

The Demographics of Wealth

2018 Series

How Education, Race and Birth Year
Shape Financial Outcomes

**Essay No. 2: A Lost Generation? Long-Lasting Wealth Impacts
of the Great Recession on Young Families | May 2018**

[Executive Summary](#)



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The Center for Household Financial Stability at the Federal Reserve Bank of St. Louis focuses on family balance sheets, especially those of struggling American families. The Center researches the determinants of healthy family balance sheets, their links to the broader economy and new ideas to improve them. The Center's original research, publications and public events aim to impact future research, community practice and public policy. For more information, see www.stlouisfed.org/hfs.

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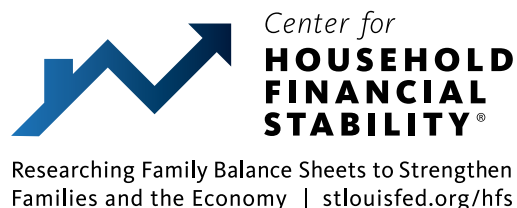
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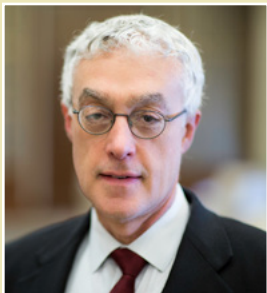
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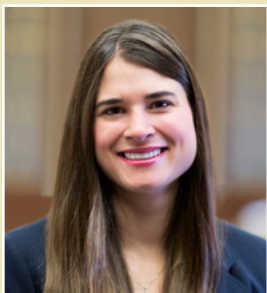
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An Introduction to the Series

The Demographics of Wealth

How Education, Race and Birth Year Shape Financial Outcomes

By William R. Emmons, Ana H. Kent and Lowell R. Ricketts

Income and wealth rebounded for many families between 2013 and 2016, the dates of the two most recent waves of the Federal Reserve’s Survey of Consumer Finances (SCF). Groups that had struggled the most during and after the Great Recession, including less-educated, Hispanic and black, and young families, participated in the recovery. Nonetheless, long-standing income and wealth gaps across education levels, races and ethnicities, and age groups remain large.

This is the second in a series of new essays that the Center for Household Financial Stability is publishing on how a family’s demographic characteristics—including educational attainment, race and ethnicity, and birth year—are related to the family’s financial outcomes. Like the previous essay series published in 2015, the 2018 series will focus on these three key demographic dimensions in turn. An important new feature of the 2018 series is the inclusion of two generations of educational data for each family. In addition to the educational attainment of the SCF respondent, the 2016 SCF for the first time contains detailed information on the respondents’ parents’ education. This new information reveals even more clearly that inherited demographic characteristics—your race or ethnicity, your age and birth

year, and even your parents’ level of education—profoundly shape the economic and financial opportunities you have and the outcomes you achieve.

As before, our primary data source is the triennial SCF, which provides the most comprehensive picture available of American families’ balance sheets and financial behavior over time. In some of our analyses, we use information from 47,776 families, each of which was surveyed in one of 10 survey waves between 1989 and 2016. When we focus on the education of SCF respondents’ parents, we draw upon data collected from 6,248 families in 2016. In every case, the SCF has been designed to be nationally representative, so we can safely generalize about the population as a whole.

As we documented three years ago, demographic characteristics remain remarkably powerful in predicting a family’s income and wealth. By expanding the scope of inherited demographic characteristics to include parents’ education, we believe the 2018 Demographics of Wealth series sheds additional light on the deeply rooted sources of economic and financial disparities. Fruitful approaches to policy should be based on the facts established here.

Executive Summary of Essay No. 2

This essay explores the connections between a person's birth year and measures of his or her family's financial well-being, including income and wealth. We found that wealth losses occurred across the age spectrum around the Great Recession but that families younger than retirement age suffered the most and have rebounded slowly. Based on data from nearly 48,000 families born throughout the 20th century, we found that families headed by someone born in 1960 or later were less likely to have recovered by 2016 than older families.

We focused on six groups of families based on the birth decade—from the 1930s through the 1980s—of the family heads. We chose these decadal cohorts because they were the only ones whose typical (situated in the middle) family head was between 24 and 80 years old both before and after the financial crisis of 2008-09. We compared the median inflation-adjusted wealth of these groups to predicted levels achieved at various ages based on data from all families responding to the Survey of Consumer Finances between 1989 and 2016.

Our examination of the links between birth year and wealth revealed three important findings:

- **There is a pronounced life cycle of wealth.** The typical family's wealth traces out an upward sloping arc over most of its life cycle, beginning around zero in the early 20s and reaching a peak of about \$228,000 at age 72. The range of actual wealth accumulation across families is very large, but the typical family's experience is well-described as rapid initial growth in percentage terms followed by steady deceleration and eventual decline—albeit slight—throughout the rest of the life cycle. The shape of the wealth life cycle is influenced by economic and financial developments over time.
- **Members of all birth cohorts lost wealth around the Great Recession, but only typical families headed by someone born in 1960 or later had failed to get back on track by 2016.** Median wealth levels of all six decadal cohorts we studied were comfortably above their respective age-specific wealth benchmarks in 2007. The Great Recession reduced median wealth substantially among all six groups. The four youngest cohorts (1950s and later) dropped below their age-specific wealth benchmarks. The three youngest cohorts (1960s and later) remained below those benchmarks in 2016.
- **The 1980s cohort is at greatest risk of becoming a "lost generation" for wealth accumulation.** Wealth in 2016 of the median family headed by someone born in the 1980s remained 34 percent below the level we predicted based on the experience of earlier generations at the same age. The corresponding shortfalls of the 1960s cohort (-11 percent as of 2016) and the 1970s cohort (-18 percent) are worrying but are much smaller than their respective 2010 and 2013 shortfalls. Alone among the six decadal cohorts we studied, the typical 1980s family lost ground between 2010 and 2016, falling even further behind the typical wealth life cycle. This represents a missed opportunity because asset appreciation is unlikely to be as rapid in the near future as it was during the recent period. Two reasons for optimism are that the 1980s cohort has many years to get back on track and it is the most educated—hence, also potentially the highest-earning—group ever.

A Lost Generation? Long-Lasting Wealth Impacts of the Great Recession on Young Families

By William R. Emmons, Ana H. Kent and Lowell R. Ricketts

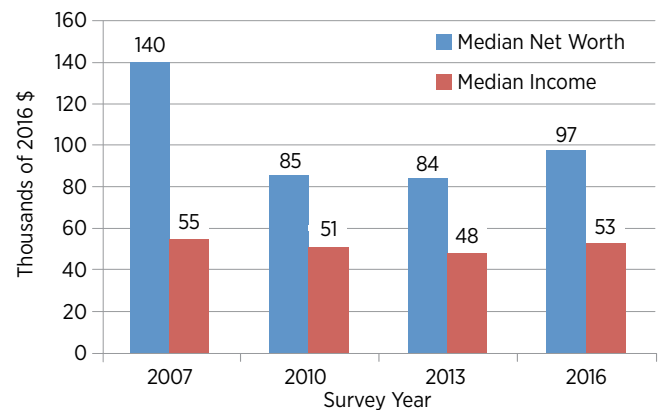
The Great Recession of 2008-09 inflicted deep and widespread losses of income and wealth on the typical American family, leaving both measures lower in 2016 than they were in 2007.¹ (See Figure 1.) Wealth losses occurred across the age spectrum, but families younger than retirement age suffered the most and have rebounded slowly.² (See Figure 2.) In contrast, typical incomes dropped much less than wealth among young (under 40) and middle-aged families (40-61). In the case of older families (62 and older), typical incomes never declined below the 2007 level.³ (See Figure 3.)

The fact that many families suffered large wealth setbacks during their prime earning and wealth-accumulation years raises the question of whether they will be able to rebuild their wealth to meet major saving goals, including for a home purchase, college tuition for their children and retirement. Will the typical family that was young or middle-aged at the time of the Great Recession become part of a “lost generation” that struggles to achieve life cycle milestones?

To judge whether particular birth cohorts—that is, groups of families whose heads were born during the same decade—are on track to meet their wealth-accumulation targets, we estimated typical life cycle wealth trajectories using data collected from 1989 to 2016. In other words, how much wealth would we expect a typical family to have at each age? We then compared the actual wealth levels for six groups of families—those headed by someone born in the 1930s, the 1940s, the 1950s, the 1960s, the 1970s and the 1980s—to these life cycle benchmarks.

