	0.325 (0.568)	0.68	0.275 (0.207)	4.31***
N	2,117		1,178		1,545	
<b>Households in the Middle Wealth Quartiles in 2006</b>						
Post-Recession	-0.280*** (0.041)		-0.073 (0.099)		-0.206*** (0.035)	
Post*Migrant HH	-0.029 (0.091)	24.08***	0.067 (0.239)	0.33	-0.081 (0.073)	17.68***
Post*Mixed HH	-0.230*** (0.083)	27.65***	-0.367* (0.191)	2.15	-0.164** (0.064)	21.21***
N	4,878		4,110		4,628	
<b>Households in the Top Wealth Quartiles in 2006</b>						
Post-Recession	-0.569*** (0.059)		-0.507*** (0.141)		-0.319*** (0.052)	
Post*Migrant HH	-0.021 (0.162)	47.48***	0.099 (0.283)	6.49***	-0.083 (0.127)	20.89***
Post*Mixed HH	-0.054 (0.098)	47.58***	0.281 (0.206)	6.87***	0.001 (0.068)	19.04***
N	2,675		2,552		2,534	

**Notes:** The regressions include a constant term as well as the same regressors included in Table 4. \* indicates significance at the 10% level, \*\*\* indicates significance at the 1% level. Standard errors are robust.

households' housing ownership rates declined by 3.4 percentage points, and their home equity dropped by 21 percent. Immigrants experienced a 2 percentage point decline in homeownership and a 28 percent decline in home equity. Lastly, mixed households also performed poorly. While they endured homeownership reductions of only 1 percentage point, their home equity fell by 37 percent. These reductions in primary home wealth help explain the observed declines in overall net wealth for elderly households in the middle quartiles.

Lastly, financial and housing wealth losses in the top wealth quartile were very substantial. Natives, immigrant and mixed households all sustained large decreases in both housing and financial wealth. While primary home equity decreased by 32 percent for native and mixed households and by 40 percent for immigrant households, only immigrant households experienced a reduction in their home ownership rates of approximately 7 percentage points.

In sum, the poorest households were protected by housing, when they managed to hold onto it. In this segment of the market, it seems that home values did not decline,

instead rose, in particular for immigrant and mixed nativity households. In that regard, the notion that real assets provide protection against shocks played out well for this segment of the population. In contrast, households in the upper wealth quartiles primarily experienced substantial losses in both real and financial asset values, with immigrant households in this group suffering, in addition, from reductions in home ownership. Sandwiched between, we find households in the middle wealth quartiles, who endured significant losses in *both* asset ownership and asset values. These households ended up with greatly compromised portfolios in 2010.

Also, immigrant households in the lower wealth quartile did well with their housing wealth, even in comparison to native households. But in the middle and upper quartiles, immigrant households suffered more than native households with respect to housing values. Investment in real assets protected immigrants at the bottom of the wealth distribution, while it compromised those in the upper and middle wealth quartiles, underscoring the importance of accounting for differential impacts by wealth levels.

## 7 Putting the results into context

We care about the impact of the recession on the wealth holdings of older Americans because they have less time to recover from a substantial loss of assets, and such losses are likely to impact their well-being. Therefore, it is of interest to conclude by asking ourselves how the recession may have impacted the retirement decisions of the various types of households we are looking at. Did these losses contribute to a delay in their planned retirement date? The estimates in Table 9 address that question. Given the significant reductions in overall wealth, it is not surprising to find that native and immigrant households report delaying their planned retirement by roughly two years on account of the Great Recession.<sup>18</sup> It is, however, interesting that despite enduring somewhat larger overall wealth losses, mixed households only seem to be inclined to delay their planned retirement by a little less. Why might this be the case?

One explanation for this differential response could be that the portfolio holdings of immigrant and mixed households are imperfectly measured. Although most immigrant and mixed households in the HRS have been in the United States for quite a long time and, therefore, they likely hold most of their wealth in the United States, it is unclear to what extent the HRS measures immigrant wealth when they have assets in their home

**Table 9 Fixed-effect estimates of planned retirement delays**

Key regressors	Planned retirement year	
	Coefficient (Robust S.E.)	F-Statistic
Post-Recession	2.008*** (0.516)	
Post*Migrant HH	0.002 (0.672)	7.58***
Post*Mixed HH	-0.269 (0.530)	7.58***
N	2,846	

