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Changes in U.S. Family Finances from 2013 to 2016: Evidence from the Survey of Consumer Finances

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The Federal Reserve Board's triennial Survey of Consumer Finances (SCF) collects information about family incomes, net worth, balance sheet components, credit use, and other financial outcomes.[1] The 2016 SCF reveals broad-based gains in income and net worth since the previous time the survey was conducted, in 2013.[2]

During the three years between the beginning of the 2013 and 2016 surveys, real gross domestic product grew at an annual rate of 2.2 percent, the civilian unemployment rate fell from 7.5 percent to 5 percent, and the annual rate of change in the consumer price index averaged 0.8 percent.[3] These changes in aggregate economic performance led to broad-based income gains across many different types of families. Several observations from the SCF about family incomes stand out:[4]

- Between 2013 and 2016, median family income grew 10 percent, and mean family income grew 14 percent (figure 1).
- Families throughout the income distribution experienced gains in average real incomes between 2013 and 2016, reversing the trend from 2010 to 2013, when real incomes fell or remained stagnant for all but the top of the income distribution.
- Families at the top of the income distribution saw larger gains in income between 2013 and 2016 than other families, consistent with widening income inequality.
- Families without a high school diploma and nonwhite and Hispanic families experienced larger proportional gains in incomes than other families between 2013 and 2016, although more-educated families and white non-Hispanic families continue to have higher incomes than other families.

The improvements in economic activity along with rising house and corporate equity prices combined to support increases in average and median family net worth (wealth) between 2013 and 2016 after both measures remained stagnant between 2010 and 2013. The national CoreLogic Home Price Index increased at an annual rate of 6.5 percent between

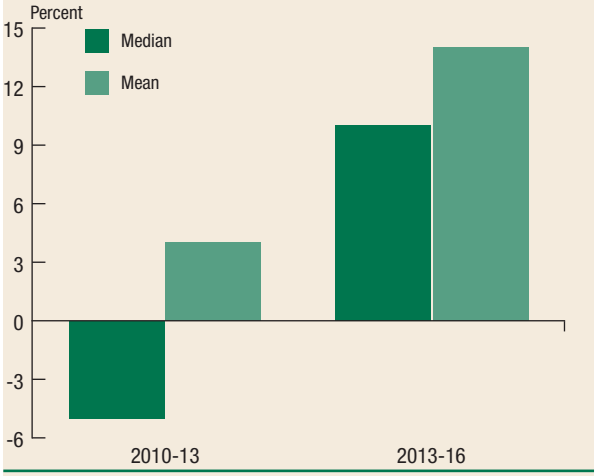
[1] See box 1, "The Data Used in This Article," for a general description of the SCF data. The appendix to this article provides a summary of key technical aspects of the survey.

[2] For a detailed discussion of the 2013 survey as well as references to earlier surveys, see Jesse Bricker, Lisa J. Dettling, Alice Henriques, Joanne W. Hsu, Kevin B. Moore, John Sabelhaus, Jeffrey Thompson, and Richard Windle (2014), "Changes in U.S. Family Finances from 2010 to 2013: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin,* vol. 100 (September), https://www.federalreserve.gov/pubs/bulletin/2014/pdf/scf14.pdf.

[3] Changes in aggregate statistics reported here are measured from March to March or first quarter to first quarter of the respective survey years, just prior to the beginning of the field period for each survey.

[4] Income is measured for the year before the survey.

Figure 1. Change in median and mean family incomes, 2010–16 surveys



Note: Changes are based on inflation-adjusted dollars.

Source: Here and in subsequent figures and tables, Federal Reserve Board, Survey of Consumer Finances.

early 2013 and early 2016, greatly surpassing the rate of consumer price inflation. The value of corporate equity holdings, as measured by major stock price indexes, grew at around a 9 percent annual rate between the two surveys, leading to large inflation-adjusted increases in equity holdings.[5] These price trends contributed to the following changes in the distribution of net worth across the population:

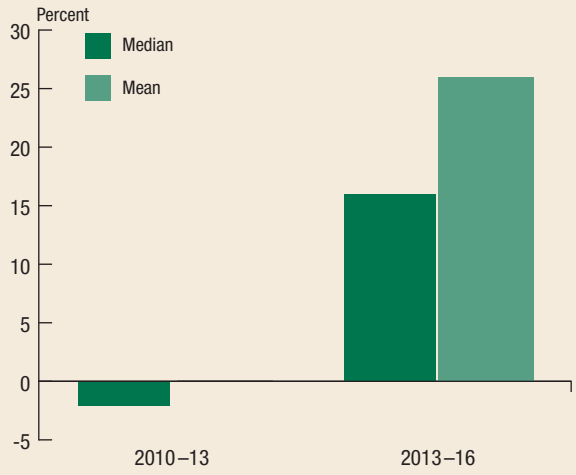
- Overall, between 2013 and 2016, median net worth grew 16 percent, and mean net worth grew 26 percent (figure 2).
- Families at the top of the income and wealth distributions experienced large gains in mean and median net worth after experiencing modest gains between 2010 and 2013.
- Families near the bottom of the income and wealth distribution experienced large gains in mean and median net worth after experiencing large declines between 2010 and 2013.
- Families without a college education and nonwhite and Hispanic families experienced larger proportional increases in net worth than other types of families, although more-educated families and white non-Hispanic families continue to have higher wealth than other families.
- Homeownership rates decreased between 2013 and 2016 to 63.7 percent, continuing a decline from their peak of 69.1 percent in 2004. For families that own a home, mean net housing values (value of a home minus outstanding mortgages) rose.
- Retirement plan participation and retirement account asset values rose between 2013 and 2016 for families across the income distribution, with the largest proportional increases in participation occurring among families in the bottom half of the income distribution.
- Ownership rates and the value of direct and indirect holdings of corporate equities increased between 2013 and 2016, with the largest proportional increase in ownership among families in the bottom and upper-middle parts of the income distribution.
- Business ownership increased from 2013 to 2016 to 13.0 percent, nearing its 2010 level. These gains were broad based, occurring throughout the income distribution, with the largest proportional gains occurring among the highest earners.

The consumer loan interest rate environment was about the same in 2013 and 2016: Typical fixed-rate 30-year mortgage interest rates rose slightly from 3.6 percent to 3.7 percent, new vehicle loan interest rates fell from 4.7 percent to 4.2 percent, and credit card interest rates rose from 11.9 percent to 12.3 percent. At the same time, while the proportion of families with any debt increased, debt burdens of families mostly decreased:

[5] Between March 2016 and March 2017, roughly the 2016 SCF field period, the national CoreLogic Home Price Index grew an additional 5.8 percent and the Standard and Poor's S&P 500 stock price index increased an additional 17 percent. These price changes emphasize the need to evaluate SCF findings in the appropriate time frame.

- Overall, debt obligations fell between 2013 and 2016: Median debt declined 4 percent, and mean debt decreased 2 percent, for families with debt.
- For the median family with debt, debt burdens also fell between 2013 and 2016: Leverage ratios, debt-to-income ratios, and payment-to-income ratios all fell. The fraction of families with payment-to-income ratios greater than 40 percent declined to 7.0 percent, the lowest level seen since 2001.
- Some of the decline in debt can be explained by the decline in the fraction of families with home-secured debt, which fell from 42.9 percent to 41.9 percent, a decline that is comparable to the size of the drop in homeownership.

Figure 2. Change in median and mean family net worth, 2010–16 surveys



Note: Changes are based on inflation-adjusted dollars.

- Between 2013 and 2016, the fraction of families with credit card debt increased. Although median and mean balances for families with credit card debt both fell 3 percent, the fraction of families that pay off credit cards every month decreased.
- Although many measures of debt and debt obligations indicate that debt has fallen, education debt increased substantially between 2013 and 2016.
- In 2016, 20.8 percent of families were considered credit constrained—those who reported being denied credit in the past year, as well as those who did not apply for credit for fear of being denied in the past year.

Income

Median and mean inflation-adjusted before-tax family incomes increased between 2013 and 2016.[6] Overall, median income rose 10 percent between 2013 and 2016, from $48,100 to $52,700 (table 1). Mean income increased 14 percent, from $89,900 to $102,700. The relatively larger rise in mean income relative to median income is consistent with a widening income distribution during this period.[7]

Over the preceding three-year period, from 2010 to 2013, median income fell 5 percent, while mean income rose 4 percent, after both median and mean income fell sharply between 2007 and 2010. The patterns seen in the 2007–10 and 2010–13 periods stood in stark contrast to preceding surveys, and the recent growth in mean and median incomes

[6] To measure income, the interviewers request 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.

[7] Box 3, "Recent Trends in the Distribution of Income and Wealth," discusses trends in income and wealth shares, as measured by the SCF, since 1989.

Table 1. Before-tax median and mean family income, by selected characteristics of families, 2013 and 2016 surveys

Thousands of 2016 dollars, except as noted

Family characteristic	Median income			Mean income		
	2013	2016	Percent change 2013–16	2013	2016	Percent change 2013–16
All families	**48.1**	**52.7**	**10**	**89.9**	**102.7**	**14**
	(.6)	(.7)		(1.6)	(2.0)	
Percentile of usual income						
Less than 20	15.7	16.2	3	15.7	17.1	9
20–39.9	31.4	33.1	5	31.4	34.2	9
40–59.9	50.2	54.1	8	51.1	54.8	7
60–79.9	80.3	86.1	7	82.5	94.1	14
80–89.9	125.5	135.3	8	127.3	139.4	10
90–100	230.1	251.5	9	409.9	487.5	19
Age of head (years)						
Less than 35	36.4	40.5	11	50.2	56.4	12
35–44	62.8	65.8	5	105.2	97.1	-8
45–54	62.8	69.5	11	107.1	131.4	23
55–64	56.8	61.0	7	113.5	141.3	24
65–74	47.4	50.1	6	101.9	106.6	5
75 or more	29.4	40.0	36	54.8	77.1	41
Education of head						
No high school diploma	23.1	26.5	15	31.0	38.8	25
High school diploma	38.1	40.5	6	52.3	57.2	9
Some college	45.0	47.7	6	67.2	67.4	0
College degree	90.2	92.1	2	165.1	189.7	15
Race or ethnicity of respondent						
White non-Hispanic	57.5	61.2	6	107.8	123.4	14
Black or African-American non-Hispanic	32.2	35.4	10	44.3	54.0	22
Hispanic or Latino	33.5	38.5	15	45.4	57.3	26
Other or multiple race	42.5	50.6	19	72.7	86.9	20
Housing status						
Owner	65.3	71.2	9	115.9	134.0	16
Renter or other	28.7	31.6	10	41.3	47.8	16
Urbanicity						
Metropolitan statistical area (MSA)	50.2	55.2	10	95.2	109.7	15
Non-MSA	37.8	38.7	2	54.3	54.1	0
Percentile of net worth						
Less than 25	24.5	25.3	3	32.4	34.2	6
25–49.9	39.8	42.0	6	48.3	50.9	5
50–74.9	57.5	64.8	13	67.9	74.9	10
75–89.9	90.2	90.8	1	103.1	113.4	10
90–100	189.1	215.9	14	372.4	456.9	23

Note: Income is measured for the year prior to the survey. See the appendix for details on standard errors (shown in parentheses below the first row of data for the means and medians).

Box 1. The Data Used in This Article

Data from the Survey of Consumer Finances (SCF) are the basis of the analysis presented in this article. The SCF is a triennial interview survey of U.S. families sponsored by the Board of Governors of the Federal Reserve System with the cooperation of the U.S. Department of the Treasury. Since 1992, data for the SCF have been collected by NORC, a research organization at the University of Chicago. The majority of the data are collected between May and December of each survey year.

The majority of statistics included in this article are related to characteristics of "families." As used here, this term is more comparable with the U.S. Census Bureau definition of "households" than with its use of "families," which excludes the possibility of one-person families. The appendix provides full definitions of "family" for the SCF and the associated family "head," along with how demographic and economic groups are constructed for this article.

The survey collects information on families' total income before taxes for the calendar year preceding the survey. But the bulk of the data cover the status of families as of the time of the interview, including detailed information on their balance sheets and use of financial services as well as on their pensions, labor force participation, and demographic characteristics. Most of the core survey questionnaire has changed in only minor ways relevant to this article since 1989. For 2016, the survey underwent a substantial redesign that updated and added new questions to the interview (see box 2, "New Questions from the 2016 Survey of Consumer Finances Redesign"); however, every effort was made to ensure the maximum degree of comparability of the data over time.

The need to measure financial characteristics imposes special requirements on the sample design for the survey. The SCF is expected to provide reliable information both on attributes that are broadly distributed in the population (such as homeownership) and on those that are highly concentrated in a relatively small part of the population (such as closely held businesses). To address this requirement, the SCF employs a sample design consisting of two parts: a standard, geographically based random sample and a special oversample of relatively wealthy families. Weights are used to combine information from the two samples to make estimates for the full population. In the 2016 survey, 6,254 families were interviewed, and in the 2013 survey, 6,026 were interviewed.

This article draws principally upon the final data from the 2016 and 2013 surveys. To provide a larger context, some information is also included from the final versions of earlier surveys.[1] Differences between estimates from earlier surveys as reported here and as reported in earlier *Federal Reserve Bulletin* articles are attributable to additional statistical processing, correction of minor data errors, revisions to the survey weights, conceptual changes in the definitions of variables used in the articles, and adjustments for inflation. In this article, all dollar amounts from the SCF are adjusted to 2016 dollars using the "current methods" version of the consumer price index for all urban consumers (CPI-U-RS). The appendix provides additional detail on the adjustments.

The principal detailed tables (tables 1 through 4) describing income, net worth, and asset and debt holdings focus on the percentage of various groups that have such items and/or the median and mean holding for those who have them.[2] Generally, when one deals with data that exhibit very large values for a relatively small part of the population—as is the case for many of the items considered in this article—estimates of the median are often statistically less sensitive to such outliers than are estimates of the mean. At the same time, means are generally more useful for comparing across population subgroups because every member of the group contributes equally to the overall average.

One liability of using the median as a descriptive device is that medians are not additive—that is, the sum of the medians of two items for the same population is not generally equal to the median of the sum (for example, median assets less median liabilities does not equal median net worth). In contrast, means for a common population are additive. In the context of this article, where a comparable median and mean are given, the gain or loss of the mean relative to the median may usually be taken as indicative of the relative change at the top of the distribution; for example, when the mean decreases more rapidly than the

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Box 1. The Data Used in This Article—*continued*

median, it is typically taken to indicate that the values in the upper part of the distribution fell more than those in the lower part of the distribution.

To provide a measure of the statistical significance of the developments discussed in this article, standard errors caused by sampling and imputation for missing data are given for selected estimates. Space limits prevent the inclusion of the standard errors for all estimates. Although the statistical significance of the results is not directly addressed, the article highlights findings that are significant or are interesting in a broader context.

[1] Additional information about the survey is available on the Board's website at https://www.federalreserve.gov/econresdata/scf/scfindex.htm.