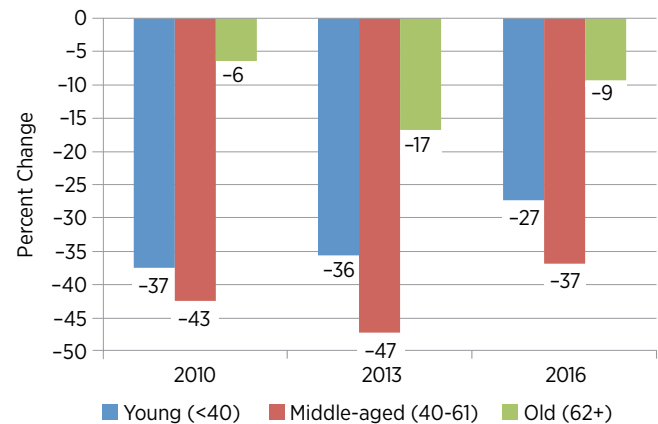
Using data from 47,776 families in the Survey of Consumer Finances (SCF) between 1989 and 2016,

Figure 1: Median Family Net Worth and Income



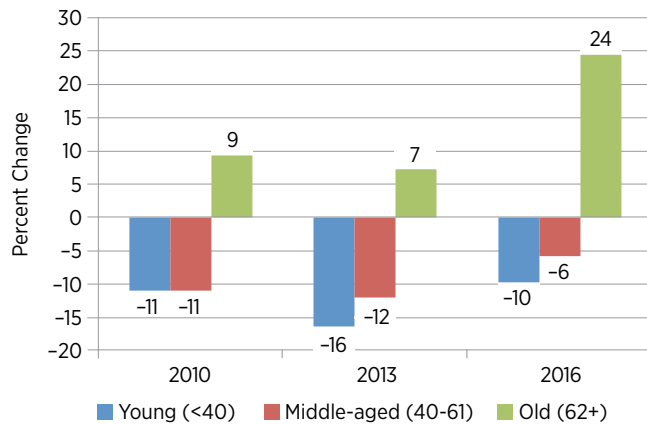
NOTE: See Sidebar 1 for more details on how income and net worth are measured in the Survey of Consumer Finances.

Figure 2: Change in Median Net Worth, Relative to 2007



NOTE: Each age group’s median net worth in 2010, 2013 and 2016 was compared to the same age group’s respective level in 2007.

Figure 3: Change in Median Income, Relative to 2007



NOTE: See note to Figure 2, replacing “net worth” with “income.”

we found that typical families headed by someone born in the 1960s, 1970s and 1980s were significantly below their wealth benchmark levels in 2016—by about 11, 18 and 34 percent, respectively. Despite also having suffered wealth losses during the recession, typical families headed by someone born in the 1930s, 1940s or 1950s were slightly above their age-specific wealth benchmarks in 2016. (See Figure 4.)

Can the cohorts born in 1960 or later get back on track? The younger the group, the more uncertain long-range wealth predictions must be. Nonetheless, we believe many families in the youngest cohort we studied here—respondents born in the 1980s—are at substantial risk of accumulating less

Table 1: Worst Wealth Shortfalls in a Single Year

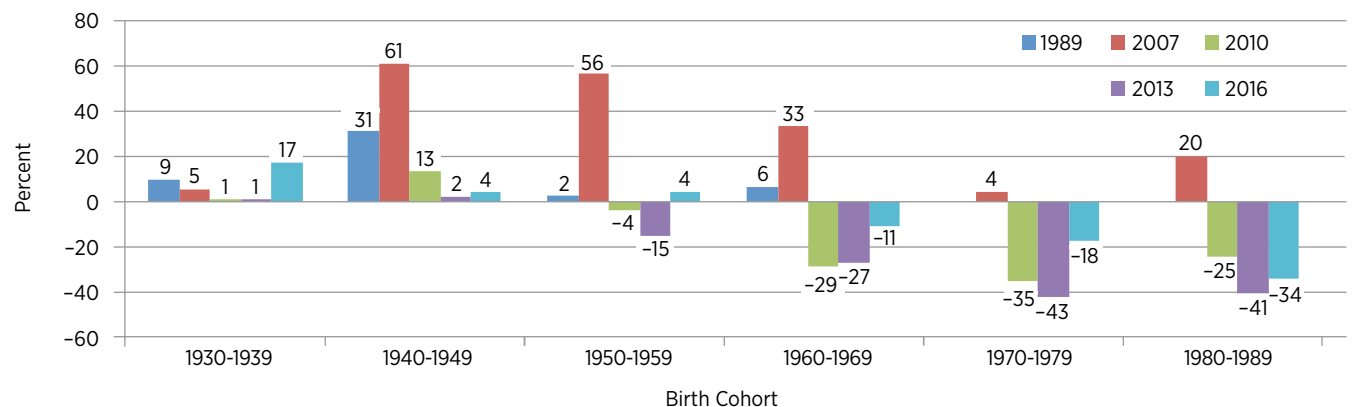
Rank	Year Observed	Average Age of Family Head	Birth Decade	Percentage from Age-Specific Benchmark
1	2013	39	1970s	-42.7
2	2013	29	1980s	-41.0
3	2010	35	1970s	-35.1
4	2016	32	1980s	-34.1
5	2010	46	1960s	-29.1
6	2013	49	1960s	-27.5
7	2010	26	1980s	-24.7
8	2016	42	1970s	-17.8
9	2013	59	1950s	-15.5
10	1992	28	1960s	-14.9

NOTES: A wealth shortfall is the percent difference between the actual median wealth for a birth cohort in a particular survey year and the predicted wealth at that age based on data from all families in all survey years of the SCF. All figures were adjusted for inflation. There were 50 cohort-year observations.

wealth over their life spans than the members of previous generations. Not only is their wealth shortfall in 2016 very large in percentage terms, but the typical 1980s family actually lost ground in relative terms between 2010 and 2016, a period of rapidly rising asset values that buoyed the wealth of all older cohorts. (See Table 1 for a list of the worst wealth shortfalls experienced by any birth cohort in a single survey year.)

In common with the 1970s cohort—which, as of 2016, ranked as the second most-at-risk cohort for

Figure 4: Deviation of Median Wealth from Predicted Value



NOTES: Predicted value was based on life cycle. For information on how median net worth was predicted, see Sidebar 2. Appendix 2 offers more-technical details.

The sources for all the tables and figures are the Federal Reserve’s Survey of Consumer Finances and authors’ calculations.

Sidebar 1: Family Income and Wealth

To measure income for the SCF, the interviewers requested information on the family's cash income, before taxes, for the full calendar year preceding the survey. The components of income in the SCF are wages, self-employment and business income, taxable and tax-exempt interest, dividends, realized capital gains, food stamps and other related support programs provided by government, pensions and withdrawals from retirement accounts, Social Security, alimony and other support payments, and miscellaneous sources of income for all members of the primary economic unit in the household. All income figures were adjusted for inflation to be comparable to values recorded in 2016.

Wealth is a family's net worth, consisting of the excess of its assets over its debts at a point in time. Total assets include both financial assets (such as bank accounts, mutual funds and securities) and tangible assets (including real estate, vehicles and durable goods). Total debt includes home-secured borrowing, or mortgages, other secured borrowing (such as vehicle loans) and unsecured debts (such as credit cards and student loans). Debt incurred in association with a privately owned business or to finance investment real estate is subtracted from the asset's value, rather than being included in the family's debt. All wealth figures were adjusted for inflation.

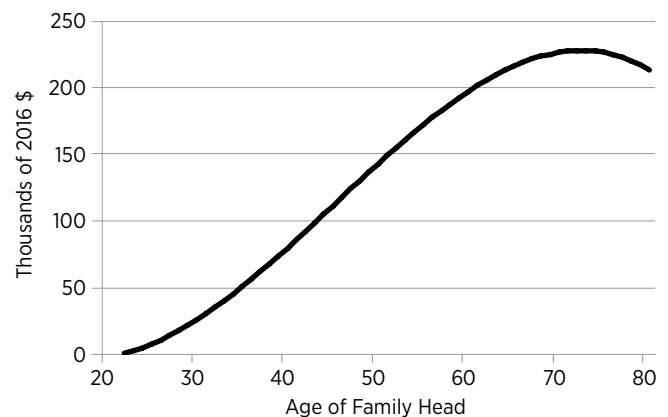
lifetime wealth underperformance, with a shortfall of 18 percent—the typical 1980s family also carries an extraordinarily high debt burden compared to previous cohorts. This debt, only some of which finances productive assets, increases the financial fragility of many young families, too.