**Notes:** The regressions include a constant term as well as the same regressors included in Table 4. \* indicates significance at the 10% level, \*\*\* indicates significance at the 1% level. Standard errors are robust.

country communities. We know that immigrants often remit money home in order to build nest eggs, support family back home, or to purchase real estate. If home-country assets purchased by those immigrants are not reflected in the HRS data, we are not fully addressing the wealth impact of the recession among immigrants and mixed nativity households, which could be larger or smaller when including foreign-based assets. If those external holdings were impacted differently by the recession, it may be that immigrant and mixed nativity households, in fact, experienced very different changes in wealth holdings. But why would immigrant and mixed households behave differently from one another? In one other respect, the two groups may differ with mixed households that have better access to the U.S. social safety net through U.S. nativity of at least one household member, along with whatever protections the immigrant household member may have through their immigrant family networks. Hence, mixed nativity households have more diversified protection relative to immigrant and native households, perhaps explaining why they behave differently in the face of asset declines relative to non-mixed nativity households.

## 8 Conclusions

In this paper, we explore how the Great Recession impacted the wealth and wealth composition of older native and immigrant households in the United States. We find that the 2008–2009 economic downturn lowered the total net wealth of older native households by approximately 26 percent. Migrant households sustained only slightly lower decreases in wealth, while mixed households endured much larger reductions of 38 percent. A wide range of asset holdings appeared to have been seriously hit by the recession, including primary housing, business assets, vehicles, real estate and financial assets. In addition, the economic downturn damaged retirement savings, reducing ownership of IRAs and Keogh plans by an average of 3 percentage points for native households.

Given the importance of real assets in the portfolios of immigrant and mixed-nativity households, a more careful look at this component of wealth is warranted. Overall, immigrant and mixed households endured as large reductions in housing wealth as their native counterparts. However, the incidence of such reductions was uneven across wealth quartiles. Immigrants in the middle and upper wealth quartiles experienced large losses in housing ownership and values while those in the lowest wealth quartiles enjoyed large gains in those asset values which protected them against overall net worth losses. It is interesting that real assets, in the form of primary home ownership, protected immigrant households at the bottom of the wealth distribution, while hurting their counterparts in the upper and middle wealth quartiles. This finding is related to those by Mundra and Oyelere (2014), who claim that birth country networks assisted immigrants with keeping their homes during the Great Recession. Perhaps, the protective effect of birth networks is stronger among poorer immigrant households, possibly more accustomed to relying on such contacts. Another possibility might have been that housing values in immigrant enclave areas did not suffer like housing values did elsewhere due to immigration inflows to those areas. There is evidence, in this regard, that immigration can push up housing values in immigrant-dense areas, as reported by Saiz (2007) in the United States and Gonzalez and Ortega (2013) in Spain. If middle and upper wealth immigrant households are more likely to settle in non-enclave areas, they may not have enjoyed these protections.

The housing losses experienced by households in the middle wealth quartiles might be contributing toward the general increase in wealth inequality widely reported and discussed today. As asset values recovered, households that had been able to hold on to their assets enjoyed a faster wealth recovery. In contrast, households who lost ownership of those assets were not in a position to enjoy similar gains, solidifying the losses experienced in the recession years.

Our results also demonstrate the important role of the old-age Social Security program in protecting the wealth of older Americans during a recession. Immigrant households, less likely to have accumulated credits in the Social Security system, do not enjoy this protection to the same degree as natives. Efforts need to be doubled to ensure that these households participate in the system or find other ways to preserve wealth to protect them during periods of economic instability.

Finally, the recession not only lowered overall wealth, but it also caused a two year retirement delay among native and immigrant households. This finding corroborates that of Goda et al. (2011) and McFall (2011), who found that the recession caused retirement delays, but it contradicts Coile and Levine (2011) who claim instead that the recession and recessions in general speed up retirement. Because Coile and Levine's results were derived from an examination of 30 years of data, while ours and those by Goda et al. (2011) and McFall (2011) only use data from the Great Recession, the findings may be pointing out that the Great Recession was somewhat different from earlier recessions and, accordingly, elicited a different response. For example, earlier recessions may have impacted employment opportunities while preserving accumulated asset values for near retirees. Being on track with respect to their asset accumulation towards retirement and finding employment less desirable, near retirees may have chosen to leave the labor market. But, given the developments that took place in the financial and housing markets during the Great Recession, many near-retirees in 2006 may have found their asset position to be such that they did not have the option to retire, opting instead to continue working, even in less than optimal jobs. The prolonged working lives of established and experienced workers could add to the difficulties encountered by new labor market entrants in securing good jobs.