[2] The median of a distribution is defined as the value at which equal parts of the population considered have values that are larger or smaller.

between 2013 and 2016 represents a return to a general pattern of substantial increases in both the median and the mean between surveys dating back to the early 1990s.[8]

Some predictable patterns in income levels across demographic groups are observed in the 2016 SCF, and those patterns are largely consistent with prior surveys.[9] Across age groups, median and mean incomes show a life-cycle pattern, rising to a peak in the middle age groups and then declining for groups that are older and increasingly more likely to be retired. Income also shows a strong positive association with education; in particular, incomes for families headed by a person who has a college degree tend to be substantially higher than for those with lower levels of schooling. Incomes of white non-Hispanic families are substantially higher than those of all three nonwhite and Hispanic groups: black or African-American non-Hispanic, Hispanic or Latino, and other or multiple race families.[10] Income is also higher for homeowners and for families living in urban areas than for other families, and income is systematically higher for groups with greater net worth.[11]

Changes in Income by Family Characteristics

Median and mean incomes displayed broad-based gains between 2013 and 2016 across different types of families, whether grouped by economic characteristics such as income, wealth, urbanicity, and homeowner status, or by purely demographic variables such as age, education, or race and ethnicity.

For a given family, income at a particular time may not be indicative of its "usual" income. Unemployment, a bonus, a capital loss or gain, or other factors may cause income to deviate temporarily from the usual amount.[12] Across the distribution of families grouped by usual income, all quintiles saw increases in median income between 2013 and 2016, with

[8] Between 1992 and 2007, mean and median income generally increased between survey waves. Mean income increased, on average, 8.0 percent between survey waves, and median income increased, on average, 4.2 percent between survey waves. The period from 2001 to 2004 is the only exception, when mean income fell modestly.

[9] Tabulated data from the survey beyond that presented in this article are available at https://www.federalreserve.gov/econres/scfindex.htm. This information includes some alternative versions of the tables in this article, including tables that match the structure used in earlier versions of this publication. For those who wish to make further alternative calculations, this website provides a variety of data files as well as access to online tabulation software that may be used to create customized tables based on the variables analyzed in this article.

[10] The appendix to this article provides information on racial and ethnic identification in the SCF.

[11] In this article, a family is considered a homeowner if at least one person in the family owns at least some part of the family's primary residence.

[12] Box 4, "Usual versus Actual Income," discusses income variability and the implications of categorizing families by the two income measures.

Box 2. New Questions from the 2016 Survey of Consumer Finances Redesign

In order to stay up-to-date with new developments in family finances, the Survey of Consumer Finances (SCF) underwent a substantial redesign in 2016. Despite these changes, the core questionnaire remains comparable with earlier surveys. The goals of the redesign were to improve the collection of data on new developments key to family finances, improve coordination and integration with other household surveys and administrative data sources, reduce respondent burden, and generally improve upon the quality of data collected. As a part of the redesign, the questionnaire underwent changes in several areas, including streamlining of existing modules and the introduction of new questions.[1] This discussion briefly highlights three new topics that were added to the survey in 2016: financial literacy, families' response to hypothetical income shortfalls, and parental educational attainment.

Financial Literacy

Financial literacy and financial knowledge provide context for understanding a family's responses to their interview questions, financial decisions, and overall economic circumstances. The 2016 survey included four new questions designed to capture the respondent's level of financial literacy and self-assessed financial knowledge.[2]

The first question asks respondents to rate their own level of knowledge about personal finance on a 0 to 10 scale, where a response of 0 indicates that the respondent is "not knowledgeable at all" and a response of 10 indicates that the respondent is "very knowledgeable." This question is designed to elicit respondents' subjective opinions on their own knowledge, based on their own conceptualization of what financial knowledge entails.

Figure A. Objective financial literacy by self-rated financial knowledge, 2016 survey

Three additional questions were designed to measure concepts fundamental to many financial decisions, including saving, borrowing, and investing. One question jointly measures a respondent's knowledge of the concept of stocks and of stock mutual funds, along with risk diversification. The second question measures numeracy in the context of interest rate compounding. A third question measures understanding of inflation, also in the context of saving.[3] The questions employ a multiple-choice format that is intended to focus on the basic concepts without requiring respondents to perform precise calculations. Respondents also have the option of responding that they "don't know" or skipping any question without expla-

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Box 2. New Questions from the 2016 Survey of Consumer Finances Redesign—*continued*

nation. Overall, 43 percent of respondents provided correct answers to all three questions, 36 percent had two correct answers, and 16 percent had one correct answer.

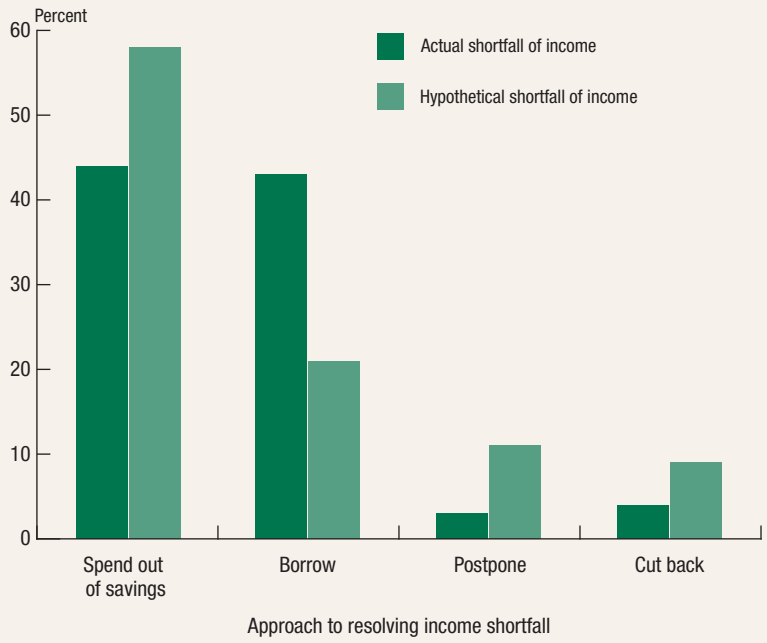
Respondents who rate their own knowledge of personal finance more highly tend to provide more correct answers to objective financial literacy questions (figure A). For respondents who rated their knowledge of personal finance as 1 out of 10, the average number of correct answers was just over 1.5 out of 3. For those with a self-rating of 9 out of 10, the average number of correct answers was about 2.4. However, respondents who gave themselves the maximum self-rating of 10 provided fewer correct answers than those with a self-rating of 9, and those with a self-rating of 0 gave more correct answers, on average, than those with a self-rating of 1.

Responses to Hypothetical Income Shortfalls

Understanding how families respond to income shortfalls is important for understanding borrowing and spending behavior in the presence of financial constraints. Since 1992, the SCF has included questions identifying families that spent more than they earned in income over the previous calendar year and, for those families, the primary way that they resolved the shortfall. A new question was added to the 2016 survey that asked respondents whose income was equal to or greater than their spending how they would resolve a *hypothetical* shortfall.

In 2016, 15 percent of families report spending more than they received in income. The most common approaches for resolving income shortfalls for families that experienced a shortfall were spending out of savings or investments (44 percent) and borrowing, including the use of credit cards (43 percent) (figure B).[4]

Figure B. Main approaches to resolving income shortfall by whether a family actually experienced an income shortfall, 2016 survey



The new question on the 2016 survey asks, "If tomorrow you experienced a financial emergency that left you unable to pay all of your bills, how would you deal with it?" Approaches to dealing with shortfalls are broadly similar across families who actually did spend more

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Box 2. New Questions from the 2016 Survey of Consumer Finances Redesign—*continued*

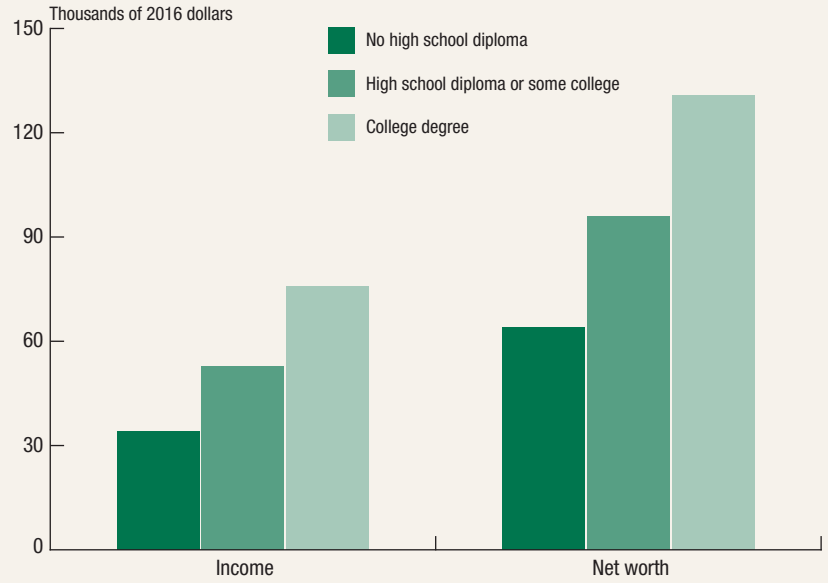
than their income and those who did not. The most common proposed way of dealing with a hypothetical shortfall is to spend out of savings and investments, chosen by 58 percent of respondents, followed by borrowing, which was chosen by 21 percent of respondents.

Parental Educational Attainment

The level of education obtained by one's parents is one measure of socioeconomic status that can be used to investigate economic mobility across generations and the intergenerational persistence of economic resources. In 2016, the SCF began asking families about the highest level of education obtained by their parents.

Higher levels of parental education are associated with higher incomes and wealth-holding (figure C). The typical family in which at least one of the respondent's parents has a four-year college degree had a little more than double the income and wealth of families in which neither of the respondent's parents had a high school diploma. However, the relationship between parental education and income and wealth is not as strong as the relationship between a respondent's own education and income and wealth. In 2016, the typical family headed by respondents with a college degree had over 3 times more income and almost 13 times more wealth than families headed by respondents without a high school diploma (tables 1 and 2 of the main text).

Figure C. Median income and net worth by parental educational attainment, 2016 survey



[1] A complete list of all of the changes to the 2016 SCF, including the wording of all new and revised questions, can be found at https://www.federalreserve.gov/econres/scfindex.htm.

[2] These questions are asked only of the respondent of the survey (who is not necessarily the household head) and as such reflect an *individual respondent's* financial literacy, rather than the family as a whole.

[3] The three questions, designed by Annamaria Lusardi and Olivia Mitchell, have been fielded in identical or similar form on surveys both in the United States, including the Health and Retirement Study, the National Longitudinal Study of Youth, and the National Financial Capabilities Study, and internationally, including the Bank of Italy's Survey on Household Income and Wealth and the Dutch Central Bank's Household Survey. For more information about these questions, see Annamaria Lusardi and Olivia S. Mitchell (2011), "Financial Literacy and Retirement Planning in the United States," *Journal of Pension Economics and Finance,* vol. 10 (October), pp. 509–25.

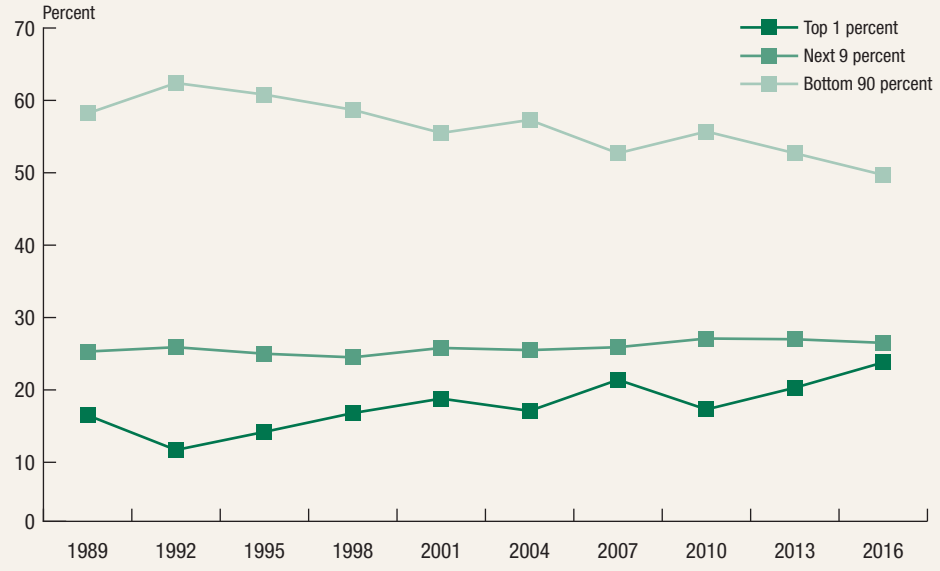
[4] Spent out of savings includes spent out of savings/investments and sold assets. Families could also respond that they did one of the following: got help from others, got additional income, bankruptcy, renegotiated payments, and nothing. Because these options are not included in figure B, the categories listed do not sum to 100.

Box 3. Recent Trends in the Distribution of Income and Wealth

The distribution of income and wealth has grown increasingly unequal in recent years. The Survey of Consumer Finances (SCF) has played a crucial role in our understanding of these trends because the survey collects data on net worth in addition to income, and it pays particular attention to sampling affluent families.[1]

Data from the 2016 SCF indicate that the shares of income and wealth held by affluent families have reached historically high levels since the modern SCF began in 1989. The share of income received by the top 1 percent of families was 20.3 percent in 2013 and rose to 23.8 percent in 2016 (figure A). The top 1 percent of families now receives nearly as large a share of total income as the next highest 9 percent of families combined (percentiles 91 through 99), who received 26.5 percent of all income. This share has remained fairly stable over the past quarter of a century. Correspondingly, the rising income share of the top 1 percent mirrors the declining income share of the bottom 90 percent of the distribution, which fell to 49.7 percent in 2016.

Figure A. Income shares by income percentile, 1989–2016 surveys



The wealth share of the top 1 percent climbed from 36.3 percent in 2013 to 38.6 percent in 2016, slightly surpassing the wealth share of the next highest 9 percent of families combined (figure B). After rising over the second half of the 1990s and most of the 2000s, the wealth share of the next highest 9 percent of families has been falling since 2010, reaching 38.5 percent in 2016. Similar to the situation with income, the wealth share of the bottom 90 percent of families has been falling over most of the past 25 years, dropping from 33.2 percent in 1989 to 22.8 percent in 2016. Although the SCF measure of wealth is fairly comprehensive, some assets that may be widely held, such as defined-benefit

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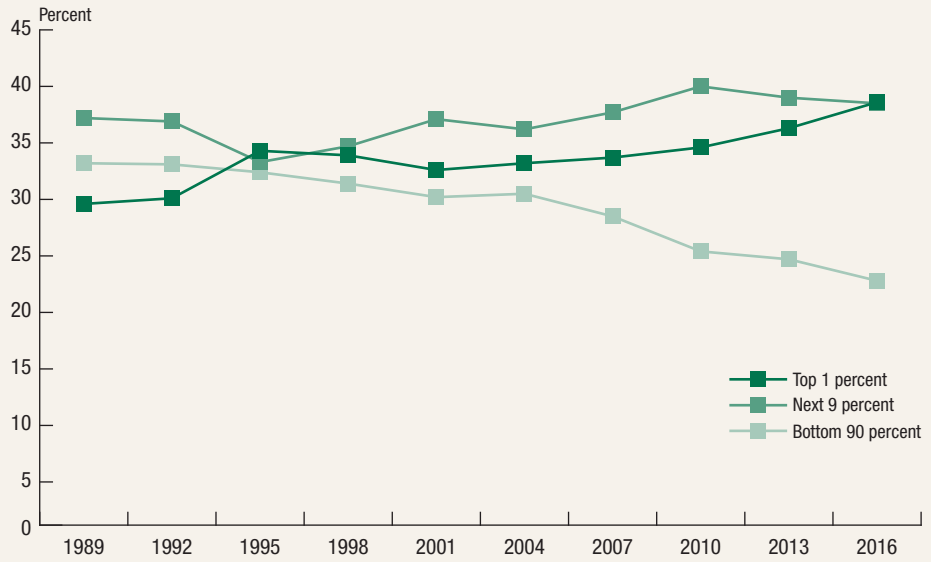
families in higher quintiles generally seeing larger gains.[13] Median income increased 9 percent for the top income decile, between 5 and 8 percent for the middle three quintiles, and 3 percent for the bottom income quintile. Mean income also increased for all quintiles, with gains between 7 and 14 percent for the bottom four quintiles. The top decile's mean income rose 19 percent. These patterns are consistent with a widening of the income distribution between 2013 and 2016.