This essay has four parts. Section I describes the life cycle of wealth and several broad changes in typical wealth trajectories that have occurred since 1989. Section II identifies the birth-year cohorts hit hardest by the Great Recession. Section III explores the prospects for hard-hit cohorts to rebuild their wealth in the coming years. Section IV concludes. Four sidebars provide additional details on our data, methodologies and related topics beyond the scope of this essay. Two appendixes explain how we chose the ages and birth years to study and provide technical details of how we estimated typical wealth at each adult age.

I. The Life Cycle of Wealth

Young families typically have very little wealth. In fact, if someone starts out adult life with student loans or other debt, net worth even could be negative. (See Sidebar 1 for definitions of income and wealth.) Near the end of the life cycle, families in their early 70s typically have accumulated a significant amount of wealth before spending down

Figure 5a: Predicted Net Worth by Age of Family Head: Ordinary Scale

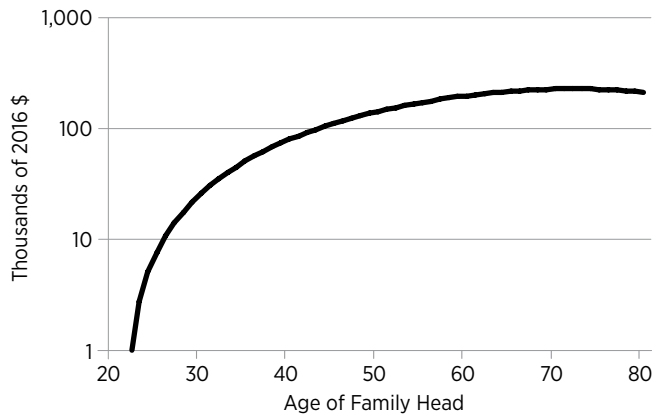


NOTES: See Sidebar 2 and Appendix 2 for more details regarding life cycle predictions. The figures present the predicted median life cycle of net worth using an ordinary scale (Figure 5a) or a log scale (Figure 5b) for the y-axis.

some of it in retirement. Of course, typical wealth life cycles differ somewhat depending on demographic factors such as education levels, and race and ethnicity, which we discuss in more detail elsewhere in this series.⁴

A plot of typical wealth levels at each age between the beginning and end of adult life traces out the life cycle of wealth—rising rapidly at first before peaking in the early 70s.⁵ (See Figure 5a.) Transformation of the vertical axis into a logarithmic (log) scale facilitates visual comparisons at very different wealth levels.

Figure 5b: Predicted Net Worth by Age of Family Head: Log Scale



NOTES: In a semi-logarithmic chart like Figure 5b, equal vertical distances represent equal percentage differences. See Sidebar 3 for more information about using log scales.

(See Figure 5b.) See Sidebar 3 for a discussion of why we use the log scale in some charts.

The flattening of the predicted wealth trajectory in Figure 5b across the life cycle clearly shows that a typical family’s wealth accumulation is most rapid (in percentage terms) early in life. This reflects several factors unique to early adulthood:

- Rising income, which makes saving easier;
- Development of regular saving habits, sometimes including “forced saving” in the form of a monthly mortgage payment;
- Better cash management and fewer delinquencies, which are costly due to penalties, higher borrowing costs and less access to credit; and
- The larger impact of a dollar of additional saving on (low) accumulated wealth.

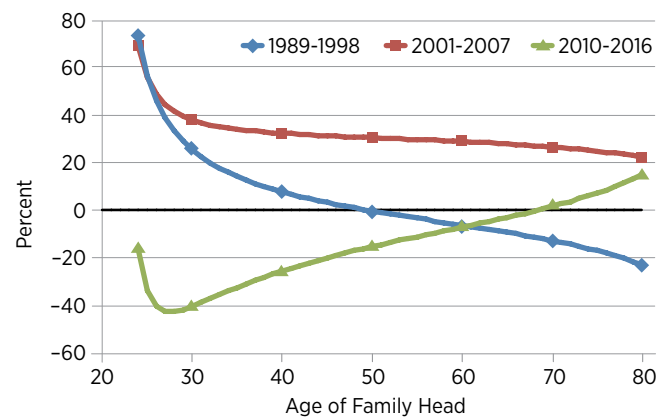
The downward trend in wealth very late in life is more gradual than a theoretical life cycle model predicts: The dynamics of wealth at older ages are complex. Spending down accumulated wealth begins very late in life, if ever, for the typical family. In this essay, we predicted wealth through age 80 but focused primarily on wealth before retirement age. (See Sidebar 4 for a discussion of wealth at advanced ages.)

Trends in the life cycle of wealth. Figure 6 depicts three distinct subperiods in which the predicted wealth life cycle departed notably from its long-run (1989–2016) average shape. (See Sidebar 2 and Appendix 2 for explanations of our estimation methods.)

Sidebar 2: Predicting Life Cycles

We predicted a life cycle pattern for several variables (family income and net worth, cohort homeownership, saving and delinquency rates) using data from all families across all waves of the SCF. The life cycle is modeled as a function of the family respondent’s age. For example, for the life cycle of wealth, we looked at each family’s wealth and its family head’s age; then we plotted the line that best fit all the data. This helped us predict median wealth across families at each age. Importantly, because this relationship can vary between time periods, we controlled for the year in which respondents completed the survey. This effectively removed the influence of time period, and allowed us to look at a purer relationship between age and each variable. For more-technical details of our estimation method, see Appendix 2.

Figure 6: Differences from 1989 to 2016 in Predicted Wealth



NOTES: The lines show percent differences at each age between the predicted median wealth level for a subperiod and the corresponding predicted median wealth level using all sample data. The subperiods include data from 1989, 1992, 1995 and 1998; 2001, 2004 and 2007; and 2010, 2013 and 2016, respectively. See Sidebar 2 and Appendix 2 for more details on life cycle predictions.

The sources for all the tables and figures are the Federal Reserve’s Survey of Consumer Finances and authors’ calculations.

Sidebar 3: Charts with a Logarithmic Vertical Axis

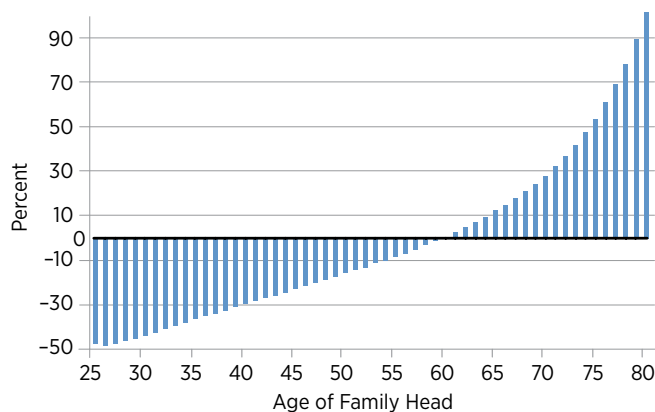
We used a logarithmic (or log) scale in some charts because wealth accumulation, like other forms of growth, is exponential—that is, it compounds over time. We often care about growth rates or percentage differences rather than the level of or absolute differences in wealth. The log scale allowed us to illustrate growth rates consistently. This is because a log scale straightens the compound-growth curve, making a constant growth rate appear as a straight line. If we did not make this adjustment, it would be impossible to compare growth rates or percentage differences at different places in a chart.

When the vertical axis is a log scale, equal vertical distances represent equal percentage differences wherever they occur. In addition, the slope of any line segment is proportional to the rate of change between its endpoints—steeper lines correspond to faster growth or larger percentage differences. These features are particularly useful when a chart represents a broad range of values.

For example, we estimated that the typical net worth of a family headed by someone who is 24 years old is about \$5,072. The net worth of the family of a typical 30-year-old is about \$25,989, or 412 percent more. The family of a typical 48-year-old has a net worth of \$130,454, which is 402 percent more than the 30-year-old level.

On an unadjusted graph, the dollar difference between the 24- and 30-year-olds' net worth would appear small—just \$20,917. The dollar difference between the 30- and 48-year-olds' net worth would appear large—about \$104,465. But, in fact, the percentage differences noted above are essentially the same. On a log scale, the vertical distances between the wealth of the typical 24- and 30-year-old and between the 30- and 48-year-old would be virtually identical.

Figure 7: Change in Predicted Wealth between 1989 and 2016



NOTE: The columns represent the percent change between 1989 and 2016 at each age. For example, predicted wealth at age 25 in 1989 was \$13,230; in 2016, it was \$6,951—a decline of 47.5 percent.