In sum, the differential impact that the past recession appears to have had across demographic and economic groups warrants the attention of policy-makers, who would do well to address the needs of those most disadvantaged by the downturn. Furthermore, it is important that we better understand the recession's contribution to growing economic disparities, which can prove to be a source of socioeconomic instability and political divisiveness. Our hope is that by learning about the wealth eroding and inequality consequences of the Great Recession, we might be better prepared for future business cycle downturns.

## Endnotes

<sup>1</sup>While such a finding suggests that the eventual rebound in stock values may make delaying retirement a moot point, it still may be the case that, in light of asset values in 2008 and 2009, irreversible decisions affecting the long-run and lifetime income prospect for older Americans were made. For example, individuals may have cashed out equity-based retirement accounts when stock values were severely depressed in order to switch into fixed annuities.

<sup>2</sup>Gustman, Alan and Steinmeier (2000) also arrive at this conclusion. However, they note that for each year worked under the Social Security System, immigrants realize higher benefits than the U.S. born, even if their earnings were identical during the years worked.

<sup>3</sup>In a similar vein, Diaz McConnell and Akers (2010) find that immigrants invest a larger share of their incomes in housing than natives.

<sup>4</sup>For detailed information about the survey—its history, topic coverage and its expansion to other countries—please go to: <http://hrsonline.isr.umich.edu/>.

<sup>5</sup>Namely, net wealth is defined as follows: NET WEALTH = [(current value of stock holdings, bank accounts, CDs, bonds and other financial wealth) + (equity in 3 real estate categories: primary home, secondary homes and other real estate) + net worth of business holdings + net worth of vehicles + retirement accounts (e.g. IRAs, Keogh plans) – (non-mortgage debt)].

<sup>6</sup>We lack information on the value of forthcoming social security payments or on other defined benefit pension plans—clearly important components of wealth. As a robustness check, we attempt to account for prospective social security wealth in the overall wealth estimations in Table 4.

<sup>7</sup>To obtain the information on planned retirement, the HRS makes the following query: “Now I want to ask about your retirement plans. Do you plan to stop working altogether or reduce work hours at a particular date or age, have you not given it much thought, or what?” This question is followed by, “At what age do you plan to stop working?” if the respondent plans to stop work altogether. When the respondent has no plans or has not given it much thought, the interviewer asks: “At what age do you think you will stop working?”

<sup>8</sup>Results available from the authors show that accounting for individual fixed-effects is quite important. Failure to do so largely overstates the impact of the Great Recession on wealth.

<sup>9</sup>With only two time periods, fixed-effects and first-differenced estimates are one and the same.

<sup>10</sup>As a robustness check, we experiment with replacing the zeros and negative values with a small positive value when assessing how overall net wealth was impacted by the recession. To distinguish those households from the rest, we include dummy variables indicative of whether the household had a zero or a negative value for net wealth. Our key findings, available from the authors upon request, prove robust to the inclusion of these households in the analysis.

<sup>11</sup>Quantile regressions cannot be easily estimated with fixed-effects. The traditional decomposition of projections using deviations from individual means is not available, and more restrictive approaches to estimating quantile regressions using panel data are still in a developmental stage, facing theoretical challenges that remain unsolved (Koenker 2004).

<sup>12</sup>Native households’ mean decline in net worth was \$178,913. With an overall net worth of \$755,703 in 2006, the simple descriptive statistics suggest a 23.6 percent decline.

<sup>13</sup> $\frac{\Delta \text{net worth}}{\Delta \text{post-recession}} = -0.264 + 0.21(\text{migrant}) - 0.119(\text{mixed}) = 0.243$  if  $\text{migrant} = 1$  and  $\text{mixed} = 0$ . The F-statistic tests the hypothesis of joint significance of the estimated coefficients.

<sup>14</sup>The South Atlantic is chosen as the reference category since it is the most populous region in our sample. It includes the states of Delaware, D.C., Florida, Georgia,

Maryland, North Carolina, South Carolina, Virginia and West Virginia. The Pacific region includes the states of Alaska, California, Hawaii, Oregon, and Washington. The East North Central region includes Illinois, Indiana, Michigan, Ohio and Wisconsin. The West North Central region includes Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota.