[13] Each quintile represents 20 percent of the population. See the appendix for information about distribution group cutoffs.

Box 3. Recent Trends in the Distribution of Income and Wealth—*continued*

pension and Social Security wealth, are not included in net worth definitions because of the many assumptions required to estimate their values.[2]

Figure B. Wealth shares by wealth percentile, 1989–2016 surveys



[1] See the sampling techniques section of the appendix for further discussion of the SCF's ability to capture affluent families. A more detailed discussion can be found in Jesse Bricker, Alice Henriques, Jacob Krimmel, and John Sabelhaus (2016), "Measuring Income and Wealth at the Top Using Administrative and Survey Data," *Brookings Papers on Economic Activity,* Spring, pp. 261–321, https://www.brookings.edu/wp-content/uploads/2016/03/brickertextspring16bpea.pdf.

[2] For examples of what the distribution of wealth would look like with these assets included, see Sebastian Devlin-Foltz, Alice Henriques, and John Sabelhaus (2016), "Is the U.S. Retirement System Contributing to Rising Wealth Inequality?" *Russell Sage Foundation Journal of the Social Sciences,* vol. 2 (October), pp. 59–85, and Sebastian Devlin-Foltz, Alice Henriques, and John Sabelhaus (2016), "The Role of Social Security in Overall Retirement Resources: A Distributional Perspective," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, July 29), https://www.federalreserve.gov/econresdata/notes/feds-notes/2016/role-of-social-security-in-overall-retirement-resources-a-distributional-perspective-20160729.html.

All age groups experienced increases in median income between 2013 and 2016. Mean incomes also increased for nearly all age groups, with the exception of families headed by those aged 35 to 44. Both median and mean incomes increased most for the oldest families, whose median and mean incomes rose 36 percent and 41 percent, respectively.

Between 2013 and 2016, both median and mean income grew for all families grouped by educational attainment. The highest growth rates occurred among families without a high school diploma, whose median and mean income grew 15 percent and 25 percent, respectively. Median income among families with a college degree grew only a modest 2 percent, while mean income among those families grew 15 percent. These patterns differ from the 2010–13 period, when mean and median incomes fell for families without a college degree and rose for families with a college degree.[14] However, despite experiencing relatively large

[14] Between 2010 and 2013, median and mean incomes fell 9 percent and 17 percent, respectively, for families without a high school diploma, 6 percent and 2 percent, respectively, for families with a high school diploma, and 11 percent and 3 percent, respectively, for families with some college. Median and mean income rose 1 percent and 5 percent, respectively, for families with a college degree between 2010 and 2013.

proportional gains, disparities in income by education persist: Median incomes for college-educated families are more than twice those of families without a high school diploma.

Over the 2013–16 period, mean and median incomes grew for all families grouped by race or ethnicity.[15] Large income gains occurred among nonwhite and Hispanic groups: black or African-American non-Hispanic and Hispanic or Latino families' median incomes grew 10 percent and 15 percent, respectively, and mean income grew 22 percent and 26 percent, respectively. Large gains (19 to 20 percent) also occurred for families identified as other or multiple races. White non-Hispanic families experienced smaller gains in median and mean income, of 6 percent and 14 percent, respectively. These patterns differ from the 2010–13 period, when mean and median incomes fell for all race or ethnicity groups except white non-Hispanic families.[16] Despite nonwhite and Hispanic families experiencing relatively larger proportional gains, disparities between white non-Hispanic families and nonwhite and Hispanic families persist: Median incomes for white non-Hispanic families are between 20 and 75 percent higher than for families in all nonwhite and Hispanic groups.

Both homeowners and renters and other non-homeowners experienced income growth between 2013 and 2016. Median incomes increased between 9 and 10 percent, respectively. Mean incomes increased 16 percent during this period to $134,000 for homeowners and $47,800 for renters and other non-owners.

The income gap between families living in metropolitan statistical areas (MSAs) and non-MSAs widened between 2013 and 2016. Families living in MSAs experienced gains in median and mean income (10 percent and 15 percent, respectively), while families in other areas experienced a modest 2 percent increase in median income and almost no change in mean income. In 2016, mean incomes for families in MSAs were more than double those of families in non-MSAs.

Grouping families by percentile of net worth (measured concurrently in the SCF), both mean and median income grew across the distribution. For families in the lowest quartile of net worth, median income grew 3 percent and mean income grew 6 percent, to $25,300 and $34,200, respectively. Families in the second and third quartiles also saw growth in mean and median incomes, rising between 5 and 13 percent. In 2016, median income reached $42,000 for those in the second quartile of net worth and $64,800 for those in the third quartile. The top decile of net worth experienced a 14 percent increase in median income and a 23 percent increase in mean income.

Net Worth

Median and mean inflation-adjusted net worth—the difference between families' gross assets and their liabilities—rose between 2013 and 2016 (table 2). Overall, the median net worth of all families rose 16 percent to $97,300, and mean net worth rose 26 percent to $692,100. These patterns differed from the past two intervals recorded by the SCF, as there was little change in median or mean net worth in the 2010–13 period and declines in the 2007–10 period.[17] These patterns in net worth over the past several surveys were largely driven by the Great Recession and subsequent recovery in house and other asset prices.

[15] An upcoming FEDS Note discusses differences in income and wealth-holding by race and ethnicity in more detail and can be found at https://www.federalreserve.gov/econres/notes/feds-notes/default.htm.

[16] See the appendix for more on the racial/ethnic categories used in this article. In versions of this article for earlier years of the SCF, nonwhite and Hispanic families were not separately tabulated by race/ethnicity.

[17] Between the 2010 and 2013 surveys, median net worth decreased 2 percent and mean net worth was unchanged. Between 2007 and 2010, median net worth declined 40 percent and mean net worth declined 15 percent.

Table 2. Family median and mean net worth, by selected characteristics of families, 2013 and 2016 surveys

Thousands of 2016 dollars, except as noted

Family characteristic	Median net worth			Mean net worth		
	2013	2016	Percent change 2013–16	2013	2016	Percent change 2013–16
All families	**83.7**	**97.3**	**16**	**551.3**	**692.1**	**26**
	(3.0)	(2.8)		(10.6)	(12.9)	
Percentile of usual income						
Less than 20	6.6	7.0	6	66.6	77.5	16
20–39.9	28.8	30.0	4	116.7	120.5	3
40–59.9	57.1	88.6	55	169.9	227.8	34
60–79.9	166.3	170.6	3	361.8	370.7	2
80–89.9	296.9	396.5	34	651.1	800.5	23
90–100	1,161.0	1,629.0	40	3,430.7	4,526.6	32
Age of head (years)						
Less than 35	10.7	11.1	4	77.8	76.2	-2
35–44	48.2	59.8	24	358.0	288.7	-19
45–54	108.6	124.2	14	546.6	727.5	33
55–64	171.1	187.3	9	823.3	1,167.4	42
65–74	239.3	224.1	-6	1,089.8	1,066.0	-2
75 or more	200.8	264.8	32	665.3	1,067.0	60
Education of head						
No high school diploma	17.7	22.8	29	112.2	157.2	40
High school diploma	54.1	67.1	24	205.8	249.6	21
Some college	52.3	66.1	26	328.3	340.6	4
College degree	285.6	292.1	2	1,219.7	1,511.1	24
Race or ethnicity of respondent						
White non-Hispanic	146.4	171.0	17	727.8	933.7	28
Black or African-American non-Hispanic	13.6	17.6	29	102.1	138.2	35
Hispanic or Latino	14.2	20.7	46	111.0	191.2	72
Other or multiple race	42.5	64.8	52	383.6	457.8	19
Housing status						
Owner	201.5	231.4	15	807.3	1,034.2	28
Renter or other	5.5	5.2	-5	72.5	91.1	26
Urbanicity						
Metropolitan statistical area (MSA)	87.3	99.0	13	593.2	751.3	27
Non-MSA	70.1	87.9	25	269.4	276.3	3
Percentile of net worth						
Less than 25	†	.2	…	–13.8	–12.1	12
25–49.9	32.3	39.8	23	37.0	44.7	21
50–74.9	173.3	192.0	11	183.2	204.1	11
75–89.9	521.6	605.0	16	563.2	659.3	17
90–100	1,930.0	2,387.5	24	4,150.0	5,336.0	29

Note: Net worth is the difference between families' gross assets and their liabilities. See appendix for definitions of asset and liability categories used in the SCF, as well as details on standard errors (shown in parentheses below the first row of data for the means and medians).

† Less than 0.05 ($50).

... Not applicable.

Declines in house prices in particular had a disproportionate effect on families in the middle of the net worth distribution, whose wealth portfolio is dominated by housing. Divergent trends in median and mean net worth over the past few surveys suggest substantial heterogeneity in wealth changes across families.[18]

The median and mean values of wealth rise systematically with usual income, a relationship reflecting a higher level of saving among higher-income families, and the feedback effect of higher incomes from the accumulated assets.[19] Median and mean family net worth generally increase with age, with a plateau or modest decreases for the oldest age groups relative to the near-retirement age groups, a pattern reflecting life-cycle saving behavior. Wealth shows strong differentials across groups defined in terms of education, racial or ethnic background, urbanicity, and housing status; these differentials generally mirror those for income, but the wealth differences are larger.

Changes in Net Worth by Family Characteristics

Families with higher levels of usual income reported greater levels of net worth, but changes in net worth varied substantially across the usual income distribution. Median net worth rose between 2013 and 2016 for most usual income groups, rising between 3 and 55 percent. Those in the lowest usual income quintile saw a modest gain in median net worth (6 percent, from $6,600 to $7,000) but a larger proportional increase in mean net worth (16 percent, from $66,600 to $77,500). Families in the third quintile of usual income saw a large increase in both median and mean net worth (55 percent and 34 percent, respectively). Families in the fourth quintile experienced only modest gains between 2013 and 2016. However, this quintile was the only one to experience gains between 2010 and 2013.[20] Those at the top of the usual income distribution experienced large increases in median and mean net worth, which rose 40 percent and 32 percent, respectively.

Nearly all age groups experienced increases in median net worth between 2013 and 2016, with the exception of families between ages 65 and 74, who experienced a modest decline. Mean net worth grew for about half of the age groups. Families under 45 and families between ages 65 and 74 experienced declines in mean net worth between 2013 and 2016. The largest gains in both median and mean net worth occurred among the oldest families, who experienced a 32 percent increase in median net worth and a 60 percent increase in mean net worth. These patterns by age group were generally the opposite of the 2010–13 period, when mean and median net worth increased for families under age 45, decreased for those between ages 45 and 64, increased for those between ages 65 and 74, and decreased for the oldest group.

From 2013 to 2016, median and mean net worth increased for all types of households grouped by educational attainment. The largest gains in median net worth occurred among families without a college degree, whose median net worth increased between 24 and 29 percent. For mean net worth, the largest gains occurred among families without a high school diploma, who experienced a 40 percent increase in mean net worth. In contrast, families with a college degree saw a modest 2 percent gain in median net worth and a 24 percent gain in mean net worth. Although families without a college degree experienced strong gains in median and mean net worth over the recent period, the differences in the level of net worth for families with and without a college degree was little changed.

[18] Box 3, "Recent Trends in the Distribution of Income and Wealth," discusses shares of income and wealth, as measured by the SCF, since 1989.

[19] See box 5, "Saving Behavior," for a discussion of patterns of saving by usual income.

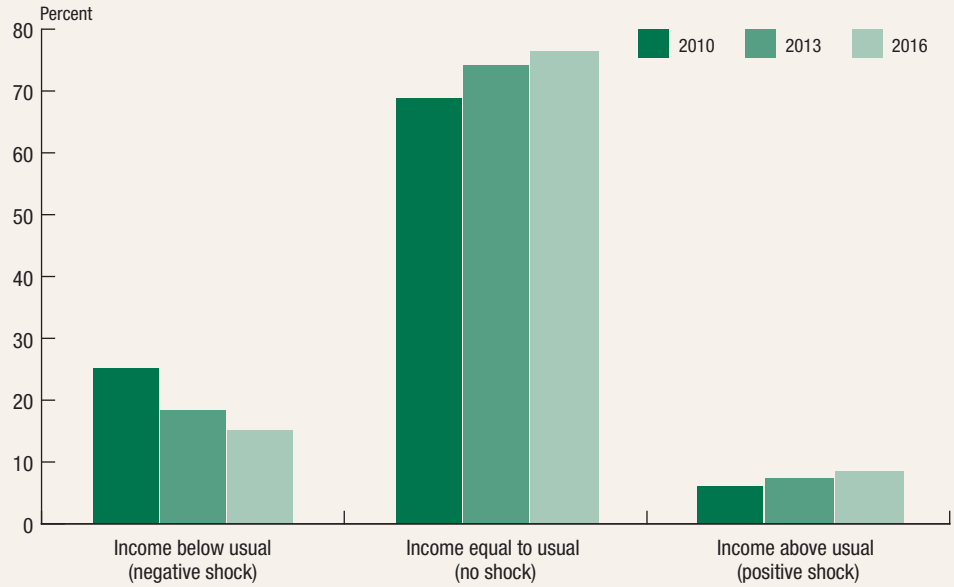
[20] Median net worth increased 16 percent and mean net worth increased 6 percent for the fourth quintile between 2010 and 2013 and either fell or was unchanged for all other quintiles.

Box 4. Usual versus Actual Income

The income classifier used throughout this report is the Survey of Consumer Finances respondent-reported measure of "usual" income. This classifier is designed to capture a version of household income with transitory fluctuations smoothed away in order to approximate the economic concept of "permanent" income. Usual income differs from actual income when the respondent reports that the family experienced a negative or positive income "shock" that is unlikely to persist, say from a temporary unemployment spell or an unexpected salary bonus. Usual income is measured in the survey after actual income has been reported, when respondents are given the option to report their usual income if they believe they experienced a temporary deviation.[1]

The fraction of families with actual income deviating from usual income varies over the business cycle, and grouping families by actual income can bias estimates of changes in economic outcomes—such as net wealth—across groups, particularly in volatile periods. In 2010, 25 percent of families reported that their actual income was temporarily below their usual income (figure A). The fraction reporting unusually low income dropped to 18 percent in 2013, falling further to 15 percent in 2016.

Figure A. Families with positive and negative income shocks, 2010-16 surveys



The distinction between usual and actual income is important, as measures of average net worth, portfolio composition, borrowing, and spending behavior of, for instance, wealthy families with only temporarily low incomes are very different from families whose income is usually lower. Consider, for example, the lowest quintile of families sorted by actual income. This actual income group includes some families whose income is usually low and also some families whose income is only temporarily low. In 2010, 38.8 percent of families in the bottom actual income quintile reported a usual income that would put them in a higher group (table B). This percentage was particularly high in 2010; it decreased to 31.2 percent in 2013 and 30.0 percent in the most recent survey, 2016. Generally, when this fraction is high, more wealthy families would be temporarily classified in the lowest income group.