The subperiods are:

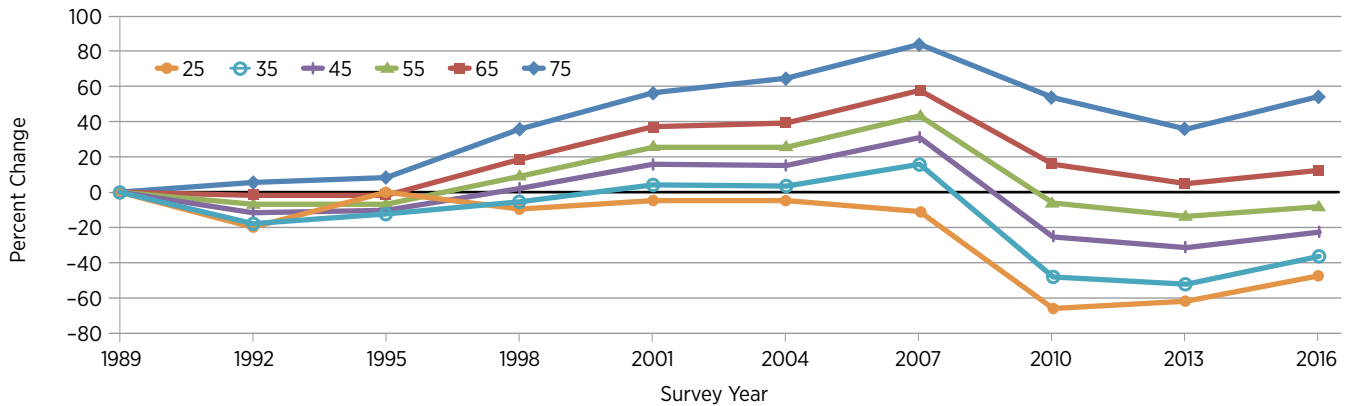
- The **pre-housing-bubble period** (1989, 1992, 1995, 1998), when young and middle-aged families typically had wealth above their long-term trend, and old families were slightly below (blue line);
- The **housing-bubble period** (2001, 2004, 2007), when all ages, but especially young families, had wealth above their long-term trend (red line); and
- The **post-Great Recession period** (2010, 2013, 2016), when the typical wealth of old families remained above their long-term trend, but the wealth of middle-aged and especially young families dropped below their respective long-term average levels (green line).

Figure 7 shows the percent change between 1989 and 2016 at each age in predicted wealth. The changes are striking—almost a 50-percent decline among the youngest families, while the very oldest families enjoyed a 100-percent-plus increase.

The shifting life cycles of wealth. The patterns depicted in Figure 6 provide two important insights into the shifting fortunes of various age groups. First, there are notable differences across subperiods in predicted levels of wealth—unusually high in the housing-bubble period and much lower at other times. Second, there is a distinct steepening of the relationship between age and wealth from the pre-housing-bubble period to the post-Great Recession period. On balance, wealth has shifted away from younger families toward older families.

Figure 8 summarizes long-term cumulative changes in predicted levels of wealth at several ages

Figure 8: Change in Estimated Age-Specific Wealth Levels since 1989



NOTE: Each age group's predicted net worth at each SCF year was compared to the predicted level for the group of people who were that age in 1989. For example, the predicted wealth at age 25 in 2010 was \$4,504, which was 66 percent below the predicted wealth of a typical family headed by someone age 25 in 1989.

The sources for all the tables and figures are the Federal Reserve's Survey of Consumer Finances and authors' calculations.

between 25 and 75. The typical 65- and 75-year-old-headed families were richer in 2016 than in 1989, while the reverse is true for all younger ages shown. Together, Figures 6, 7 and 8 clearly show that the life cycle of wealth has steepened dramatically, with families aged 60 at the inflection point. Even before 2007, the steepening trend was visible, but the Great Recession and its aftermath significantly widened the wealth gap between young and old.

II. The Hardest-Hit Generations

Comparisons over time of typical wealth life cycles provide an informative look at the conditions facing families at different life stages but provide little direct insight into the fates of particular families as they traverse their own life courses. A 25-year-old family respondent in 1989, for example, was 52 in 2016; a 55-year-old family respondent in 1989 was 82 in 2016. How do trends at specific ages affect individual families over time as they themselves reach different ages?

To understand how the members of particular birth years have fared, we tracked six decadelong cohorts over almost three decades—families headed by people born in the 1930s, 1940s, 1950s, 1960s, 1970s and 1980s. This method creates “quasi-panels” of families grouped by birth decade that are sampled in each SCF wave between 1989 and 2016. To be clear, we do not track individual families across time; instead, each sample group is selected using birth year as the sole criterion for inclusion in a decadal group.⁶ (See Appendix 1 for details of our sample selection.)

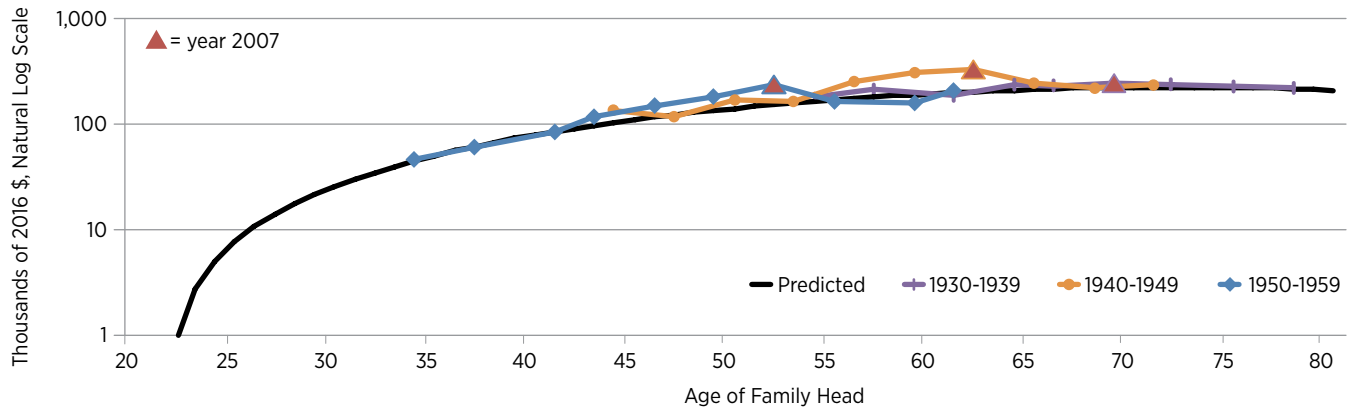
Sidebar 4: Wealth in Old Age

The conventional life cycle model of spending and saving taught in a beginning economics course traces out a hump-shaped wealth trajectory that peaks when a person enters retirement and then declines toward zero near the end of life. In fact, typical life cycle wealth trajectories revealed by the SCF are almost flat during retirement rather than declining rapidly toward zero.

Rather than disproving the basic life cycle model, this evidence reflects several factors unique to old age that are not incorporated in the simplest model. Some of the factors that explain why old families typically do not spend all of their wealth include:

- Bequest motives: intentions to leave wealth to heirs or charities;⁷
- Unpredictable lifespans and low rates of wealth annuitization (the purchase of insurance contracts that hedge against outliving your savings);⁸
- Concerns about medical expenses, including gaps in health insurance coverage and uncertain out-of-pocket expenditures;⁹
- Asset illiquidity (the difficulty of accessing wealth in the form of housing equity or equity in a small business or real estate); and
- Survivorship bias (the distortion in surveys like the SCF resulting from the fact that people who have survived to an old age are more likely to have been well-off when younger than the average member of their birth cohort).¹⁰

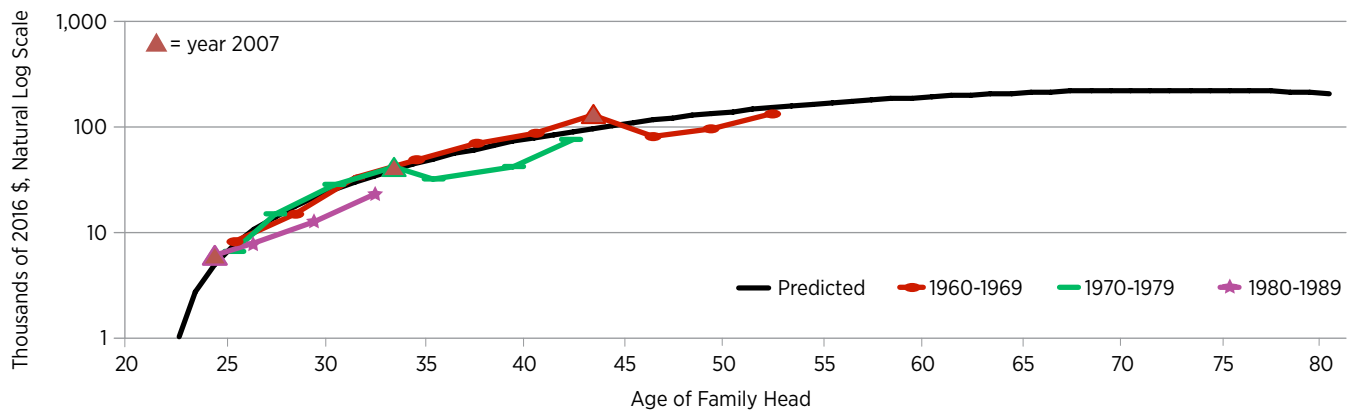
Figure 9a: Predicted vs. Actual Median Net Worth, Family Heads Born 1930-1959



NOTES: See Appendix 1 for more details on how birth cohorts were constructed and how their actual observed wealth was estimated and matched to predicted values.

