United States Government Accountability Office

Report to the Ranking Member, Committee on the Budget, U.S. Senate

December 2019

MILLENNIAL GENERATION

Information on the Economic Status of Millennial Households Compared to Previous Generations

Accessible Version

GAO Highlights

Information on the Economic Status of Millennial Households Compared to Previous Generations

Why GAO Did This Study

The idea that individuals should have the opportunity to economically advance beyond the circumstances of their birth is a familiar element of the American Dream. In an economically mobile society, it is possible for individuals to improve their economic circumstances through effort, education, investment, and talent. In addition to opportunities through the private, public, and nonprofit sectors, the federal government also promotes economic mobility through many efforts, including supporting education, job training, business incentives and development, and child health and well-being programs.

However, a recent survey indicates that over approximately the last two decades fewer people report being satisfied with the opportunity to get ahead by working hard. According to recent studies, the Millennial generation, who comprise the largest portion of the American workforce, report feeling overwhelmed by their financial situation and concerned about their future financial security.

GAO was asked to review trends in economic mobility and Millennials' economic situation compared to previous generations. This report examines (1) what is known about intergenerational income mobility, and (2) how the financial circumstances of Millennials compare to previous generations. To perform this work GAO conducted an extensive literature review and analyzed data from the nationally representative Survey of Consumer Finances.

What GAO Found

Recent research indicates that, across three key measures, economic mobility in the United States is limited. Specifically, the Millennial generation (those born between 1982 and 2000) might not have the same opportunity as previous generations had to fare better economically than their parents. According to studies GAO reviewed, the share of people making more money than their parents at the same age (absolute mobility) has declined over the last 40 years, and the chances of moving up the income distribution (relative mobility) have been flat over time. Using a third measure of economic mobility (intergenerational income elasticity), researchers have found that income in adulthood is linked to how much a person's parents made, and that between one-third and two-thirds of economic status is passed down from parents to children. This is especially true of the lowest and highest income groups. Researchers also identified race and geography as key determinants of an individual's economic mobility.

Millennials have different financial circumstances than Generation X (born 1965-1981) and Baby Boomers (born 1946-1964), and in light of flat or declining economic mobility, there is uncertainty about how they will fare financially as they age. A snapshot of data that allowed GAO to compare Millennials aged 25-34 to the previous two generations at similar ages showed that Millennial households were more likely than other generations to be college educated; however, incomes have remained flat across the three generations, implying that Millennials have not yet benefited from the potential additional lifetime income earned by college graduates. Millennial households had significantly lower median and average net worth than Generation X households at similar ages (see figure), especially among those with low net worth. Median net worth for the lowest quartile of Baby Boomers and Generation X was around zero, but it was substantially negative for Millennials, indicating that debt was greater than assets for the median low net worth Millennial household. Regarding assets, a significantly lower percentage of Millennials owned homes compared to previous generations at similar ages, but had retirement resources at rates comparable to Generation X and Baby Boomers. Finally, Millennials were more likely to have student loan debt that exceeded their annual income. It remains to be seen how these factors will affect Millennials' financial circumstances in the long run, including retirement.

Estimated Median Net Worth for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

_____ **United States Government Accountability Office**
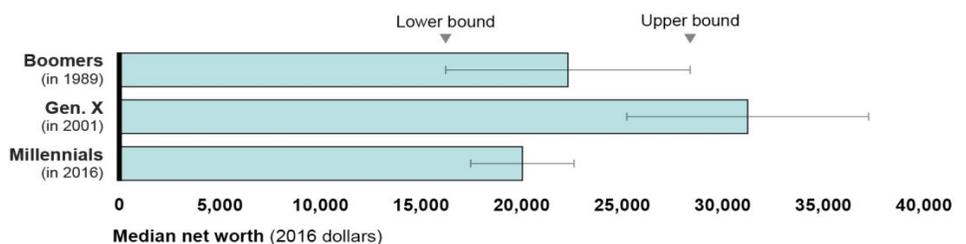
Data table for Estimated Median Net Worth for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars

Median net worth (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	16223.1	22300.79	28378.48
Gen. X (in 2001)	25226.7	31240.19	37253.67
Millennials (in 2016)	17466.9	20038.38	22609.86

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

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Abbreviations

DB	defined benefit
DC	defined contribution
IGE	intergenerational income elasticity
IRA	individual retirement account
IRS	Internal Revenue Service
SCF	Survey of Consumer Finances

December 13, 2019

The Honorable Bernard Sanders
Ranking Member
Committee on the Budget
United States Senate

Dear Senator Sanders:

The idea that individuals should have the opportunity to advance economically beyond the circumstances of their birth is a familiar element of the American Dream.[1] In an economically mobile society, it is possible for individuals to improve their economic circumstances through effort, education, investment, and talent. In addition to opportunities through the private, public, and nonprofit sectors, the federal government also promotes economic mobility through many efforts, including supporting education, job training, homeownership, business incentives and development, and child health and well-being.[2] Intergenerational income mobility, or how members of a generation compare to their parents in terms of income or rank in the income distribution, is often used to capture the degree to which a society is economically mobile.[3] However, recent research indicates a falling share of people are earning more (in inflation adjusted dollars) than their parents earned at similar ages.[4]

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[1]Lawrence R. Samuel, *The American Dream: A Cultural History,* (Syracuse, New York: Syracuse University Press, 2012) pp. 3, 6-7.

[2]Adam Carasso, Gillian Reynolds, and C. Eugene Steuerle, *How Much Does the Federal Government Spend to Promote Economic Mobility and for Whom?* (Washington, D.C.: Pew Charitable Trusts, 2008). For example, recognizing that homeownership has the potential to help families achieve long-term financial stability and revitalize and stabilize communities, the federal government has long sought to make homeownership more affordable for American families. See also GAO, *HUD Homeownership Programs,* GAO-06-677 (Washington, D.C.: June 30, 2006).

[3]Sarah Donovan, *In Focus: Intergenerational Income Mobility,* IF10586 (Washington, D.C.: Congressional Research Service, 2017).

[4]Approximately 90 percent of 30-year-olds born in 1940 earned more in 1970 (in inflation adjusted dollars) than their parents had at the same age. Only about 50 percent of 30-year-olds born in the 1980s out-earn what their parents made at a similar age. Raj Chetty et al., "The Fading American Dream: Trends in Absolute Income Mobility since 1940," *Science,* vol. 356, no. 6336 (2017): pp. 398-406.

In 2018, an estimated 63 percent of Americans were satisfied with "the opportunity for a person to get ahead in this nation by working hard," down from an estimated 76 percent in 2001.[5] Some of this decrease may be attributable to attitudes of those in the Millennial generation (born from 1982 to 2000). According to recent studies, Millennials, who now make up the largest portion of the American workforce, report feeling overwhelmed by their financial situation and concerned about their economic futures.[6]

In light of these issues, you asked us to review trends in economic mobility and Millennials' economic situation, including how Millennials are faring financially compared to previous generations. This report examines (1) what is known about intergenerational income mobility, and (2) how the financial circumstances of Millennials compare to previous generations.

To report on what is known about intergenerational income mobility (which we use interchangeably with "economic mobility") we conducted a literature review of relevant, recent economic studies. To be included, studies had to (1) produce original estimates of economic measures of intergenerational income mobility;[7] (2) focus on the United States (U.S.); (3) be published in the last 5 years (2014-2019), or 2 years if a working paper (2017-2019); and (4) be published in a U.S.-based publication. We identified the majority of the studies through systematic searches of databases. We also identified several studies through other research and expert interviews. We examined 20 studies that met our selection criteria and that we determined in our technical review were reliable for the

[5]Frank Newport, "Majority in US Satisfied with Opportunity to Get Ahead," *Gallup* (Mar. 7, 2018), accessed September 2019, https://news.gallup.com/poll/228914/majority-satisfied-opportunity-ahead.aspx.