If families had been grouped by actual income, instead of usual income, estimates of average net worth for that quintile would have been biased. Among all families in the bottom 20 percent by actual income, average net worth decreased between 2010 and 2013, from $129,100 to $88,800, before increasing only slightly to $89,600 in 2016. In

continued on next page

Box 4. Usual versus Actual Income—*continued*

grouping families by usual income instead of actual income, the measures of average net worth are lower, the decline between 2010 and 2013 is smaller, and the gain between 2013 and 2016 is greater. Among those families whose income is usually in the bottom 20 percent, average net worth fell from $84,400 to $66,600 between 2010 and 2013, increasing to $77,500 in 2016. Grouping families by usual income can provide a more accurate representation of the levels and changes in net worth experienced across income groups.

Table B. Effect of grouping by actual income on average net worth for bottom 20 percent, 2010–16 surveys

Thousands of 2016 dollars, except as noted

Usual or actual income measure	2010	2013	2016
Percent of families in "usually higher" income group	38.8	31.2	30.0
Average net worth of families in the bottom 20 percent…			
By actual income	129.1	88.8	89.6
By usual income	84.4	66.6	77.5

[1] Specifically, after the data on actual income on the year prior to the survey are collected, respondents are asked, "Is this income unusually high or low compared to what you would expect in a 'normal' year, or is it normal?" If the respondent answers that income was unusually high or low, the follow-up question is, "About what would your total income have been if it had been a normal year?"

From 2013 to 2016, median and mean net worth increased for all types of families grouped by race or ethnicity. Large gains in mean and median net worth occurred among nonwhite and Hispanic groups: black or African-American non-Hispanic and Hispanic or Latino families experienced increases in median net worth of 29 percent and 46 percent, respectively, and increases in mean net worth of 35 percent and 72 percent, respectively. Large gains (19 to 52 percent) also occurred for families identified as other or multiple races.[21] White non-Hispanic families also experienced sizable gains in median and mean net worth, of 17 percent and 28 percent, respectively. Despite nonwhite and Hispanic groups experiencing larger proportional growth rates during the 2013–16 period, families in nonwhite and Hispanic groups still have only 10 to 40 percent the level of median net worth as white non-Hispanic families in 2016.

The median net worth of homeowners increased 15 percent between 2013 and 2016, whereas that of renters or other non-homeowners fell 5 percent. Much of this differential growth is explained by growing house prices over the 2013–16 period, which improves the balance sheets of owners whose homes appreciate in value. However, mean net worth of both homeowners and non-homeowners rose substantially over this period; the increase in mean net worth for non-homeowners is partially attributable to other asset prices rising during the 2013–16 period.

Median and mean net worth grew for families in both urban and rural areas between 2013 and 2016. Families living in MSAs experienced a 13 percent increase in median net worth and a 27 percent increase in mean net worth, while families in other areas experienced a 25 percent rise in median net worth and a modest 3 percent rise in mean net worth.

Median net worth rose for all percentile groups of the distribution of net worth, with the largest increases in proportional terms being for the second quartile (23 percent) and the

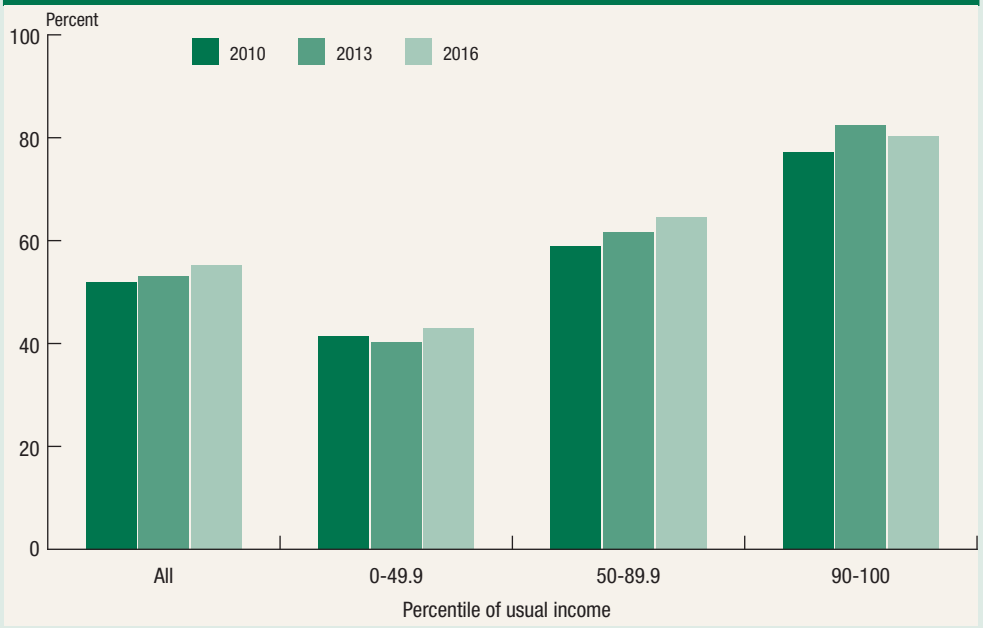
[21] See the appendix for more on the racial/ethnic categories used in this article.

Box 5. Saving Behavior

Because saving out of current income is an important determinant of family net worth, the Survey of Consumer Finances (SCF) asks respondents whether, over the preceding year, the family's spending was less than, more than, or about equal to its income. Though only qualitative, the answers are a useful indicator of whether families are saving.

The fraction of families who reported saving has slowly increased over the past three surveys (figure A). Between 2013 and 2016, the proportion of all families that saved increased from 53.0 percent to 55.4 percent.

Figure A. Families that saved, 2010–16 surveys



Within a given year, the fraction of families that save increases with usual income (figure A).[1] In 2016, for example, the fraction of families in the top income group that saved was 80.2 percent, almost double the 42.9 percent that saved from the lowest income group.

Between 2013 and 2016, the fraction of families that saved increased in the bottom 50 percent and in the next 40 percent of the income distribution, and fell slightly for families in the top 10 percent. The increase in reported saving for the bottom 50 percent and the next 40 percent is consistent with other SCF data. For example, table 3 in the main text shows an increase in the fraction of families with a retirement account—a key asset for middle-class families.

[1] For a description of the usual income measure, see box 4, "Usual versus Actual Income."

top decile (24 percent) of the net worth distribution. For the lowest quartile, median net worth was less than $50 in 2013 and about $200 in 2016, while mean net worth increased 13 percent from negative $13,800 to negative $12,100. The third quartile also experienced gains in median and mean net worth, with both rising 11 percent between 2013 and 2016. For the 75th to 90th percentile, median net worth rose 16 percent and mean net worth rose 17 percent over the recent period; mean net worth for the top decile rose 29 percent between 2013 and 2016. The level of median and mean net worth for the top decile is 4 to 8 times the level of the next highest percentile group, further evidence of the concentration of wealth at the top of the distribution.

Table 3. Holding and values of assets, 2013 and 2016 surveys
Thousands of 2016 dollars, except as noted

Balance sheet item	Percent holding		Conditional median value			Conditional mean value		
	2013	2016	2013	2016	Percent change 2013–16	2013	2016	Percent change 2013–16
Any Asset	**97.9**	**99.4**	**183.4**	**189.9**	**4**	**658.8**	**792.0**	**20**
Types of financial asset								
Any financial asset	**94.5**	**98.5**	**21.9**	**23.5**	**8**	**278.5**	**340.0**	**22**
Transaction accounts	93.2	98.0	4.2	4.5	6	37.4	40.2	7
Certificates of deposit	7.8	6.5	16.5	20.0	21	66.5	75.7	14
Savings bonds	10.0	8.6	1.0	1.0	-3	6.6	9.5	44
Bonds	1.4	1.2	97.5	100.0	3	599.8	771.0	29
Stocks	13.8	13.9	27.8	25.0	-10	303.5	327.8	8
Pooled investment funds	8.2	10.0	82.5	114.0	38	477.3	776.0	63
Retirement accounts	49.2	52.1	60.8	60.0	-1	207.5	228.9	10
Cash value life insurance	19.2	19.4	8.2	8.5	3	36.4	37.5	3
Other managed assets	5.2	5.5	103.1	110.0	7	382.1	473.6	24
Other	6.9	8.1	4.1	5.5	33	56.8	53.7	-6
Types of nonfinancial asset								
Any nonfinancial asset	**91.0**	**90.8**	**153.0**	**158.9**	**4**	**419.8**	**498.1**	**19**
Vehicles	86.3	85.2	16.3	17.3	6	23.3	25.3	9
Primary residence	65.2	63.7	175.3	185.0	6	270.8	301.2	11
Other residential property	13.2	13.8	127.6	145.7	14	326.1	358.2	10
Equity in nonresidential property	7.2	6.2	61.9	70.0	13	276.3	475.2	72
Business equity	11.7	13.0	69.6	79.9	15	1,004.2	1,190.7	19
Other	7.3	6.5	13.4	13.0	-3	74.5	81.4	9

Note: See the appendix for definitions of asset categories used in the SCF.

Assets

Between 2013 and 2016, ownership of any type of asset rose slightly from 97.9 percent to 99.4 percent in 2016 (table 3). At the same time, the mix of assets held by families has changed, with ownership rates on some categories of assets falling and others rising between 2013 and 2016.

Conditional on holding any assets, the median family's total asset holdings rose 4 percent, from $183,400 in 2013 to $189,900 in 2016. The conditional mean value of total assets rose substantially, by 20 percent. The larger increase in mean—versus median—asset holdings indicates that gains in asset values were spread unequally across families and asset types.

Financial Assets

Overall, ownership of any financial assets—which includes transaction accounts, certificates of deposit, savings bonds, other bonds, stocks, pooled investment funds, retirement accounts, cash value life insurance, and other managed assets—rose to 98.5 percent in 2016.[22] The conditional median value of all financial assets held by families also rose 8 percent, from $21,900 in 2013 to $23,500 in 2016. Conditional mean values rose 22 percent, from $278,500 to $340,000. These increases are indicative of broad-based gains but also indicate that some families experienced particularly large gains in the values of their financial assets.

[22] See the appendix for detailed definitions of SCF asset and liability categories.

Transaction accounts—which include checking, savings, money market, call accounts, and prepaid debit cards—remained the most commonly held type of financial asset in 2016, with an ownership rate of 98 percent, an increase over the 93.2 percent of families that held a transaction account in 2013. The increase in ownership was primarily due to the inclusion of prepaid debit cards with transaction accounts, which were collected in the survey for the first time in 2016.[23] If those cards are excluded, the ownership of transaction accounts was flat between 2013 and 2016. The conditional median and mean values of those accounts also rose between 2013 and 2016, by 6 percent and 7 percent, respectively. In 2016, median transaction account holdings were $4,500, and mean holdings were $40,200. If prepaid debit cards are excluded, the median and mean holdings are little changed.

Rates of ownership of certificates of deposits continued to fall between 2013 and 2016, to 6.5 percent, following a decline since 2007, when 16.1 percent of families held certificates of deposit. These declines are, at least in part, attributable to the low interest rate environment, which has reduced the advantage of certificates of deposit over transaction accounts. Conditional on ownership, the amount held in those accounts rose, however, with the median increasing 21 percent and the mean increasing 14 percent.

Ownership of savings bonds, other bonds, and directly held stocks generally fell or remained similar between 2013 and 2016, although none of the three types of assets are commonly held, with ownership rates in 2016 varying between 1.2 percent (other bonds) and 13.9 percent (directly held stocks). The conditional median value of most of these assets also either fell or remained similar between 2013 and 2016, but mean values increased for all three types of assets.[24]

Ownership rates of pooled investment funds rose between 2013 and 2016, from 8.2 percent to 10 percent. Conditional median and mean values also rose substantially, exhibiting 38 percent and 63 percent growth rates, respectively.

Ownership of retirement accounts—including individual retirement accounts (IRAs), Keogh accounts, and certain employer-sponsored accounts, such as 401(k), 403(b), and thrift savings accounts—rose to 52 percent in 2016, following a period of decline between the 2007 and 2013 surveys. Median values of retirement accounts, however, were little changed, remaining at about $60,000 in 2016. The conditional mean value rose 10 percent to $228,900 in 2016.[25]

The percent of families owning the remaining financial asset categories—cash value of life insurance, other managed assets, and the catch-all "other" category—generally rose or remained similar between 2013 and 2016. The median and mean values of these types of asset generally also rose.

Nonfinancial Assets

Ownership of nonfinancial assets—including vehicles, residential and nonresidential property, and business equity—remained high in 2016 at 90.8 percent, falling only slightly from 2013. For most categories of nonfinancial assets (except business equity and other residential property), however, ownership rates fell.

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[23] In 2016, the SCF added questions about the ownership of reloadable prepaid debit cards and government benefit cards. A question about the combined balance on these type of cards was also added. For more details on these and other new questions, see https://www.federalreserve.gov/econres/scfindex.htm.

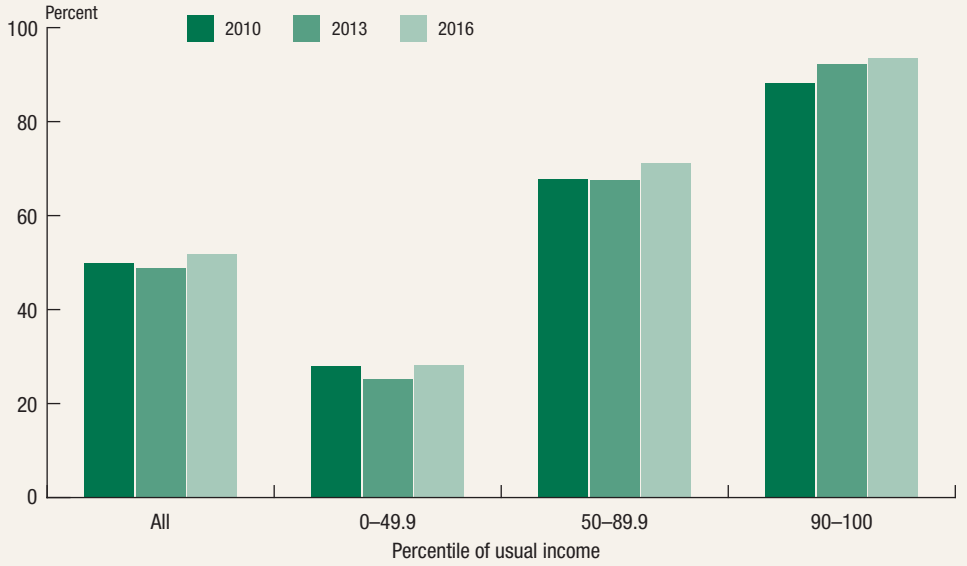
[24] See box 6, "Direct and Indirect Holdings of Publicly Traded Stock," for more details on patterns in stock holding.

[25] See box 7, "Retirement Accounts and Plan Participation," for more details.

Box 6. Direct and Indirect Holdings of Publicly Traded Stock

Families may hold stocks in publicly traded companies directly or indirectly, and information about each of these forms of stock holding is collected separately in the Survey of Consumer Finances.[1] When direct and indirect forms of stock holdings are combined, the 2016 data show a rebound in stock ownership over the most recent period. In 2016, 51.9 percent of families owned stocks, increasing from 48.8 percent in 2013 and also exceeding what was seen in the 2010 survey (figure A). Grouping families by their location in the usual income distribution reveals that the lowest and upper-middle income groups experienced strong increases in stock ownership from 2013 to 2016; stock ownership for these two groups is now above the level in the 2010 survey.[2] For the top income group, the rate of ownership increased over the most recent period, continuing the trend from the 2010 survey. Stock ownership for this group was 93.6 percent in 2016.