In this and all subsequent figures, the observation for the year 2007 is highlighted for each cohort with a triangular data point in red.

Figure 9b: Predicted vs. Actual Median Net Worth, Family Heads Born 1960-1989



The sources for all the tables and figures are the Federal Reserve's Survey of Consumer Finances and authors' calculations.

Three post-1960 cohorts. First, consider a family headed by someone who was 52 years old in 2016; this person was born in 1964. The typical 52-year-old-headed family in 2016 was about 11 percent, or some \$16,800, below the wealth level we would predict based on the experiences of all similarly aged SCF families.¹¹ At first glance, this shortfall does not seem extreme or insurmountable. However, peak inflation-adjusted income and saving typically occur in one's 40s or 50s. Thus, people in their 50s face a limited number of remaining high-saving years. Moreover, the high returns on housing and financial assets in recent years are unlikely to continue in future years.¹² Thus, catching up to the wealth benchmarks established by earlier generations is possible but no simple feat for the typical family respondent born in the 1960s.

Next, consider a typical 42-year-old family respondent in 2016, who was born in 1974. This respondent's family was 18 percent (\$16,400) short of the wealth level we predicted for age 42. The likelihood that asset returns will not be as high in the future as they were in recent years is a major concern for this group, too.¹³

Finally, consider a typical 32-year-old family respondent in 2016 (born in 1984). This respondent's family was 34 percent (\$12,000) below the 32-year-old benchmark established by earlier generations. Like the members of the 1970s cohort, the typical 1980s family also had higher debt in relation to both income and assets than any previous generation at the same ages, creating headwinds to wealth accumulation and risks to financial stability when setbacks occur. On the optimistic side, young

Table 2: Relative Wealth Positions of All Cohorts in SCF Years

Age	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	Age	1930-1939	1940-1949	1950-1959	1960-1969
24					19.9	52			56.3	(10.8)
25			6.2	(12.3)		53		4.8		
26					(24.7)	54	9.4			
27				5.4		55			(4.1)	
28			(14.9)			56		45.9		
29					(41.0)	57	18.1			
30				9.5		58				
31			9.5			59		64.6	(15.5)	
32					(34.1)	60				
33				4.1		61	(5.3)		3.8	
34	2.3		7.1			62		61.1		
35				(35.1)		63				
36						64	13.2			
37		(1.1)	13.6			65		13.3		
38						66	4.2			
39				(42.7)		67				
40			10.0			68		1.8		
41		(2.5)				69	8.2			
42				(17.8)		70				
43		22.1	33.0			71		4.2		
44	31.3					72	5.1			
45						73				
46		28.7	(29.1)			74				
47	(5.2)					75	0.8			
48						76				
49		35.0	(27.5)			77				
50	18.5					78	0.8			
51						79				
						80				

NOTES: Each entry shows the percent difference between a cohort’s median wealth in an SCF year and the corresponding predicted median wealth level at the average age of the cohort at that time. For example, when the average family head in the 1950-59 cohort was 34 (survey year 1989), median wealth of the cohort was 2.3 percent above the predicted level. Only the 1940s, 1950s and 1960s cohorts were on average between the ages of 24 and 80 in every one of the 10 SCF waves.

families today have more education on average, which can translate into higher earning potential if high income returns on education hold up.

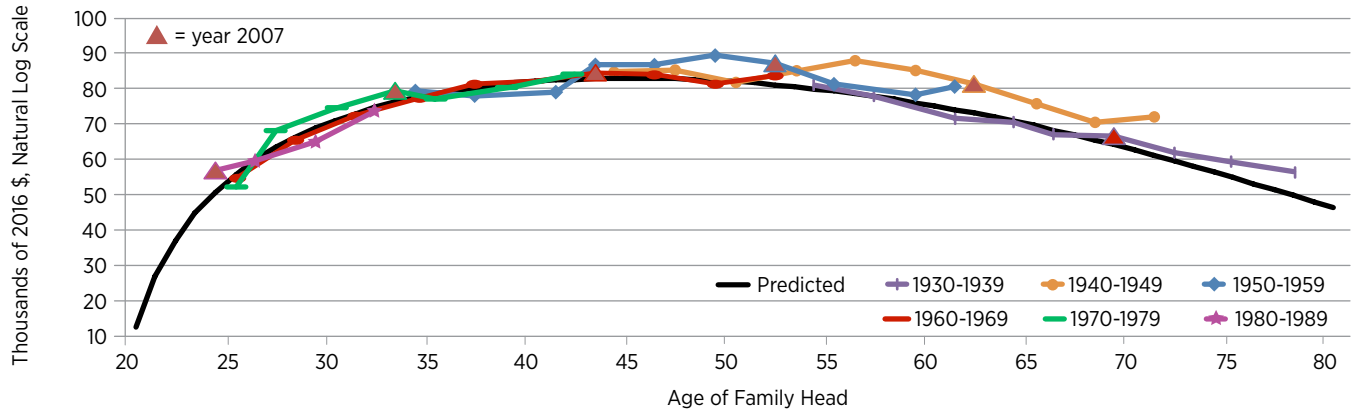
Quantifying wealth shortfalls by birth decade.

Figures 9a and 9b superimpose actual median wealth levels of families born in each of the six decades we tracked on the predicted wealth trajectory derived from the entire sample. Actual median wealth levels of the cohorts born before 1960 generally were above the corresponding predicted levels throughout the years we observed them. The 1930s and 1940s cohorts lost

wealth after 2007, but remained above their age-specific benchmarks. (See Figure 9a.) The 1950s cohort fell below the predicted levels in 2010 and 2013, but exceeded it again by 2016.

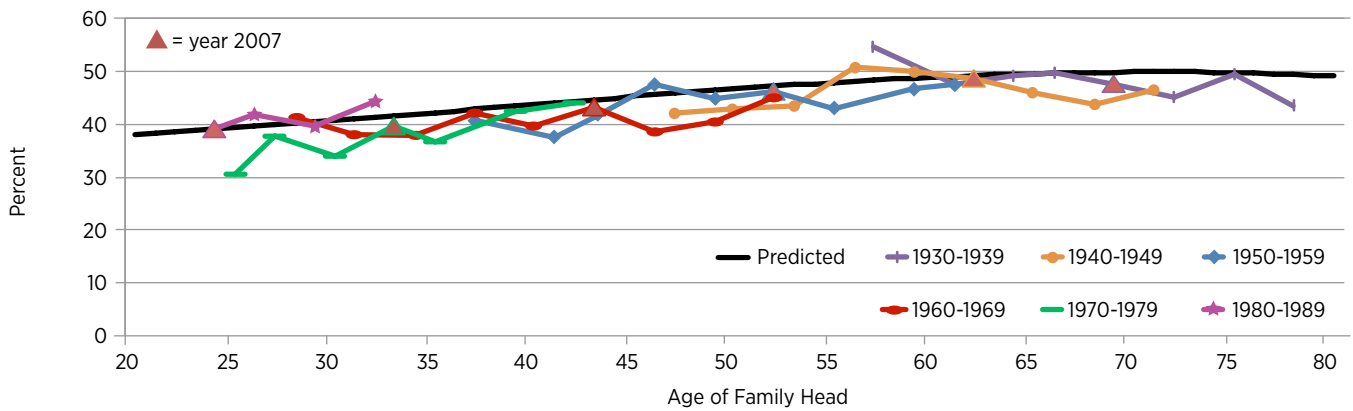
Cohorts born in 1960 or later, on the other hand, were moved well below benchmark levels by the Great Recession and remained below them through 2016. (See figures 4 and 9b.) Table 2 displays percent deviations from age-specific benchmark wealth levels for all six cohorts as they traversed their life cycles between 1989 and 2016.