<sup>15</sup>Financial wealth in the HRS is computed as the sum of stocks, checking accounts, CDs, bonds and savings accounts minus financial debt.

<sup>16</sup>Only 16 mixed households owned business assets in 2006.

<sup>17</sup>That is, we categorize households as belonging to the bottom, middle or top quartiles depending on their 2006 wealth levels.

<sup>18</sup>This finding corroborates those from Goda, Shoven and Slovic (2011) and McFall (2011).

## Appendix

In order to present the reader with a snapshot of the distribution of the various categories of wealth for native, immigrant and mixed households, we provide wealth values in each decile for each wealth category. For example, if we rank all native households in 2006 according to their holdings of CDs, the value of those holdings for those at the tenth percentile was \$200, while those at the 90th percentile had CD holdings of \$47,700. By contrast, immigrants at the 10th percentile had no CD holdings and immigrants in the 90th percentile had \$24,700 (see Table 10).

**Table 10 Distribution of Wealth Components in 2006 (in 000's)**

Asset Category	Percentile								
	10	20	30	40	50	60	70	80	90
<b>Native Households</b>									
Financial Assets	-5.7	1.2	10.8	22.6	44.9	65.9	113.9	184.6	303.9
Stocks	0.4	0.7	2.9	4.7	10.8	20.2	41.0	73.9	152.9
Bank Accounts	2.1	4.7	8.6	14.1	20.1	25.3	37.2	44.9	64.8
CDs	0.2	0.9	2.1	4.2	9.3	13.8	22.8	36.8	47.7
Bonds	0.0	0.0	0.1	0.4	0.3	0.8	2.9	7.5	14.8
Other Financial Wealth	0.4	0.7	1.6	2.9	7.2	8.6	12.7	24.3	26.0
Home Equity (Primary home)	-9.4	38.4	75.7	115.0	144.0	187.6	224.3	274.0	354.2
Home Equity (Secondary home)	0.3	1.2	2.8	4.4	7.6	15.8	18.7	26.7	77.1
Home Equity (Other real estate)	0.5	1.1	3.4	6.4	10.6	15.5	27.8	44.1	95.6
Non-Mortgage Debt	8.9	5.9	4.4	3.7	3.0	2.8	2.7	2.7	2.3
Business Assets	0.1	0.9	2.0	2.4	6.5	14.4	26.6	55.4	86.8
Vehicle Assets	6.7	11.7	14.7	18.5	22.5	22.8	24.7	27.0	33.7
IRAs & Keoghs	0.8	3.2	8.3	16.7	31.8	51.0	89.4	142.2	220.9
<i>Net Worth</i>	-6.8	57.7	117.6	185.9	267.9	373.1	525.4	754.1	1,172.2
<b>Mixed Households</b>									
Financial Assets	-29.7	-2.0	2.7	23.8	35.2	80.3	100.7	202.0	381.2
Stocks	0.0	0.1	0.6	3.4	10.1	24.4	21.0	77.0	164.9
Bank Accounts	2.3	3.8	3.6	15.9	16.3	26.4	32.0	63.9	110.9
CDs	0.4	1.0	0.0	6.8	9.5	26.5	22.3	42.5	33.6
Bonds	0.0	0.1	0.0	0.0	0.1	1.1	5.4	2.5	11.2
Other Financial Wealth	0.1	0.4	1.2	0.2	6.4	4.7	29.1	18.0	63.0
Home Equity (Primary home)	3.4	27.1	63.5	102.9	193.1	240.2	331.4	373.7	496.9