Figure A. Families with direct and indirect holdings of stock, 2010–16 surveys



In addition to the increase in stock ownership, the mean value of stock holdings for families with holdings increased dramatically from $278,300 in 2013 to $344,500 in 2016 (table B). Across the usual income distribution, the mean value of stock holdings increased from 2013 to 2016 for the upper-middle and top income groups, with the mean value rising substantially. For the lowest income group, the mean value in 2016 was only slightly below the level attained in 2013. The value of stock holdings varies substantially across usual income groups, with mean holdings for the top group about nine times the size of mean holdings of the upper-middle income group.

Table B. Mean levels for direct and indirect holdings of stock, 2010–16 surveys

Thousands of 2016 dollars

Family characteristic	Conditional mean value		
	2010	2013	2016
All	**235.4**	**278.3**	**344.5**
Percentile of usual income			
0–49.9	37.2	55.3	52.3
50–89.9	116.5	136.4	153.0
90–100	913.7	999.4	1,365.5

continued on next page

Box 6. Direct and Indirect Holdings of Publicly Traded Stock—*continued*

Among families that held stock, either directly or indirectly, in 2016, ownership through a tax-deferred retirement account was the most common (87.8 percent), followed by direct stock (26.9 percent), direct holdings of pooled investment funds (18.9 percent), and managed investment accounts or an equity interest in a trust or annuity (7.3 percent). From 2013 to 2016, ownership of stock through a tax-deferred retirement account and direct holding of pooled investment funds increased slightly, and ownership through all other types declined. The fraction of families that owned stock through multiple types increased to 32.8 percent in 2016, up from 31.6 percent in 2013.

[1] Indirect holdings are those in pooled investment funds, retirement accounts, and other managed assets.
[2] For a description of the usual income measure, see box 4, "Usual versus Actual Income."

The most commonly held type of nonfinancial asset in 2016 was vehicles, a very broad category that includes cars, vans, sport utility vehicles, trucks, motor homes, recreational vehicles, motorcycles, boats, airplanes, and helicopters. Between 2013 and 2016, the fraction of families owning a vehicle declined slightly from 86.3 percent to 85.2 percent. The median and mean value of vehicles owned by families rose, however, between 2013 and 2016. The median value rose from $16,300 to $17,300, and the mean rose from $23,300 to $25,300 between 2013 and 2016.[26]

Ownership of primary residences also fell, from 65.2 percent of families owning a primary residence in 2013 to 63.7 percent in 2016.[27] This decrease represents a continued decline since the 2004 SCF, when the homeownership rate was 69.1 percent. The conditional median and mean value of primary residences rose, however, by 6 percent and 11 percent, respectively. Among families who are homeowners, the median family's home was worth $185,000 in 2016, up from $175,300 in 2013. This increase reflects widespread increases in home prices between the two surveys, although the drop in homeownership rates indicates fewer families are sharing in those house price gains. Ownership rates and median and mean values of other residential property, which includes residences such as second homes and time shares, rose between 2013 and 2016.

Ownership of business equity increased between 2013 and 2016, from 11.7 percent to 13 percent, nearly rebounding to its 2010 level (13.3 percent).[28] The median family with business equity also experienced a 15 percent rise in value, with median business equity rising from $69,600 to $79,900 between 2013 and 2016. The mean value of business equity rose 19 percent.

Ownership of equity in nonresidential property fell from 7.2 percent to 6.2 percent, and conditional median and mean values of equity in nonresidential property rose 13 percent and 72 percent, respectively.

[26] Survey respondents are asked to provide the year, make, and model of each of their cars, vans, sport utility vehicles, and trucks. This information is used to obtain market prices from data collected by the National Automobile Dealers Association and a variety of other sources. For other types of vehicles, the respondent is asked to provide a best estimate of the current value.
[27] See box 8, "Homeownership and Net Housing Wealth," for more details.
[28] See box 9, "Holdings of Business Equity," for more details.

Table 4. Holding and values of debt items, 2013 and 2016 surveys
Thousands of 2016 dollars, except as noted

Types of debts	Percent holding		Conditional median value			Conditional mean value		
	2013	2016	2013	2016	Percent change 2013–16	2013	2016	Percent change 2013–16
Any debt	**74.5**	**77.1**	**62.3**	**59.8**	**-4**	**126.1**	**123.4**	**-2**
Secured by residential property								
Primary residence	42.9	41.9	118.6	111.0	-6	161.6	157.7	-2
Other	5.2	5.6	92.8	100.0	8	160.9	160.6	0
Lines of credit not secured by residential property	1.9	1.8	4.5	3.0	-33	36.3	55.7	54
Installment loans								
Education loans	20.0	22.4	16.5	19.0	15	29.8	34.2	15
Vehicle loans	30.9	33.8	12.3	12.8	5	15.0	17.2	14
Other installment loans	10.1	11.2	3.4	3.4	0	16.4	15.4	-6
Credit card balances	38.1	43.9	2.4	2.3	-3	5.9	5.7	-3
Other	6.6	5.4	4.1	5.0	21	15.1	26.8	78

Note: See the appendix for definitions of liability categories used in the SCF.

Debt, Debt Burden, and Credit Market Experiences

The fractions of families holding any type of debt rose between 2013 and 2016, from 74.5 percent to 77.1 percent, returning to a level similar to 2007, when 77.0 percent of families had any debt (table 4).[29] In contrast, the conditional median and mean value of debt held fell slightly between 2013 and 2016. The conditional median fell 4 percent, from $62,300 in 2013 to $59,800 in 2016. The conditional mean also fell, from $126,100 in 2013 to $123,400 in 2016, a decline of 2 percent.

Debt Holdings by Type

Between 2013 and 2016, the mix of debt held by families changed. Slightly fewer families held debt secured by a primary residence, and those that did have such types of debt owed smaller amounts. However, more families held education loans in 2016 than in 2013, and those with education loans owed larger amounts on the loans. Credit card balances have become the form of debt most widely held by families, edging out debt secured by a primary residence (hereafter, home-secured debt) for the first time since the 1998 SCF.

Paralleling the drop in homeownership, rates of holding of home-secured debt fell between 2013 and 2016. The fraction of families with mortgages and other home-secured debt fell from 42.9 percent in 2013 to 41.9 percent in 2016. This decline was slightly smaller than the 1.5 percentage point fall in homeownership observed in table 3. Home-secured debt, however, continued to be one of the most common types of debt held by families.

The conditional median and mean values of home-secured debt also fell between 2013 and 2016. The conditional median value of home-secured debt fell 6 percent, from $118,600 to $111,000, and the conditional mean value of home-secured debt fell 2 percent, from $161,600 to $157,700. The declines in holding and the conditional mean and median values of home-secured debt represented a continuation of declines seen between 2007 and

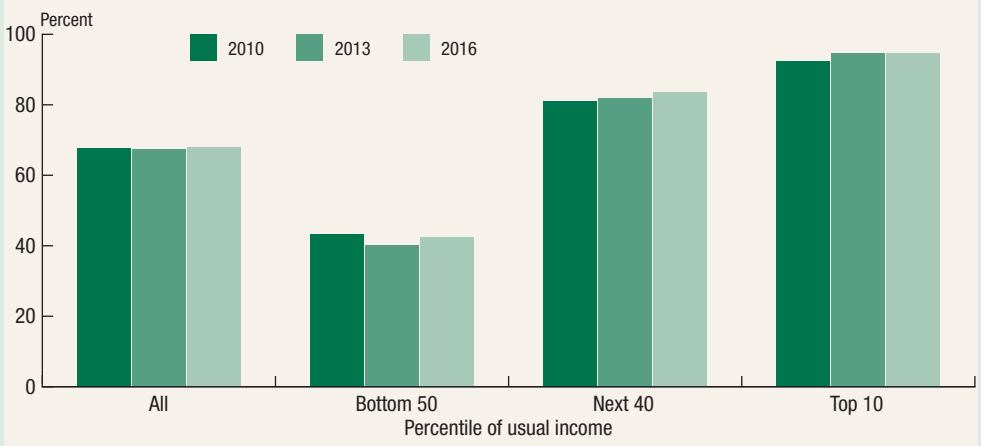
[29] See the appendix for a detailed definition of SCF liability categories.

Box 7. Retirement Accounts and Plan Participation

Ownership of retirement accounts and participation in retirement plans can both increase families' net worth and provide security to families nearing retirement age. A family is considered a participant in retirement plans if it has any of the following: an individual retirement account (IRA); an account-type job pension (defined contribution plan, or DC), including 401(k)s; or a defined benefit (DB) pension. The following discussion focuses on prime-age families—those with a head between ages 35 and 64—as these families typically have finished their education but have not fully retired.

Grouping families by usual income indicates that those in the bottom half of the usual income distribution saw increases in retirement plan participation between 2013 and 2016, in contrast to the decline observed between 2010 and 2013 (figure A).[1] This recent increase is a combination of increases in both IRA and DC coverage, although there was a decline in the fraction of families with a DB plan. Those in the upper-middle part of the usual income distribution also saw an increase in overall retirement coverage between 2013 and 2016, continuing growth observed between 2010 and 2013. This group also experienced a decline in the share of families with a DB plan, implying that overall, more families are relying on account-type plans alone. Families in the top 10 percent of the usual income distribution had basically unchanged retirement plan participation, at almost 95 percent in both 2013 and 2016. This group experienced increases in DB and DC coverage between 2013 and 2016, with small declines in IRA participation.

Figure A. Participation in any retirement plan for families ages 35–64, 2010–16 surveys



For many families, the amount of assets held within IRAs and DC plans (typically associated either with a current job or a past job) are among the most important components of their balance sheets and are a significant determinant of their future retirement security. Among families that have those assets, the average combined IRA and DC pension account balance increased since 2013 to $237,600 in 2016, and those gains occurred throughout the income distribution (table B). For families in the bottom half of the usual income distribution, average balances increased about one-third from 2013, reaching almost $54,000, which is slightly above the previous peak in 2007. Those in the next 40 percent of the usual income distribution saw a smaller average balance increase of about $4,000, or 2.8 percent, between 2013 and 2016. Average balances increased dramatically for those in the top of the usual income distribution, reaching $641,400 in 2016.

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2013.[30] These declines occurred in tandem with the increases in home values seen between 2013 and 2016 (table 3).

Box 7. Retirement Accounts and Plan Participation—*continued*

Table B. Mean retirement savings among those with an individual retirement account or an account-type job pension, families ages 35–64, 2010–16 surveys

Thousands of 2016 dollars

Family characteristic	Conditional mean value		
	2010	2013	2016
All	**204.6**	**200.8**	**237.6**
Percentile of usual income			
0–49.9	41.8	40.3	53.5
50–89.9	130.9	151.9	156.9
90–100	556.3	460.0	641.4

[1] For a description of the usual income measure, see box 4, "Usual versus Actual Income."

Lines of credit not secured by residential property were not widely held by families in either the 2013 or 2016 surveys, at around 2 percent of families. The conditional debt outstanding among those with such debts changed quite substantially, with median values falling about one-third and mean values rising about 54 percent between 2013 and 2016.

The fraction of families with education loans, and the conditional median and mean value of education loans, increased between 2013 and 2016, representing a continuation of the long-term trend of rising education debt. In 2013, 20.0 percent of families had an education loan. This share rose to 22.4 percent of families in 2016. The conditional median value of education loans rose 15 percent, from $16,500 in 2013 to $19,000 in 2016. The mean also rose 15 percent, from $29,800 to $34,200.[31]

As discussed earlier, the fraction of families owning a vehicle fell slightly between 2013 and 2016, to 85.2 percent. At the same time, the fraction of families with vehicle loans increased from 30.9 percent in 2013 to 33.8 percent in 2016. This finding represented a continuation of the trend between 2010 and 2013, when the fraction of families with a vehicle loan rose slightly. Between 2013 and 2016, the conditional median value of vehicle loans rose 5 percent and the conditional mean rose 14 percent. This movement indicates that although fewer families have vehicles overall, families are continuing to borrow more using loans on vehicles.

Other installment loans, often associated with purchases of furniture, appliances, and other durable goods, were held by 10.1 percent of families in 2013, rising to 11.2 percent of families in 2016. The conditional median balance on such loans was effectively unchanged between the two surveys, and the mean decreased 6 percent.

The fraction of families with outstanding balances on their credit cards rose between 2013 and 2016, making credit card debt the form of debt most widely held by families. This increase reversed declines seen between 2010 and 2013. In 2013, 38.1 percent of families held credit card debt, while in 2016, 43.9 percent of families held credit card debt. The

[30] Between 2007 and 2013, the fraction holding debt secured by a primary residence fell from 48.7 percent in 2007 to 47.0 percent in 2010 and 42.9 percent in 2013. Between 2007 and 2010, the conditional median value of home-secured debt fell 2.2 percent, and the conditional mean fell 1.2 percent. Between 2010 and 2013, the conditional median value of home-secured debt fell 2.1 percent, and the conditional mean fell 5.3 percent.

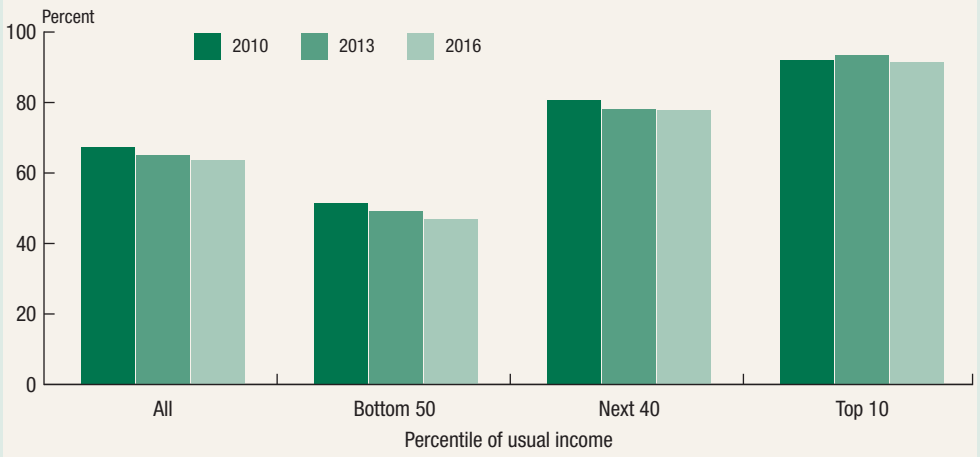
[31] See box 10, "Education Debt," for more details.

Box 8. Homeownership and Net Housing Wealth

The percentage of families that owned their primary residence fell from 65.2 percent in 2013 to 63.7 percent in 2016 (figure A). The last time the Survey of Consumer Finances recorded a homeownership rate this low was 1989.[1] Across families grouped by percentile of usual income, there are large differences in homeownership rates, which tend to increase with usual income.[2] For families in the bottom half of the income distribution, the homeownership rate was 46.9 percent in 2016, while for those in the top 10 percent by income, the homeownership rate was 91.4 percent.

Between 2013 and 2016, the home ownership rate fell across all usual income groups, representing a continuation of a trend of declining home ownership since 2007 for the bottom two usual income groups. In contrast, for the top income group, the homeownership rate rose slightly between 2010 and 2013.

Figure A. Homeownership rate, 2010–16 surveys



For families that own their primary residence, mean net housing value—defined as the home's value less any debts on the home—increased 20 percent between 2013 and 2016 after slightly declining between 2010 and 2013 (table B).[3] In 2016, among home-owning families, the average net housing wealth was $197,500.