Figure 10: Predicted vs. Actual Median Income



NOTE: For figures 10 through 14, see Appendix 1 for more details on birth cohorts and estimated and predicted values.

Figure 11: Predicted vs. Actual Saving Share



NOTES: Members of a family are considered actively saving if they reported that over the past year, they spent less than their income. This spending does not include any investments they had made. The figure shows the actual or predicted share of a cohort that actively saved in the year of the survey. This question was not asked during the 1989 survey wave. For more information, see question X7510 in the SCF codebook.

The sources for all the tables and figures are the Federal Reserve's Survey of Consumer Finances and authors' calculations.

III. Why Were Young Families Hit So Hard?

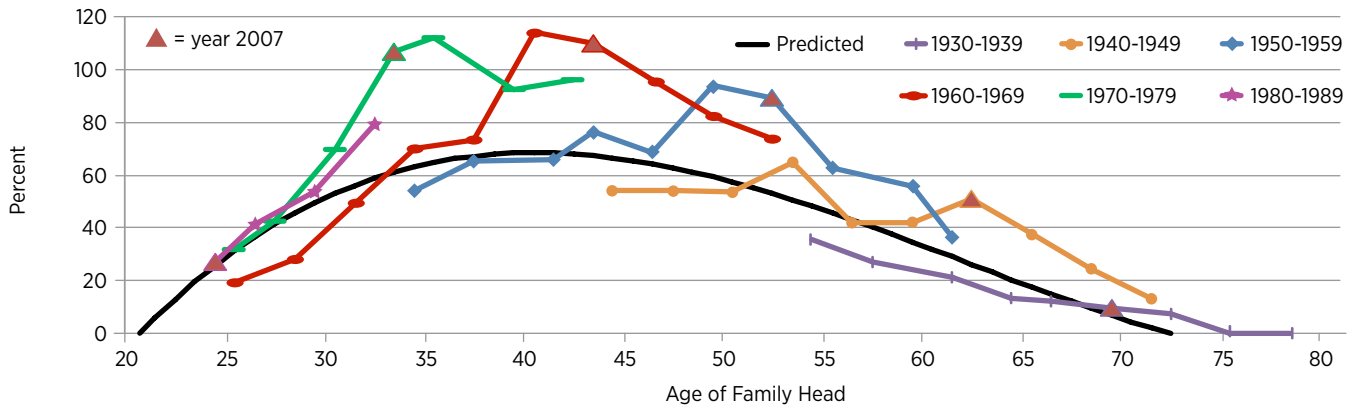
To shed more light on why families headed by someone born in 1960 or later typically are below their age-specific wealth benchmarks—and to gauge their potential to recover—we looked at several financial indicators, and trends in income and saving. Income and saving trends appear to be relatively unimportant, while several financial indicators—especially debt and homeownership—loom large.

Income and saving. A family's income is a key determinant of wealth, as higher incomes allow greater saving. Higher income also may signal the existence of other traits that could lead to greater wealth accumulation, such as patience, cognitive

and noncognitive abilities, and specific knowledge (e.g., numeracy), that could improve financial decision-making. Higher income also may be associated with access to good wealth-building institutions, such as employer-provided and -subsidized health insurance and retirement plans. Unusually low incomes among members of young cohorts therefore would be a plausible source of wealth shortfalls if they had occurred.

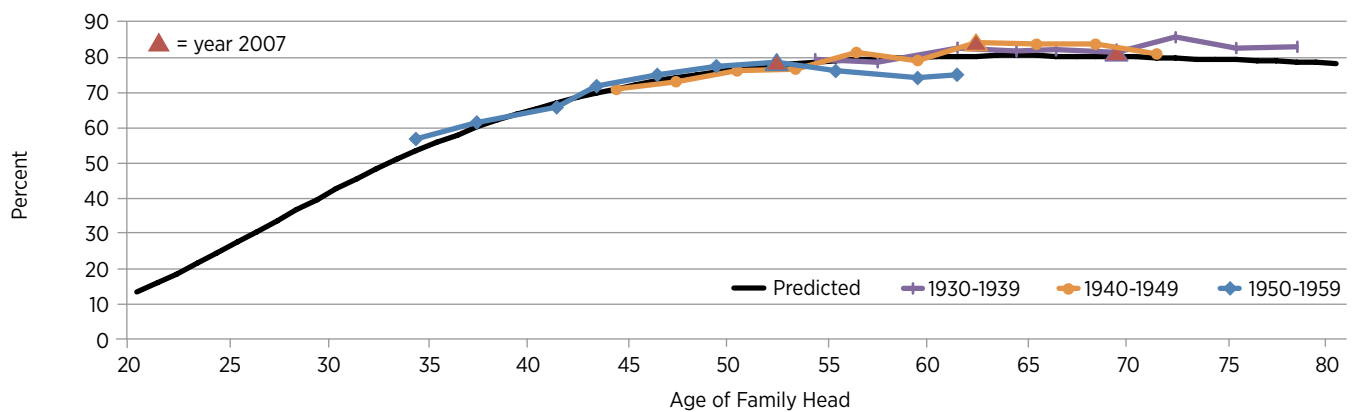
SCF evidence does not support the hypothesis that low incomes have contributed to low wealth among families whose heads were born after 1960. Figure 10 shows that, relative to the predicted income life cycle we estimated using all SCF families, the

Figure 12: Predicted vs. Actual Median Debt to Income



NOTES: A household's "usual" income is used for the denominator in the debt/income ratio. Respondents were asked whether their household incomes in the past year were unusually high or unusually low. Given either response, the respondents were asked to provide their household incomes in a "normal" year. We used that measure where relevant as a type of permanent income, insulated from yearly income fluctuations that were perceived as temporary. For more information, see question X7650 in the SCF codebook.

Figure 13a: Predicted vs. Actual Homeownership Rates, Family Heads Born 1930-1959



NOTE: The homeownership rate was calculated as the percentage share of households in each group reporting that they had any housing assets.

typical family headed by someone born in the 1960s, 1970s and 1980s has fared well. To be sure, families headed by someone born before 1960 have done even better, but there is no reason to believe that income shortfalls either before or after the Great Recession are an important source of wealth shortfalls.

A low propensity to save also would be a plausible source of low wealth. However, Figure 11 suggests that, as with income, there is nothing unusual about the saving habits of younger cohorts. Indeed, most groups appear to save somewhat less than the predicted level, but this is true of all the cohorts we studied. The Great Recession appeared to lower the share of families that saved across all birth cohorts,

but these rates then recovered. In light of the large wealth shortfall facing the 1980s cohort, it is encouraging that this cohort saved at higher rates than the 1970s cohort at the same ages.

The likely culprits for 1960s and 1970s families: houses and debt. Debt and homeownership are more likely culprits in explaining why families whose heads were born in 1960 and later were hit so hard by the Great Recession and have failed to recover completely. Beginning with families whose heads were born in the 1930s, each successive decadal cohort generally has piled up more debt relative to income at a given age than the preceding cohort. (See Figure 12.) This trend was inter-

Figure 13b: Predicted vs. Actual Homeownership Rates, Family Heads Born 1960-1989