**Table 10 Distribution of Wealth Components in 2006 (in 000's) (Continued)**

Home Equity (Secondary home)	0.0	0.5	0.5	12.1	12.0	18.4	49.3	46.1	62.9
Home Equity (Other real estate)	0.0	0.0	0.0	5.9	4.2	11.8	19.3	102.0	141.5
Non-Mortgage Debt	32.5	7.3	2.7	2.6	7.2	2.8	9.1	1.9	2.4
Business Assets	4.2	0.0	0.0	3.2	7.8	6.5	24.9	38.6	28.2
Vehicle Assets	4.5	7.4	10.4	13.7	17.1	23.3	19.8	26.7	24.0
IRAs & Keoghs	0.5	2.4	1.7	8.8	23.2	51.7	53.1	95.7	217.9
<i>Net Worth</i>	-17.1	35.5	78.8	170.5	292.5	432.3	598.4	884.8	1,352.5
<b>Immigrant Households</b>									
Financial Assets	-7.1	2.7	4.0	2.8	11.6	14.6	43.2	54.4	142.2
Stocks	0.0	0.0	0.3	0.6	0.6	0.9	12.0	7.1	79.6
Bank Accounts	0.5	3.3	4.5	3.0	6.7	12.3	12.6	23.1	24.3
CDs	0.0	0.0	0.7	2.4	9.3	3.7	16.5	15.6	24.7
Bonds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1
Other Financial Wealth	0.1	0.0	0.4	0.2	0.2	0.7	4.1	10.9	6.8
Home Equity (Primary home)	-10.4	2.3	35.2	85.8	159.5	224.4	233.1	331.3	414.1
Home Equity (Secondary home)	0.0	0.3	1.1	3.8	1.2	4.1	49.9	39.7	60.0
Home Equity (Other real estate)	0.8	0.8	0.5	0.6	3.2	17.2	17.9	28.7	83.6
Non-Mortgage Debt	7.7	0.6	1.9	3.4	5.2	2.9	2.0	2.3	2.3
Business Assets	0.0	0.0	0.6	3.4	0.0	12.0	2.2	1.2	3.7
Vehicle Assets	2.0	4.2	6.6	11.3	7.4	11.9	16.3	12.9	17.0
IRAs & Keoghs	0.0	0.2	0.8	3.5	4.4	3.8	22.5	23.8	75.7
<i>Net Worth</i>	-14.8	10.4	48.6	111.2	187.3	288.0	385.2	492.0	796.2

**Computation of social security wealth**

Retirees who are already retired at the time of the 2006 and 2010 surveys report their yearly benefit amount (primary insurance amount) for the previous year (2005 or 2009). We inflate these to obtain 2006 or 2010 Social Security receipts using the SS COLA adjustments applied in each of these years (4.1 percent for benefits received in 2006 over their 2005 values and no adjustment for benefits received in 2010 over their 2009 values). By taking into consideration their age and sex in 2006 and 2010 and attaching their expected life spans (using Social Security’s actuarial life tables at <http://www.ssa.gov/oact/STATS/table4c6.html>), we can project the stream of retirement pay-outs for each individual. These payouts over their lifetimes are discounted using the (intermediate cost) real interest rate reported by the OASDI Trustees Report of 2.9 percent to obtain Social Security wealth measures in 2006 and in 2010 (<http://www.ssa.gov/oact/tr/TR06/trTOC.html>).

In other words, we compute for each individual:  $\sum_0^s PIA A(1.029)^{-s}$ , where  $s$  is the number of years the individual is likely to receive benefits according to the Social Security administration’s life tables, and  $PIA$  is the primary insurance amount, the yearly payout. These are the future streams anticipated in 2006 (2010) in 2006 (2010) dollars.

For individuals who have not yet retired by 2010 and, thus, do not report a primary insurance amount in the 2006 or 2010 waves, we use prospective social security amounts as reported in the “Prospective Social Security Wealth Measures of Pre-retirees” by Kapinos et al. (2010). These provide prospective 2004 SS wealth measures

**Table 11 Social Security wealth by type of household**

HH Type	Social Security (SS) Wealth	Net Total Wealth (with SS)	Share of SS in Net Wealth
Native	\$242,556	\$1,108,587	0.219
Mixed	\$235,640	\$1,195,418	0.200
Immigrant	\$205,448	\$824,652	0.249

for individuals who have not yet retired as of 2004. They report measures under three different scenarios, namely that the individual retires early, at normal retirement age, or at a late retirement age. If in 2006 (2010) they are younger than 70, we assume that they will begin claiming benefits at the normal retirement age and use the prospective measure for normal retirement age. If they are older than 69 in 2006 (2010), we assume that they will begin claiming benefits at the higher rate. We convert the 2004 values into 2010 dollars to provide an SS wealth measure consistent with all the other wealth values in the paper.

To obtain a household measure of Social Security wealth, we sum the amounts for husband and wife. Since prospective Social Security wealth measures have been computed only for households in cohort 4, the sample that we work with is about half of the sample we work with when we do not report Social Security wealth. In Table 11, we report some descriptive statistics on Social Security wealth by type of household.

#### Competing interests

The IZA Journal of Labor Policy is committed to the IZA Guiding Principles of Research Integrity. The authors declare that they have observed these principles.

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