Across usual income groups, the mean net value of housing increases as usual income rises. In 2016, the mean value of net housing wealth among homeowners in the bottom half of the income distribution was $107,100. For the top decile, the mean net value of housing was roughly five times larger, at $576,400.

Between 2013 and 2016, mean net housing value increased for all three groups, but the magnitudes of the increases differed, with higher-income families gaining more. For the bottom income group, net housing value rose the least, by 13 percent, between 2013 and 2016. For the upper-middle income group, mean net housing increased more than 18 percent between 2013 and 2016, while the top income group saw net housing value grow 25 percent.

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median family with a credit card balance carried $2,300 in 2016, down 3 percent from $2,400 in 2013. The mean balance fell from $5,900 in 2013 to $5,700 in 2016, also a 3 percent drop.

Debt Burden

The ability of individual families to service their loans is a function of many factors, including the level of their loan payments and the income and assets they have available to

Box 8. Homeownership and Net Housing Wealth—*continued*

Table B. Mean net housing value for homeowners, 2010–16 surveys

Thousands of 2016 dollars

Family characteristic	Conditional mean value		
	2010	2013	2016
All	**169.7**	**164.3**	**197.5**
Percentile of usual income			
0–49.9	107.1	95.2	107.7
50–89.9	130.7	130.0	153.9
90–100	481.6	460.4	576.4

[1] The home ownership rate in 1989 was 63.9 percent. It rose to a peak of 69.1 percent in 2004.
[2] For a description of the usual income measure, see box 4, "Usual versus Actual Income."
[3] Survey of Consumer Finances respondents are asked to report the value of their home. Only primary residences are included. Debts on the home include any mortgages or home equity loans against the primary residence.

meet those payments. In planning their borrowing, families make assumptions about their future ability to repay their loans. Problems may occur when events turn out to be contrary to those assumptions. If such misjudgments are sufficiently large and prevalent, a broad pattern of default, restraint in spending, and financial distress in the wider economy might ensue (such as was seen in the period after the 2007 survey).

The SCF data can be used to construct three measures of debt burdens: leverage ratios, debt-to-income ratios, and payment-to-income ratios. Leverage ratios compare debts to assets, debt-to-income ratios compare total debt to income, and payment-to-income ratios compare total payments made on debt to income. All three ratios can be constructed either in aggregate or as a median for debtors.[32]

Leverage ratios, debt-to-income ratios, and payment-to-income ratios all generally rose between 2004 and 2010 and then fell between 2010 and 2016 (table 5).[33] The aggregate leverage ratio, debt-to-income ratios, and payment-to-income ratios in 2016 are all below the 2004 levels.

In 2016, the median leverage ratio for debtors was 36.2 percent, down from 38.6 percent in 2013. The ratio remains just higher than the median of 34.7 percent in 2004 and 34.8 percent in 2007. In aggregate, the leverage ratio declined from 14.6 percent in 2013 to 12.1 percent in 2016.

In 2016, the median debt-to-income ratio for debtors was 95.1 percent, down from the level seen in 2013 (107.4 percent). The level in 2016 is lower than that witnessed in 2004, and similar trends can be seen for the aggregate.

[32] The aggregate is defined as the total amount of debt held/payments divided by the total assets held or income among all survey respondents. The median for debtors is defined as the median of each individual family's ratio among those carrying debt only.
[33] For definitions of the components of table 5, see the appendix.

Table 5. Debt burdens and credit market experiences, 2004-16 surveys
Percent or thousands of 2016 dollars

Measure of debt burden/interaction with credit markets	2004	2007	2010	2013	2016
Debt burden					
Leverage ratio					
Aggregate	15.0	14.8	16.4	14.6	12.1
Median for debtors	34.7	34.8	41.3	38.6	36.2
Debt to income ratio					
Aggregate	111.6	115.2	124.8	104.6	92.6
Median for debtors	107.0	111.1	118.8	107.4	95.1
Payment to income ratio					
Aggregate	14.4	14.6	14.7	12.0	10.8
Median for debtors	18.1	18.7	18.2	15.9	14.7
Fraction with payment to income ratio greater than 40%	9.4	11.4	10.4	8.2	7.0
Credit market experiences					
Credit constrained					
Turned down for credit (past year)	n.a.	n.a.	n.a.	n.a.	10.8
Did not apply for credit for fear of being turned down (past year)	n.a.	n.a.	n.a.	n.a.	14.4
Either turned down for credit or feared denial (past year)	n.a.	n.a.	n.a.	n.a.	20.8
Either turned down for credit or feared denial (past 5 years)	25.6	24.5	28.3	27.6	n.a.
Late on payments					
Late on payments	16.3	20.8	17.3	14.9	13.5
Late on payments 60 days or more	6.9	5.5	8.1	6.9	5.8
Took out a payday loan in past year	n.a.	2.4	3.9	4.2	3.4
Declared bankruptcy in past 5 years	4.4	3.8	3.6	4.1	3.0
Had foreclosure start in past 5 years	n.a.	n.a.	n.a.	n.a.	2.1
Use credit cards for convenience only/do not carry a balance	56.6	56.2	63.0	64.0	57.5

Note: See the appendix for a description of measures of debt burden and credit market experiences.
n.a. Not available (relevant data not collected).

Payment-to-income ratios for the median debtor fell from 15.9 percent to 14.7 percent between 2013 and 2016.[34] The 2016 level is lower than at any time between 2004 and 2013. Similar trends held for the aggregate payment-to-income ratios.

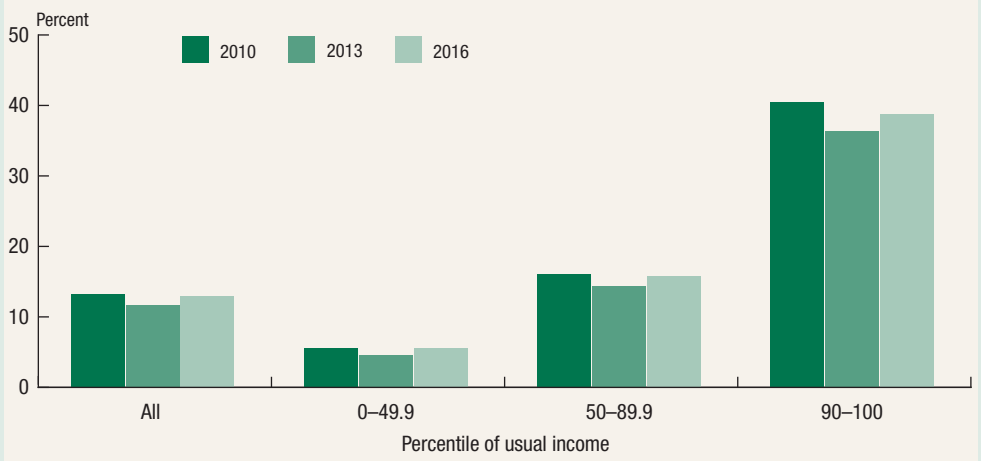
A limitation of using measures of debt burdens for the median debtor is that they may not be indicative of distress because they reflect the situation of a typical family. Unless errors of judgment by both families and lenders are pervasive, one would not expect to see signs of financial distress at the median. Thus, a more compelling indicator of distress is the proportion of families with unusually large debt burdens. In 2016, 7.0 percent of debtors had payment-to-income ratios greater than 40 percent. This value represents a decrease from 2013, when 8.2 percent of debtors had payment-to-income ratios greater than 40 percent. The levels in 2016 are lower than those witnessed at any time between 2004 and 2013.

[34] An alternative aggregate version of payment-to-income ratios is the debt service ratio. See Karen Dynan, Kathleen Johnson, and Karen Pence (2003), "Recent Changes to a Measure of U.S. Household Debt Service," *Federal Reserve Bulletin,* vol. 89 (October), pp. 417–26, https://www.federalreserve.gov/pubs/bulletin/2003/1003lead.pdf. A discussion of how this measure compares with the one presented here can be found in the appendix.

Box 9. Holdings of Business Equity

The fraction of families that owned a privately held business increased 1.3 percentage points between 2013 and 2016, to 13.0 percent (figure A).[1] The level in 2016 is only slightly below the level in the 2010 survey, rebounding from the decline between 2010 and 2013. Ownership of business equity also increased across all usual income groups over the recent period.[2] For the top two income groups, the levels are still slightly below levels in the 2010 survey. Families in the top income group saw the largest percentage point increase in business ownership, and the ownership level for this group, 38.7 percent, remains substantially higher than for other groups.

Figure A. Families with holdings of business equity, 2010–16 surveys



For families with business equity, the mean value increased substantially, rising from $1,004,200 in 2013 to $1,190,700 in 2016, well above the 2010 level (table B). All usual income groups experienced an increase in the mean value of business equity over the recent period, and in 2016, the mean value of business equity was higher than the 2010 value for all groups. The value of business equity varies substantially across usual income groups, with mean holdings for the top group about 10 times the size of mean holdings of the upper-middle income group.

Table B. Family holdings of business equity, 2010–16 surveys

Thousands of 2016 dollars

Family characteristic	Conditional mean value		
	2010	2013	2016
All	**871.3**	**1,004.2**	**1,190.7**
Percentile of usual income			
0–49.9	204.2	157.5	208.0
50–89.9	285.5	283.2	330.2
90–100	2,265.0	2,685.0	3,307.0

[1] The forms of business in this category are sole proprietorships, limited partnerships, other types of partnerships, subchapter S corporations and other types of corporations that are not publicly traded, limited liability companies, and other types of private businesses. If the family surveyed lived on a farm or ranch that was used at least in part for agricultural business, the value of that part, net of the corresponding share of associated debts, is included with other business assets.

[2] For a description of the usual income measure, see box 4, "Usual versus Actual Income."

Box 10. Education Debt

Education loan debt is the largest source, in dollar terms, of nonmortgage debt owed by families in the 2016 Survey of Consumer Finances (SCF) (see table 4 in the main text). The analysis presented here will focus on the growth of education loans between the 2013 and 2016 surveys by income for "young families," defined as those with a head of household younger than age 40 at the time of the survey.[1]

The fraction of young families with education debt increased from 38.8 percent to 43.3 percent between 2013 and 2016 (table A). Conditional on having education debt, the mean and median levels of education debt also increased between 2013 and 2016.

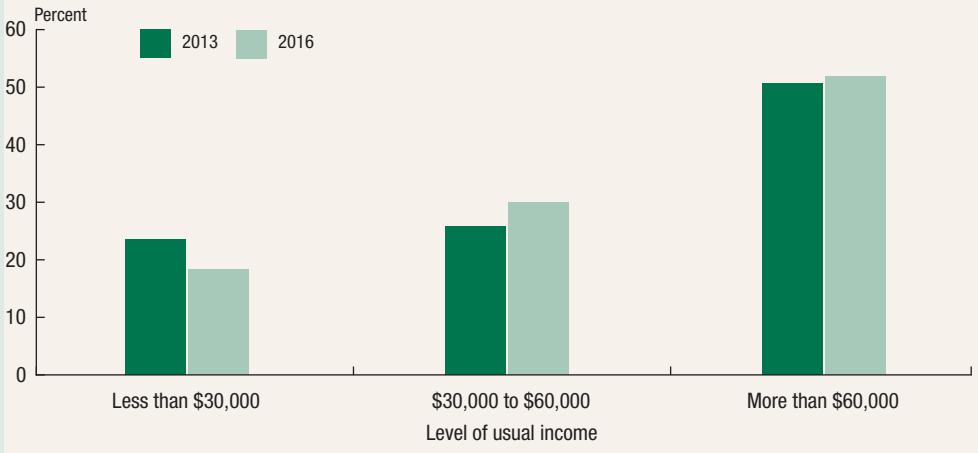
Table A. Education debt outstanding among young families, 2013 and 2016 surveys

Thousands of 2016 dollars, except as noted

Measure of education debt	2013	2016
Percent with education debt	38.8	43.3
Mean education debt	30.7	33.3
Median education debt	17.3	19.0

Similar to the 2013 SCF, about 50 percent of the education debt of young 2016 SCF families was owed by families earning more than $60,000 (figure B). Between 2013 and 2016, the share of education debt held by families with incomes less than $30,000 declined: About 18 percent of young families' education debt is owed by those making less than $30,000, about 5 percentage points less than in 2013.[2] This indicates more education debt is held by families who are likely to have income levels that can support their loan payments.

Figure B. Share of young families' education loan debt, by income group, 2013 and 2016 surveys



[1] Note that the SCF does not sample institutional populations, such as college dorms. The statistics reported here also do not include education debt held by individuals in the household who are not members of the primary economic unit and solely responsible for the education debt (such as financially independent roommates and adult children living with a parent).

[2] Young families with education debt in this income group generally have no college degree, though about one-fourth of these families held a bachelor's degree or higher in both the 2013 and 2016 SCF.

Credit Market Experiences

The SCF also collects various measures of respondents' recent experiences with credit markets, such as information on credit applications and payment behavior. Overall, SCF

families' capacity to stay current on their financial obligations increased between 2013 and 2016. The fraction of families who were late on payments and the fraction who took out a payday loan both fell.

The SCF asks two questions intended to capture whether families are likely credit constrained: first, if the family was turned down for credit over the past 12 months, and, second, if the family decided not to apply for credit during the past 12 months for fear of being turned down.[35] In 2016, 20.8 percent of families responded "yes" to one or both of these questions.

The SCF also collects information on families' debt payment behavior. Families that have any debt at the time of their interview are asked whether they were behind on any of their loan payments in the preceding year. In 2016, 13.5 percent of families reported being late on payments, a lower fraction than at any time between 2004 and 2013. The percent of families who reported being late on payments 60 or more days declined from 6.9 percent in 2013 to 5.8 percent in 2016, substantially below the recent peak of 8.1 percent in 2010.

The SCF asks respondents if they have taken out a payday loan in the past year. Payday loans are unsecured loans that are typically small and short-term. Because these loans generally carry interest rates that far exceed those for conventional forms of credit, usage of payday loans is often a signal that an individual cannot obtain credit by other means.[36] In 2016, 3.4 percent of families reported taking out a payday loan, down from 4.2 percent in 2013 and 3.9 percent in 2010.

An additional measure of financial distress and problems managing debt is bankruptcy. The SCF asks respondents if they have declared bankruptcy in the past five years. In 2016, 3.0 percent of families reported having declared bankruptcy in the past five years, down from 4.1 percent in 2013 and lower than all years since 2004.

In the 2016 survey, the SCF began collecting information about another measure of financial distress, families' experiences with foreclosures.[37] In 2016, 2.1 percent of families reported having foreclosure proceedings brought against properties they owned in the past five years. Of these families, 68 percent eventually lost their property as a result of the foreclosure process.

A final measure of debt payment behavior covered in the SCF is whether a family uses credit cards for convenience only or carries a balance month to month. In 2016, 58 percent of families reported using credit cards for convenience only (not carrying a balance), down from 64 percent in 2013 and 63 percent in 2010.

[35] This 12-month time frame is different from analogous questions in earlier surveys, which had asked families about their experiences with credit constraints over the past 5 years. Consequently, table 5 does not report historical data on the current questions on credit constraints in the past 12 months.

[36] Research indicates payday borrowers apply for payday loans when they have limited access to mainstream credit. See Neil Bhutta, Paige Marta Skiba, and Jeremy Tobacman (2015), "Payday Loan Choices and Consequences," *Journal of Money, Credit, and Banking,* vol. 47 (March–April), pp. 223–60.