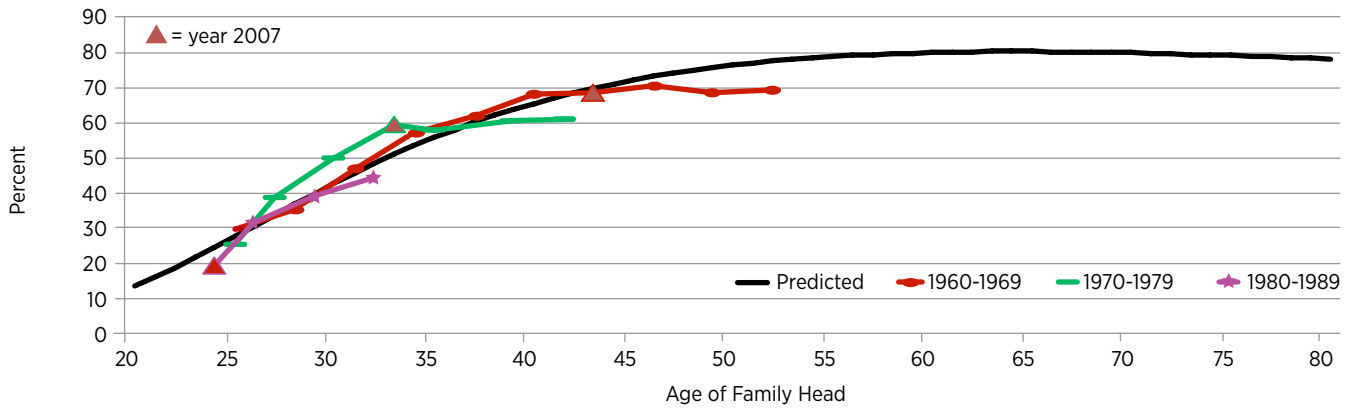
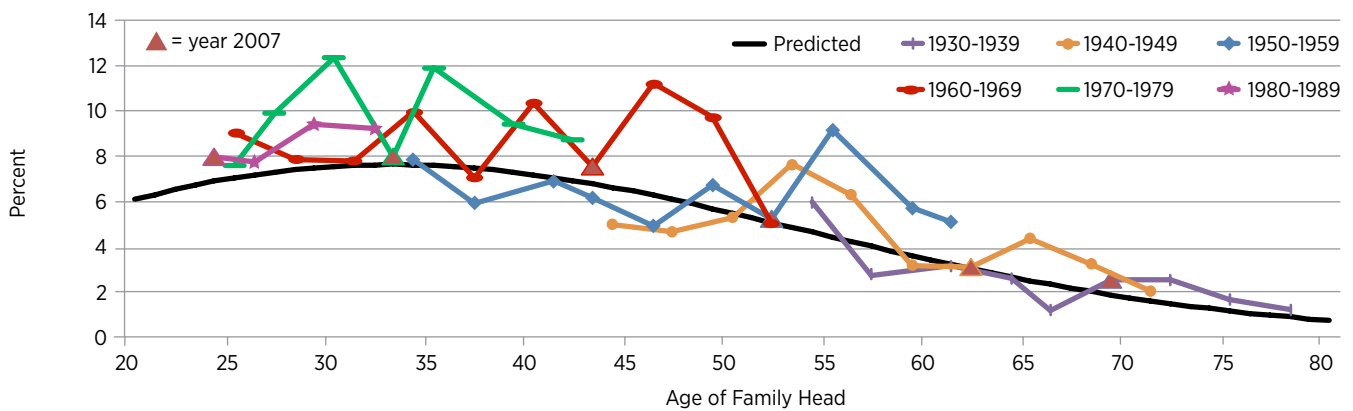


Figure 14: Predicted vs. Actual Delinquency Rates



NOTES: The delinquency rates were calculated as the percentage share of households in each group reporting that they were behind on their debt obligation payments for two months or more in the past year. For more detail, see question X3005 in the SCF codebook.

The sources for all the tables and figures are the Federal Reserve's Survey of Consumer Finances and authors' calculations.

rupted by 1980s families after the Great Recession, but one should not exaggerate the improvement this represents. The typical 1980s family, alongside 1970s families, is on track for higher debt burdens at any given age than any previous cohort. Although 1970s and 1980s families were young during the housing-bubble period, they also show signs of being highly debt-burdened. For example, compared to the median 1960s family, which had a debt-to-income ratio of about 50 percent in its early 30s, the median 1970s family had a 107-percent ratio and the median 1980s family had an 80-percent ratio at that age.

For many families, the largest amount of debt is in the form of a mortgage. Moving into homeownership at an early age made many young families

vulnerable to the economic and financial shocks of the Great Recession. Figures 13a and 13b contrast the homeownership rates of families whose heads were born before and after 1960, respectively. Families headed by someone born in the 1960s and 1970s had homeownership rates above predicted levels before the Great Recession. By 2016, those groups' homeownership rates had fallen significantly below predicted levels. Corresponding to the abrupt flattening of homeownership trajectories for these groups, debt-delinquency rates have been high for all cohorts born in 1960 and later, a sign of burdensome debt. (See Figure 14.)

Together, high debt ratios, high homeownership rates and high delinquency rates among 1960s and 1970s families point to housing and mortgage

debt as probable sources of important wealth losses during the Great Recession. Conversely, as home values recovered in recent years, many of these homeowners benefited, as demonstrated by significant reductions in typical wealth shortfalls relative to benchmark levels. (Recall Figure 4 and Table 2.)

Not like their elders. Families whose heads were born in the 1980s are different. They generally were too young to be homeowners during the housing bubble; in fact, only 19 percent of 1980s families were homeowners in 2007. Even by 2016, fewer than 45 percent of 1980s families were homeowners. The predominant type of debt they owe is non-mortgage debt, including student loans, auto loans and credit card debt. Because none of these types of debt finance assets that have appreciated rapidly during the last few years—such as stocks and real estate—they have received no leveraged wealth boost like that enjoyed by older cohorts. The 1980s cohort was unique in falling even further behind its wealth benchmark between 2010 and 2016. Given the prospect of lower asset returns in the future than in the recent past, 1980s families face a formidable challenge in building wealth rapidly enough to reach benchmark levels set by earlier generations.

IV. Will Young Families Become a Lost Generation for Wealth Accumulation?

Two key factors on the side of 1980s families are time and education. The oldest member of the 1980s generation was just 36 in 2016, while the youngest was only 27. These families have many more years to earn, save and accumulate wealth. At the same time, this is the most highly educated generation we evaluated. Pursuing a college degree can be very expensive and offers no guarantees. Nonetheless, the average return is substantial.¹⁴ It is possible that the income and wealth trajectories of this generation will be steeper than those of earlier generations, allowing many families to achieve their wealth goals in the end.

Yet the task faced by the typical 1980s family should not be underestimated. This cohort has been the slowest to recover from the Great Recession. In fact, its wealth shortfalls (relative to the age-specific benchmark levels we predicted) were the only ones to worsen from 2010 to 2016.

Historically, high asset returns in recent years have not prevented the 1980s cohort from falling further behind its wealth benchmark between 2010 and 2016. And, with the exception of the 1970s cohort, this group may be on track to bear the heaviest debt burden ever.

Income, saving and homeownership trends have been unexceptional for the 1980s cohort so far. Efforts to enhance the first two and a measured approach to the third—including careful management of mortgage debt—would serve this generation well. Cautious use of non-mortgage debt also will be important.

It is far too soon to know whether families headed by someone born in the 1980s will become members of a lost generation for wealth accumulation. To be sure, there are grounds for optimism. Yet there are reasons to be very concerned about the financial outlook for many young Americans. ■

Appendixes

Appendix 1: Sample Selection and Focus of Analysis

Table 3 provides the average age and sample representation for all decadelong cohorts born in the 20th century. We used all SCF families when estimating life cycles for all variables of interest but truncated the sample in two ways in our analysis.

First, we focused only on family respondents between the ages of 24 and 80. Family heads under 24 are “immature” both because many are in the process of transitioning to a new family structure (marriage or long-term partnering) and because their formal education may not be complete. To be sure, these transitions also occur after age 24 for some people, but we avoided restricting our sample any more than was necessary. Families over 80 are very likely to be unrepresentative of their birth cohorts at earlier stages in their lives due to survivorship bias, so we excluded them, too. Again, an argument could be made that a different (probably younger) cutoff age might be desirable, but we believe 80 is a defensible choice.

The second way we limited our analysis was to follow only families headed by someone born between 1930 and 1989. In other words, we did not discuss results for families whose heads were born

in the 1900s, 1910s, 1920s and 1990s, even though they were included when we estimated life cycle trajectories. Family heads born between 1900 and 1929 already were over 80 by 2010, the first SCF year after the Great Recession. Thus, we could not track the Great Recession’s effects on their wealth within our chosen age range. Family respondents born in 1990 or later were under 18 in 2007, the last SCF year before the Great Recession. Therefore, we could not draw before-and-after comparisons for this group either.