[37] See box 2, "New Questions from the 2016 Survey of Consumer Finances Redesign," and the appendix for more on changes to the 2016 survey.

Appendix: Survey Procedures and Statistical Measures

The 2016 data used here are derived from the final internal version of the survey information. Data from this survey, suitably altered to protect the privacy of respondents, along with additional tabulations of data from the surveys beginning with 1989, are expected to be available in September 2017 on the Federal Reserve Board's website.[38]

As part of the general reconciliations required for this article, the survey data were compared with many external estimates. One particularly important comparison is between the Survey of Consumer Finances (SCF) and the Federal Reserve's Statistical Release Z.1, Financial Accounts of the United States, for the household sector.[39] This comparison suggests that when the definitions of the variables in the two sources are adjusted to a common conceptual basis, the estimates of totals in the two systems tend to be close. The data series in the SCF and in Statistical Release Z.1 usually show very similar growth rates.[40] In general, the income and net worth data from the SCF can be compared with those of other household surveys only in terms of the medians because of the special design of the SCF sample.[41]

Adjustment for Inflation

In this article, all dollar amounts from the SCF are adjusted to 2016 dollars using the "current methods" version of the consumer price index (CPI) for all urban consumers. In an ongoing effort to improve accuracy, the Bureau of Labor Statistics has introduced several revisions to its CPI methodology. The current-methods index attempts to extend these changes to earlier years to obtain a series as consistent as possible with current practices in the official CPI.[42] To adjust assets and liabilities to 2016 dollars and to adjust

[38] Data from the 2016 SCF as well as links to the data used in this article for earlier periods and links to working papers describing statistical methodologies are available on the Board's public website at https://www.federalreserve.gov/econresdata/scf/scfindex.htm. Results reported in this article for earlier surveys may differ from the results reported in earlier articles because of additional statistical processing, correction of data errors, revisions to the survey weights, conceptual changes in the definitions of variables used in the articles, and adjustments for inflation.

[39] See Board of Governors of the Federal Reserve System (2017), Statistical Release Z.1, "Financial Accounts of the United States" (June 8), https://www.federalreserve.gov/releases/z1.

[40] For details on how these comparisons are structured and the results of comparisons for earlier surveys, see Alice M. Henriques, and Joanne W. Hsu (2013), "Analysis of Wealth Using Micro and Macro Data: A Comparison of the Survey of Consumer Finances and Flow of Funds Accounts," Finance and Economics Discussion Series 2013-46 (Washington: Board of Governors of the Federal Reserve System, May), https://www.federalreserve.gov/pubs/feds/2013/201346/201346pap.pdf, and Lisa J. Dettling, Sebastian J. Devlin-Foltz, Jacob Krimmel, Sarah J. Pack, and Jeffrey P. Thompson (2015), "Comparing Micro and Macro Sources for Household Accounts in the United States: Evidence from the Survey of Consumer Finances," Finance and Economics Discussion Series 2015-086 (Washington: Board of Governors of the Federal Reserve System, June), http://dx.doi.org/10.17016/FEDS.2015.086.

[41] Family incomes are a good example of issues that arise when comparing SCF means and medians against other survey estimates. Over the 2013–16 period, estimates of inflation-adjusted household income for the previous year from the Current Population Survey (CPS) of the U.S. Census Bureau show an increase in both the median (7.8 percent) and the mean (7.6 percent). The changes in both the median and the mean are slightly smaller in absolute terms than the corresponding increases in the SCF. The medians for 2016 are similar in the SCF ($52,700) and the CPS ($56,700). Typically, the SCF shows a higher level of mean income than does the CPS; for 2016, the SCF yields an estimate of $102,700, while the CPS yields an estimate of $74,500. The two surveys differ in their definitions of the units of observation and in other aspects of their methodologies. Most relevant is the fact that a CPS household can contain more people than a corresponding SCF family. If the SCF measure is expanded to include the income of household members not included in the SCF definition of a family, the median rises 10.2 percent over the period (from $51,500 in 2013 to $56,700 in 2016), while the mean rises 14.4 percent (from $92,600 in 2013 to $105,900 in 2016). The substantial difference in mean levels is likely the result of the truncation of large values in the CPS data above a certain amount, which is done with the intent of minimizing the possibility that participants in that survey might be identifiable.

[42] For technical information about the construction of this index, see Kenneth J. Stewart and Stephen B. Reed (1999), "Consumer Price Index Research Series Using Current Methods, 1978–98," *Monthly Labor Review,* vol. 122 (June), pp. 29–38.

family income for the preceding calendar year to 2016, the figures given in the following table were applied:

Survey year	Adjustment factor for assets and debts in the survey year	Adjustment factor for income in the calendar year before the survey year
2004	1.2718	1.3061
2007	1.1580	1.1909
2010	1.1053	1.1232
2013	1.0311	1.0461
2016	1.0000	1.0126

Definition of "Family" in the Survey of Consumer Finances

The definition of "family" used throughout this article differs from that typically used in other government studies. In the SCF, a household unit is divided into a primary economic unit (PEU)—the family—and everyone else in the household. The PEU is intended to be the economically dominant single person or couple (whether married or living together as partners) and all other persons in the household who are financially interdependent with that economically dominant person or couple.

This report also designates a head of the PEU, not to convey a judgment about how an individual family is structured but as a means of organizing the data consistently. If a couple is economically dominant in the PEU, the head is the male in a mixed-sex couple or the older person in a same-sex couple. If a single person is economically dominant, that person is designated as the family head in this report.

Asset and Liability Categories in the Survey of Consumer Finances

The specific concepts of asset and liability categories in the SCF are necessarily tied to the survey question wording and associated field interviewer instructions, both of which can be found in the SCF codebook for the year(s) in question.[43] What follows is a general exposition of the asset and liability categories reported in the tables.

Transaction accounts include checking, savings, and money market deposit accounts; money market funds; and call or cash accounts at brokerages and prepaid debit cards. Call accounts include those that hold money received from the sale of securities until the money is reinvested. The savings account category includes a relatively small number of tax-preferred accounts such as medical or health savings accounts and Coverdell or 529 education accounts. Prepaid debit cards include reloadable prepaid debit cards and government benefit cards, and were collected in the SCF for the first time in 2016.

Certificates of deposit are accounts that are held for a set period of time that must be cashed or renewed at the maturity date. Savings bonds include only U.S. government issues; recent series include EE, HH, and I, and older bonds may be series E and H. Other bonds include only those held directly (not part of a managed investment account or bond fund) and include corporate and mortgage-backed bonds; federal, state, and local government bonds; and foreign bonds. Stocks include publicly traded stocks that are directly held—that is, corporate equities not held as part of a managed investment account or mutual fund.

Pooled investment funds include stock funds, tax-free bond funds, government bond funds, other bond funds, and any combinations thereof, but exclude money market funds and

[43] Codebooks for each SCF wave can be found at https://www.federalreserve.gov/econresdata/scf/scfindex.htm.

indirectly held mutual funds. These funds include all other types of directly held pooled investments, such as traditional open-end and closed-end mutual funds, exchange-traded funds (ETFs), real estate investment trusts, and hedge funds.

Retirement accounts include individual retirement accounts (IRAs), Keogh accounts, and certain employer-sponsored accounts, such as 401(k), 403(b), and thrift savings accounts from current or past jobs; other current job plans from which loans or withdrawals can be made; and accounts from past jobs from which the family expects to receive the account balance in the future. This definition of employer-sponsored plans is intended to confine the analysis to accounts that are portable across jobs and for which families will ultimately have the option to withdraw the balance. Usually, such accounts may be invested in virtually any asset, including stocks, bonds, pooled investment funds, options, and real estate. In principle, employer-sponsored plans may be invested in a similarly broad way, but, in practice, a person's choices for investment are sometimes limited to a narrower set of assets.[44]

Cash value life insurance is the current (nonzero) value of any life insurance policies with a cash value that can be withdrawn. The survey measures the value of such policies according to their current cash value, not their death benefit. In this article, the cash value is included as an asset only when the cash value at the time of the interview was nonzero. This designation excludes term life insurance policies, which only provide a death benefit.

Other managed assets include personal annuities and trusts with an equity interest and managed investment accounts. Annuities may be those in which the family has an equity interest in the asset or in which the family possesses an entitlement only to a stream of income. The wealth figures in this article include only the annuities in which the family has an equity interest.[45] The trusts or managed investment accounts included in other managed assets are those in which families have an equity interest and for which components were not separately reported. Typically, such accounts are those in which the ownership is complicated or the management is undertaken by a professional.[46]

Other financial assets include oil and gas leases, futures contracts, royalties, proceeds from lawsuits or estates in settlement, and loans made to others. One specific financial asset excluded from this category and any other is employment-related stock options. Because such options are typically not publicly traded, or their execution is otherwise constrained,

[44] Although tax-deferred retirement assets are clearly an important element in retirement planning, families may hold a variety of other assets that are intended, at least in part, to finance retirement. Two common and often particularly important types of retirement plans are not included in the assets described in this section: Social Security (the federally funded Old-Age and Survivors' Insurance program (OASI)) and employer-sponsored defined-benefit plans. OASI is well described elsewhere, and it covers the great majority of the population. (See Social Security Administration, "Online Social Security Handbook: Your Basic Guide to the Social Security Programs," Publication 65-008, https://www.ssa.gov/OP_Home/handbook/handbook.html.) The retirement income provided by defined-benefit plans is typically based on workers' salaries and years of work with an employer, a group of employers, or a union. Unfortunately, future income streams from OASI and defined-benefit plans cannot be translated directly into a current value because valuation depends critically on assumptions about future events and conditions—work decisions, earnings, inflation rates, discount rates, mortality, and so on—and no widely agreed-upon standards exist for making these assumptions.

[45] In 2016, 5.3 percent of families reported having any type of annuity, and of these families, 75 percent reported having an equity interest.

[46] In 2016, 87.3 percent of families with trusts or managed investment accounts had an equity interest in such an account. The survey encourages respondents who have trusts or managed investment accounts that are held in relatively common investments to report the components separately. Of the 4.2 percent of families that reported having any kind of trust or managed investment account in 2016, 53.3 percent of them reported at least one of the component assets separately. Of families that detailed the components in 2016, 86.9 percent reported some type of financial asset, 15.4 percent reported a primary residence, 16.0 percent reported other real estate, 5.6 percent reported a business, and 1.2 percent reported another type of asset.

their value is uncertain until the exercise date; until then, meaningful valuation would require complex assumptions about the future behavior of stock prices.

Vehicles include cars, vans, sport utility vehicles, trucks, motor homes, recreational vehicles, motorcycles, boats, airplanes, and helicopters.[47] Primary residences include mobile homes and their sites, the parts of farms and ranches not used for farming or ranching business, condominiums, cooperatives, townhouses, other single-family homes, and other permanent dwellings. Other residential property includes second homes, time-shares, one- to four-family rental properties, and other types of residential properties. It also includes outstanding balances on loans that the family may have made to finance the sale of properties they previously owned and which are still owed to the family.

Nonresidential real estate includes the following types of properties unless they are owned through a business: commercial property, rental property with five or more units, farm and ranch land, undeveloped land, and all other types of nonresidential real estate. Most often, nonresidential real estate properties are functionally more like a business than a residential property. They may have several owners, they are typically worth a considerable amount, and they often carry large mortgages, which appear to be paid from the revenues from the property, not the family's other income. As in the case of privately owned businesses, the value of the property in this analysis is taken to be the net value.

Business equity includes net worth in the following forms of business: sole proprietorships, limited partnerships, other types of partnerships, S corporations and other types of corporations that are not publicly traded, limited liability companies, and other types of private businesses. If the family lived on a farm or ranch that was used at least in part for agricultural business, the value of that part, net of the corresponding share of associated debts, is included with other business assets. In the survey, self-employment status and business ownership are independently determined.[48]

Debt secured by residential property consists of first-lien and junior-lien mortgages and home equity lines of credit (HELOCs) secured by the primary residence. For purposes of this article, first- and junior-lien mortgages consist only of closed-end loans—that is, loans typically with a one-time extension of credit, a set frequency of repayments, and a required repayment size that may be fixed or vary over time in accordance with a pre-specified agreement or with changes in a given market interest rate.[49] As a type of open-ended credit, HELOCs typically allow credit extensions at the borrower's discretion subject to a prearranged limit and allow repayments at the borrower's discretion subject to a prearranged minimum size and frequency.

Lines of credit not secured by residential property are any lines of credit except HELOCs and borrowing on credit cards.

The term "installment loan" describes closed-end consumer loans—that is, loans that typically have fixed payments and a fixed term. The most common examples are education loans; automobile loans; and loans for furniture, appliances, and other durable goods. Other installment loans include all closed-end consumer loans that are not for education or

[47] Of families owning any type of vehicle in 2016, 99.7 percent had a car, van, sport utility vehicle, motorcycle, or truck. The remaining types of vehicles were held by 12.8 percent of families.

[48] Among the 13.0 percent of families with a business in 2016, 66.0 percent had a family head or the spouse or partner of the head who was self-employed; among the 12.4 percent of families in which either the head or the spouse or partner of the head was self-employed, 68.8 percent owned a business.

[49] Of all families, 39.4 percent had a first-lien mortgage in 2016 (41.0 percent in 2013), 2.3 percent had a junior-lien mortgage (2.7 percent in 2013), 6.7 percent had a home equity line of credit (7.5 percent in 2013), and 4.4 percent had a home equity line of credit with an outstanding balance (5.0 percent in 2013).

a vehicle—that is, loans that typically have fixed payments and a fixed term. Examples include loans for furniture, appliances, and other durable goods.

Credit card balances consist of balances on bank-type cards (such as Visa, MasterCard, and Discover as well as Optima and other American Express cards that routinely allow holders to carry a balance), store cards or charge accounts, gasoline company cards, so-called travel and entertainment cards (such as American Express cards that do not routinely allow holders to carry a balance and Diners Club), other credit cards, and revolving store accounts that are not tied to a credit card. Balances exclude purchases made after the most recent bill was paid.

The "other" debt category comprises loans on cash value life insurance policies, loans against pension accounts, borrowing on margin accounts, and a miscellaneous category largely comprising personal loans not explicitly categorized elsewhere.

Finally, the SCF measure of liabilities excludes debt owed by family-owned businesses and debt owed on nonresidential real estate; in this article, such debt is netted against the corresponding assets.

Measures of Debt Burden and Credit Market Experiences in the Survey of Consumer Finances

The SCF includes several questions designed to capture information about respondents' debt burdens and interactions with credit markets. The specific concepts addressed in the SCF are necessarily tied to the survey question wording and associated field interviewer instructions, which can be found in the SCF codebook for the year(s) in question.[50] What follows is a general exposition of the debt burden and credit market experience measures reported in the tables.

Leverage ratios compare the total of all debts to the total of all assets. The aggregate version of this measure is the sum of all debts for all SCF respondents, divided by the sum of all assets for SCF respondents. The median for debtors is the median of each individual family's leverage ratio and is calculated for those with positive values of total debt only.

The aggregate debt-to-income ratio is the sum of liabilities for all SCF respondents, divided by the total income for all SCF respondents. The median for debtors is the 50th percentile of an individual family's debt-to-income ratios and is calculated for those with positive values of total debt only.

Payment-to-income ratios measure total debt payments relative to total income.[51] The aggregate version of this measure is the sum of all debt payments for all SCF respondents, divided by total income for all SCF respondents. The median for debtors is the 50th percentile of an individual family's payment-to-income ratios and is calculated for those with positive values of total debt only.