Many different potential birth cohorts were considered prior to settling on the ranges presented here. The 10-year bands offer easier identification (born in the ‘80s, born in the ‘70s, etc.), as well as a robust sample size. Along with the benefits, there is one complication with this approach: Our life cycles were predicted from age; at the same time, the median net worth and similar statistics estimated for birth cohorts were generated using the responses for all households within a 10-year range. Comparing the estimate for the cohort to the prediction from the life cycle trend requires a single age to identify the cohort and place it in our

Table 3: Average Age and Sample Representation

Birth Cohorts	Mean Age in 1989	Mean Age in 2007	Mean Age in 2016	Sample Size in Each Survey Wave									
				1989	1992	1995	1998	2001	2004	2007	2010	2013	2016
1900-1909	83.1			121	100	57	35	17	5	0	0	0	0
1910-1919	74.3	90.3		342	306	270	195	117	68	58	29	10	0
1920-1929	64.5	81.8	89.6	545	619	550	449	417	292	257	217	152	89
1930-1939	54.3	72.3	81.0	593	608	654	594	544	515	435	510	417	370
1940-1949	43.7	62.2	71.0	686	814	870	894	854	920	836	995	875	853
1950-1959	34.4	52.2	61.3	571	811	933	965	1,086	1,078	1,056	1,484	1,298	1,370
1960-1969	25.5	42.5	51.7	273	555	732	722	797	887	868	1,402	1,310	1,299
1970-1979	18.8	32.6	41.6	7	87	233	438	543	575	606	1,097	1,015	1,062
1980-1989		23.9	31.6	0	0	0	14	66	178	301	705	768	878
1990-1999			23.3	0	0	0	0	0	0	0	43	170	327

NOTE: Sample size was rounded wherever appropriate.

The sources for all the tables and figures are the Federal Reserve’s Survey of Consumer Finances and authors’ calculations.

wealth life cycle graphs. We calculated the average age among all households within the cohort and rounded to the nearest integer. We paired that age with the statistic estimated for the cohort. This is an inexact matching process, and the value estimated could be associated with a household that is slightly younger or older than the average age in the cohort. We believe the magnitude of the potential error using this approach is relatively small and outweighed by the ease of exposition.

Appendix 2: Life Cycle Regressions

The life cycle trend for continuous variables (net worth, debt-to-income ratio) was estimated using median multiple regression. The trends used in comparisons with birth cohorts were modeled as:

$$Y_i = C + \beta_1 A_i + \beta_2 A_i^2 + \beta_3 A_i^3 + Year_i$$

where Y was the outcome of interest for household i ; A is the age of the respondent; and $Year$ was a vector of estimated coefficients and respective binary variables for each of the SCF waves, omitting 1989.

For variables reflected as population shares (owning a home, rates of delinquency of 60-plus days in a year), we relied on probit regression, a nonlinear regression model designed for binary dependent variables. A probit regression models the probability that Y (the dependent variable) equals 1. Our full specification was modeled as follows:

$$\Pr(Y_i = 1) = \Phi(C + \beta_1 A_i + \beta_2 A_i^2 + \beta_3 A_i^3 + Year_i)$$

where Φ was the cumulative standard normal distribution.

The sample size was 47,776 families surveyed across all years of the SCF. The comparison of life cycle trends by subsets of survey years simply dropped the vector of survey year binaries from the specification and omitted all observations not in the survey years of interest. All estimates incorporated nonresponse-adjusted sample weights.

Endnotes

- 1 Throughout the essay “typical” describes the family in the middle or at the median.
- 2 Household ages are defined as the age of the survey respondent. We use the terms “family” and “household” interchangeably. We sometimes refer to family respondents as “family heads.”
- 3 All dollar figures in this essay are adjusted for inflation and are expressed in terms of 2016 purchasing power.
- 4 The first essay in this series (published in February) discussed the role of both one’s own and one’s parents’ education in determining one’s income and wealth. (See Emmons, Kent and Ricketts, February 2018.) The third essay will discuss race, ethnicity and wealth. The 2015 series of *The Demographics of Wealth* analyzed race and ethnicity, education, and age and birth year, respectively, using SCF data through 2013. (See Emmons and Noeth, February, May and July 2015.)
- 5 We used data from all ages to estimate the life cycle of wealth but focused on ages 24 through 80 in this essay. (See Appendix 1 for details of our sample selection.)
- 6 True panels are available in other datasets, such as the Panel Study of Income Dynamics (PSID). But direct comparisons have shown that SCF quasi-panels perform well in many respects and are superior in capturing family wealth, especially at the high end. (See Bosworth and Anders, 2008, and Pfeffer et al., 2016.)
- 7 See Modigliani (1988).
- 8 The inherent asymmetry of insuring against a scenario of outliving your savings leads to positive net worth upon death, on average, among families seeking to self-insure.
- 9 See De Nardi, French and Jones (2010).
- 10 See Bosworth and Anders (2008).
- 11 We explain in Sidebar 2 and Appendix 2 how we predict typical wealth at each age. The earliest birth year included in our sample of 52-year-old family heads was 1937—these family heads were 52 years old in 1989—and the latest was 1964.
- 12 See Table 1 in Emmons (2017). The average annual rate of household wealth accumulation between 2011 and 2016 was more than three times its average long-term rate.
- 13 Between 1986 and 2012, which roughly corresponds to our sample period, almost half of wealth accumulation was due to capital gains—that is, rising asset prices. (See Table 2 in the working paper version of Saez and Zucman (2016).) Thus, a period of below-average asset-price increases would slow wealth accumulation significantly.
- 14 See Emmons, Kent and Ricketts (2018).

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Cash on Hand Is Critical for Avoiding Hardship

By Emily Gallagher and Jorge Salas

Would you would someone keep \$1,000 in a low-earning bank account while earning \$2,000 on a credit card that charges a double-digit percentage interest rate? Our research suggests that keeping a cash buffer greatly reduces the risk that a family will miss a payment for rent, mortgage or a recurring bill, will be unable to afford enough food or will be forced to skip needed medical care within the next six months.

Many families struggle to make ends meet. A Federal Reserve survey estimated that almost half of U.S. households could not easily handle an emergency expense of just \$400.

Should more families be encouraged to hold a liquidity buffer even if it means incurring more debt in the short term?

Linking Balance Sheets and Financial Hardship

Using a novel data set we investigated which types of assets and liabilities predicted whether a household would experience financial hardship over a six-month period. The survey data that we use is particularly apt to study this question, not only because it asks the detailed financial and demographic questions that are otherwise missing from public surveys, but also because it is the same for all of the observations for which we collect this feature.

This feature reporting that is confidential to the Center for Household Financial Stability.

More details on the categories can be found in the methodology. We controlled for factors such as income and demographics and ranked whether the roughly 5,000 families had suffered a financial hardship in the results.

population of interest for understanding the antecedents of financial hardship. We tracked families who said in the last survey that they had recently experienced any of four types of financial hardship: delinquency on rent or mortgage payments; delinquency on regular bills, e.g., utility bills; skipped medical care; and food hardship, defined as going without needed food.

To assess whether the composition of a family's balance sheet helped predict any of these forms of hardship, we asked in the second survey if the family had any balances in the following categories:

- Liquid assets, such as checking and saving accounts, money market funds, and prepaid cards
- Other assets, including businesses, real estate, retirement or education savings accounts
- High-interest debt, such as that from credit cards or payday loans
- Other unsecured debt, such as student loans, unpaid bills and overdrafts
- Secured debt, including mortgages or debts secured by businesses, farms or vehicles.

More details on the categories can be found in the methodology.

We controlled for factors such as income and demographics and ranked whether the roughly 5,000 families had suffered a financial hardship in the results.

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Fewer Tax Breaks for Homeowners: A Good Thing?

By Bill Emmons

Adjusted, home prices generally rise and fall with economic activity. This suggests that what's good for homeowners, via a rising house price, is also good for the economy. (See the accompanying figure.)

But could a decline in real house prices also be good for the economy? If it is the result of efficiency-enhancing changes to the tax code, many economists say yes.

Recent Tax Law Changes

The Tax Cuts and Jobs Act (TCJA) of 2017 places new limits on deductions for state and local taxes and property taxes, and backs back the mortgage interest deduction (MID). Many economists expect these changes to reduce the MID on itemized returns starting with the 2018 tax year.

Several provisions of TCJA will affect taxpayers:

- The standard deduction was doubled to \$12,000 for individuals and \$24,000 for joint filers, making it likely that most low- and middle-income taxpayers who itemized in the past will choose the standard deduction instead.

- State and local taxes are no longer fully deductible, making it less likely that a household's itemized deductions will exceed the new standard deduction.

- The maximum amount of mortgage debt for which interest can be deducted was reduced to \$750,000 (Any are subject to the new rule; existing mortgages have been grandfathered in with the old limit.)

- Marginal tax rates were reduced, cutting the value of an increase of the MID and all other deductions.

Likely Effects on Housing

As a result of these changes, many economists expect house prices to trend somewhat lower. Mortgage borrowing and other aspects of

The tax deductibility of mortgage interest on second mortgages (i.e., home equity loans) and second homes was scaled back.

Bill Emmons is an adjunct vice president and estimator of the Federal Reserve Bank of St. Louis and the senior research advisor for the Bank's Center for Household Financial Stability.

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