It should be recognized that the aggregate measure of payment-to-income ratios that is referenced in this article can differ from aggregate measures constructed from other sources

[50] Codebooks for each SCF wave can be found at https://www.federalreserve.gov/econresdata/scf/scfindex.htm.

[51] The definition of debt payments in the SCF does not include payments on leases or rental payments. The survey collects information on vehicle lease payments and rent on primary residences, and, thus, in principle a broader measure of debt payments could be constructed, one that would be similar to the "financial obligations ratio" estimated by the Federal Reserve staff.

such as the debt service ratio.[52] The survey measure of payments relative to income can differ from the aggregate-level measure for several reasons. First, the debt payments included in each measure are different. The aggregate-level measure includes only debts originated by depositories, finance companies, and other financial institutions, whereas the survey includes, in principle, debts from all sources. Second, the aggregate-level measure uses an estimate of disposable personal income from the national income and product accounts for the period concurrent with the estimated payments as the denominator of the ratio, whereas the survey measure uses total before-tax income reported by survey families for the preceding year; the differences in these two income measures are complex. Third, the payments in the aggregate-level measure are estimated using a formula that entails many assumptions about minimum payments and the distribution of loan terms at any given time; the survey measure of payments is directly asked of the survey respondents but may also include payments of taxes and insurance on real estate loans. Fourth, because the survey measures of payments and income are based on the responses of a sample of respondents, they may be affected both by sampling error and by various types of response errors. As mentioned earlier in this article, the survey income measure tracks the most comparable measure of income in the Census Bureau's Current Population Survey (CPS).

The SCF asks two questions that are intended to capture whether families are credit constrained, which is broadly defined as having difficulty accessing credit. The first question asks the respondent if the family was turned down for credit at any point in the past year. The second asks if the family decided not to apply for credit at some time within the past year for fear of being turned down.[53] A combination of these two questions is used to measure overall credit constraints.

Delinquency on debt obligations is captured by asking families that have any debt at the time of their interview whether they have been behind in any of their loan payments in the preceding year. The survey asks if respondents have been behind at all and if they have been behind in payments for 60 or more days.

Payday loans are defined as loans that are meant to be repaid in full out of the respondent's next paycheck; they are unsecured loans that are typically small, short-term, and carry above-average interest rates.

Bankruptcy behavior is a retrospective question in which the respondent reports whether he had declared bankruptcy at any time in the past five years.

Foreclosure experience is a retrospective question in which the respondent reports whether he has had foreclosure proceedings brought against a property owned by the family at any time in the past five years.

Finally, convenience use of credit cards is determined using questions on whether a respondent had positive balances after the most recent payment for bank-type cards (such as Visa, MasterCard, and Discover as well as Optima and other American Express cards that routinely allow holders to carry a balance), store cards, gasoline company cards, and other credit cards.

[52] See Karen Dynan, Kathleen Johnson, and Karen Pence (2003), "Recent Changes to a Measure of U.S. Household Debt Service," *Federal Reserve Bulletin,* vol. 89 (October), pp. 417–26, https://www.federalreserve.gov/pubs/bulletin/2003/1003lead.pdf.

[53] The time frame for the two questions is different than analogous questions from earlier surveys, which had asked families about their experiences with credit constraints over the past five years.

Percentiles of the Distributions of Income and Net Worth

Throughout this article, references are made to various percentile groups of the distributions of income or net worth. For a given characteristic, a percentile can be used to define a family's rank relative to other families. For example, the 10th percentile of the distribution of usual income is the amount of income received by a family for whom less than 10 percent of other families have lower incomes and 90 percent have higher incomes. The percentiles of the distributions of income and net worth used to define the income and net worth groups in tables 1 and 2 in the article are given in the following table:

Family Characteristic	Survey year				
	2004	2007	2010	2013	2016
Percentile of usual income					
20	26,600	26,000	27,000	24,100	25,300
40	45,700	44,700	44,900	41,800	43,500
60	71,800	71,500	69,600	65,100	69,500
80	116,200	113,700	112,300	107,700	111,400
90	169,800	160,800	168,500	159,400	177,100
Percentile of net worth					
25	16,900	16,400	9,200	9,000	10,300
50	118,400	139,700	85,400	83,700	97,300
75	418,600	431,700	333,500	327,100	369,100
90	1,060,600	1,054,200	1,052,800	971,000	1,186,300

The groups that are created when a distribution is divided at every 10th percentile are commonly referred to as deciles. Similarly, when a distribution is divided at every 20th (25th) percentile, the groups are known as quintiles (quartiles). Families in the first income decile, for example, are those with income below the 10th percentile.

Racial and Ethnic Identification

In this article, the race and ethnicity of a family in the SCF are classified according to the self-identification of that family's original respondent to the SCF interview. For greater comparability with earlier SCF data, the data reported in this article group respondents into four classifications based on their responses to the racial identification question: white non-Hispanic, black or African-American non-Hispanic, Hispanic or Latino, and other or multiple race. The "other or multiple race" classification includes respondents identifying as Asian, American Indian, Alaska Native, Native Hawaiian, Pacific Islander, other race, and all respondents reporting more than one racial identification.[54]

The questions underlying the method of classification used in the survey were changed in both 1998 and 2004. Starting in 1998, SCF respondents were allowed to report more than one racial identification; in surveys before then, only one response was recorded. For maximum comparability with earlier data, respondents reporting multiple racial identifications were asked to report their strongest racial identification first. In data reported in this article, respondents reporting multiple racial identifications in the surveys starting with 1998 are classified as "other or multiple race." In the 2016 SCF, 6.4 percent of respondents reported more than one racial identification, up from 6.1 percent in 2013, 5.4 percent in

[54] Articles for earlier years of the SCF reported data that classified all families into two groups: white non-Hispanic and nonwhite or Hispanic. The definition for white non-Hispanic in this article is consistent with that used in earlier years, while the nonwhite or Hispanic group has been split into three classifications (black or African-American non-Hispanic, Hispanic or Latino, and other or multiple race) in data reported in this article.

2007, and 2.3 percent in 2004. The public release data set includes the ethnic identification and racial identification variables, enabling the construction of alternative classifications.

Beginning with the 2004 survey, the question on racial identification is preceded by a question on whether respondents consider themselves to be Hispanic or Latino in culture or origin; previously, such ethnic identification was captured only to the extent that it was reported as a response to the question on racial identification. The classifications in this article ignore the information on ethnic identification available in the surveys since 2004, again for greater comparability with earlier SCF data. Of those who responded affirmatively to the question on Hispanic or Latino identification in 2016, 91.6 percent also reported "Hispanic or Latino" as one of their racial identifications, and 82.5 percent reported it as their primary racial identification. Because the question on Hispanic or Latino ethnicity precedes the one on racial identification in the surveys from 2004 through 2016, the answer to the second of these two questions may have been influenced by the answer to the first.[55]

Classifications of Educational Attainment

In this article, the educational attainment of a family refers to the highest degree obtained by the household head. The groups are as follows: no high school diploma, high school diploma (includes individuals with a high school diploma or GED or other equivalency program), some college (includes individuals with some college but no degree or an associate's degree), and college degree (includes individuals with a bachelor's degree or higher). Beginning with the 2016 survey, the SCF modified its educational attainment question to more closely align the SCF with other household surveys, including the Census and CPS. For surveys before 2016, respondents were asked to list the highest grade of school or year of college completed, and follow-up questions asked the respondent about the type of degree obtained. Starting with the 2016 survey, the first educational attainment question asks about the highest degree obtained, and follow-up questions ask respondents who report a high school diploma whether it was obtained by getting a GED or other equivalency program, and respondents who report some college the number of years of college. It is possible this change may have prompted changes in reporting, although the educational attainment of SCF families was similar to CPS families in both 2013 and 2016.[56] A difference between the way the data are reported in this article compared with previous versions of this article is that families where the household head has an associate's degree could have been classified in the college degree group, whereas in 2016 those families are all classified in the some college group.

The Sampling Techniques

The survey is expected to provide a core set of data on family income, assets, and liabilities. The major aspects of the sample design that address this requirement have been largely constant since 1989. The SCF combines two techniques for random sampling. First, a standard multistage area-probability sample (a geographically based random sample) is selected

[55] For a comprehensive discussion of standards for defining race and ethnicity, see Executive Office of the President, Office of Management and Budget (2002), "Provisional Guidance on the Implementation of the 1997 Standards for Federal Data on Race And Ethnicity," guidance document (Washington: Executive Office of the President, December 15).

[56] In 2013, the educational attainment of SCF (CPS) household heads was the following: 11 percent (11.3 percent) had no high school diploma, 31.3 percent (27.9 percent) had a high school diploma, 25.7 percent (29 percent) had some college, and 32 percent (31.8 percent) had a college degree. In 2016, the educational attainment of SCF (CPS) household heads was the following: 12.7 percent (10.4 percent) had no high school diploma, 26 percent (27.2 percent) had a high school diploma, 27.3 percent (28.9 percent) had some college, and 34 percent (33.5 percent) had a college degree.

to provide good coverage of characteristics, such as homeownership, that are broadly distributed in the population.

Second, a supplemental sample is selected to disproportionately include wealthy families, which hold a relatively large share of such thinly held assets as noncorporate businesses and tax-exempt bonds. Called the "list sample," this group is drawn from a list of statistical records derived from tax returns. These records are used under strict rules governing confidentiality, the rights of potential respondents to refuse participation in the survey, and the types of information that can be made available. Persons listed by *Forbes* magazine as being among the wealthiest 400 people in the United States are excluded from sampling.

Of the 6,254 interviews completed for the 2016 SCF, 4,754 were from the area-probability sample, and 1,500 were from the list sample; for 2013, 4,568 were from the area-probability sample, and 1,458 were from the list sample. The number of families represented in the surveys considered in this article is given by the following table:

Year	Number of families represented (millions)
2001	106.5
2004	112.1
2007	116.1
2010	117.6
2013	122.5
2016	126.0

Overall population growth between 2013 and 2016 was 2.7 percent, according to figures from the Census Bureau, up slightly from the 2.2 percent growth rate between 2010 and 2013. Also according to Census Bureau estimates, the number of households increased 2.7 percent between 2013 and 2016—well below the rate of household formation between 2010 and 2013, which was 4.2 percent. With the population growing at a comparable rate to household formation, the average number of persons per household barely changed, from 2.54 people in 2013 to 2.53 in 2016.

The Interviews

Although questions have been modified and new questions added over time, the core of the survey questionnaire has changed in only minor ways since 1989. Changes to the questionnaire generally include instances in which the structure was altered to accommodate changes in financial behaviors, in types of financial arrangements available to families including those with businesses that are not publicly traded, and in regulations covering data collection. In 2016, interview sections on educational attainment, education loans, payment methods, and financial institutions were revised, and additional questions addressing financial literacy among respondents, parental educational attainment, and decisions under hypothetical financial situations have also been included (see box 2, "New Questions from the 2016 Survey of Consumer Finances Redesign").[57] For all changes, every effort has been made to ensure the maximum degree of comparability of the data over time. Except where noted in the article, the data are highly comparable over time.

The generosity of families in giving their time for interviews has been crucial to the ongoing success of the SCF. In the 2016 SCF, the median interview length was about 90 minutes. However, in some particularly complicated cases, the amount of time needed was substan-

[57] For a detailed list of all changes to the questionnaire in 2016, see https://www.federalreserve.gov/econres/scfindex.htm.

tially more than three hours. The role of the interviewers in this effort is also critical. Without their dedication and perseverance, the survey would not be possible.

The SCF interviews were conducted largely between the months of May and December in each survey year by NORC, a social science and survey research organization at the University of Chicago. The majority of interviews were obtained in person, although interviewers were allowed to conduct telephone interviews if that was more convenient for the respondent. Each interviewer used a program running on a laptop computer to administer the survey and collect the data.

The use of computer-assisted personal interviewing has the great advantage of enforcing systematic collection of data across all cases. The computer program developed to collect the data for the SCF was tailored to allow the collection of partial information in the form of ranges whenever a respondent either did not know or did not want to reveal an exact dollar figure.

The response rate in the area-probability sample is more than double that in the list sample. In both 2013 and 2016, about 65 percent of households selected for the area-probability sample actually completed interviews. The overall response rate in the list sample was about one-third; in the part of the list sample likely containing the wealthiest families, the response rate was only about one-half that level.

Weighting

To provide a measure of the frequency with which families similar to the sample families could be expected to be found in the population of all families, an analysis weight is computed for each case, accounting both for the systematic properties of the sample design and for differential patterns of nonresponse. The SCF response rates are low by the standards of some other major government surveys, and analysis of the data confirms that the tendency to refuse participation is highly correlated with net worth. However, unlike other surveys, which almost certainly also have differential nonresponse by wealthy households, the SCF has the means to adjust for such nonresponse. A major part of SCF research is devoted to the evaluation of nonresponse and adjustments for nonresponse in the analysis weights of the survey.[58]

Sources of Error

Errors may be introduced into survey results at many stages. Sampling error—the variability expected in estimates based on a sample instead of a census—is a particularly important source of error. Such error can be reduced either by increasing the size of a sample or, as is done in the SCF, by designing the sample to reduce important sources of variability. Sampling error can be estimated, and for this article we use replication methods to do so.

Replication methods draw samples, called replicates, from the set of actual respondents in a way that incorporates the important dimensions of the original sample design. In the SCF, weights were computed for all of the cases in each of the replicates.[59] Every value for which standard errors are reported in this article is a weighted statistic estimated using the

[58] The weights used in this article are adjusted for differential rates of nonresponse across groups. See Arthur B. Kennickell (1999), "Revisions to the SCF Weighting Methodology: Accounting for Race/Ethnicity and Homeownership" (Washington: Board of Governors of the Federal Reserve System, January), https://www.federalreserve.gov/econresdata/scf/scf_workingpapers.htm.

[59] See Arthur B. Kennickell (2000), "Revisions to the Variance Estimation Procedure for the SCF" (Washington:

replicate samples. To estimate the overall standard error, a measure of the variability of these estimates is combined with a measure of the variability because of imputation for missing data.

Other errors include those that interviewers may introduce by failing to follow the survey protocol or misunderstanding a respondent's answers. SCF interviewers are given lengthy, project-specific training and ongoing coaching to minimize such problems. Respondents may introduce error by interpreting a question in a sense different from that intended by the survey. For the SCF, extensive pretesting of questions and thorough review of the data tend to reduce this source of error.

Nonresponse—either complete nonresponse to the survey or nonresponse to selected items within the survey—may be another important source of error. As noted in more detail previously, the SCF uses weighting to adjust for differential nonresponse to the survey. To address missing information on individual questions within the interview, the SCF uses statistical methods to impute missing data; the technique makes multiple estimates of missing data to allow for an estimate of the uncertainty attributable to this type of nonresponse.

Board of Governors of the Federal Reserve System, October), https://www.federalreserve.gov/econresdata/scf/scf_workingpapers.htm.

Errata

The authors revised this article on October 10, 2017, to correct the following:

- On p. 3, in the final bullet point, the share of families that "were considered credit constrained" in 2016 was corrected to 20.8 percent.
- On p. 27, in table 5, the 2016 value for the row label "Did not apply for credit for fear of being turned down (past year)" was corrected to 14.4 percent.
- On p. 27, in table 5, the 2016 value for the row label "Either turned down for credit or feared denial (past year)" was corrected to 20.8 percent.
- On p. 30, in the final sentence of the first full paragraph, the share of families that "responded 'yes' to one or both of these questions" in 2016 was corrected to 20.8 percent.