[6]More than one in three American labor force participants (35 percent) are Millennials, making them the largest generation in the U.S. labor force. Richard Fry, *Millennials Are the Largest Generation in the US Labor Force* (Pew Research Center, Apr. 11, 2018). See also: Society of Actuaries, *Aging and Retirement: Difficulties in Gaining Financial Security for Millennials* (2018) and Society of Actuaries, *Financial Priorities, Behaviors and Influence on Retirement* (2018).

[7]Studies that only summarized other published research were excluded.

purpose of providing information on economic mobility.[8] The bibliography in appendix I lists all of the studies included in the literature review.

To compare the financial circumstances of Millennials to the previous two generations, Generation X and Baby Boomers, we used the Survey of Consumer Finances (SCF), typically a triennial survey of U.S. households sponsored by the Board of Governors of the Federal Reserve System in cooperation with the Department of Treasury. Every 3 years, SCF staff interview a different group of households with the goal of creating a sample that is representative of households across economic strata, including the top of the wealth distribution. Millennials are defined as people born from 1982 to 2000 (i.e., those who were 18-37 years old in 2019). We defined young households in each generation as those in which either the head, and/or spouse or partner, was 25-34 years old. We compared young Millennial households in 2016 to young Generation X (born 1965-1981) and Baby Boomer (born 1946-1964) households in 2001 and 1989, respectively.[9]

We analyzed SCF data to estimate income, net worth, assets, and debt from the three generations at points in time when each was at a similar young age. We defined household income as the sum of income across all sources, such as wages and salaries, including interest on financial assets or benefits from social safety net programs. We defined household net worth as assets minus debt. Assets include savings accounts, stocks, bonds, and retirement accounts, such as 401(k)s or individual retirement accounts. Assets could also be nonfinancial, including the value of houses or vehicles. Households could have financial resources outside of net worth, including future income from defined benefit (DB) retirement plans or Social Security; however, we did not attempt to estimate the future value of these financial resources in our net worth calculation given the long time horizon to retirement for young Millennials. All financial estimates presented in this report are in 2016 dollars.

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[8]Each study that met our selection criteria was reviewed by at least one GAO analyst and at least two GAO economists. The economists carried out a technical review that examined each study overall, as well as each study's methodology and limitations, in particular.

[9]The data analysis compares three cross-sections and is not longitudinal in nature, nor does it account for differences in macroeconomic conditions at the time the data were collected. A household containing members of more than one generation would be classified based on the survey year and whichever head/spouse was 25-34 years old at the time of survey.

We reviewed documentation about the SCF, tested the data for anomalies, and reviewed related controls. We determined that the SCF data were sufficiently reliable for the purposes of this report. See appendix I for more detailed information about our scope and methodology.

We conducted this performance audit from November 2018 to December 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Measures of Economic Mobility

Intergenerational economic mobility describes how people's incomes in adulthood compare with their parents' incomes in the past or at similar ages.[10] Several measures are used to assess the degree of economic mobility, but fundamentally, a society exhibits more economic mobility when incomes are less related to parents' income. By contrast, where economic mobility is lacking, individuals are more likely to remain at the economic position of their upbringing.

Economists traditionally measure economic mobility in three ways:[11]

- **Absolute economic mobility** - whether people make more money (in inflation-adjusted dollars) than their parents did at a similar age (see fig. 1). For example, in 1970, 92 percent of 30-year-olds made more money in inflation-adjusted terms than their parents did at similar ages, implying an absolute economic mobility rate of 92 percent.[12]

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[10]Donovan, *In Focus: Intergenerational Income Mobility,* p.1.

[11]Sociologists also study mobility, and their measures typically include factors related to occupational status and class. In this report, we focus exclusively on estimates of intergenerational income mobility.

[12]Chetty et al., "The Fading American Dream: Trends in Absolute Economic Mobility since 1940," p. 398.

- **Relative economic mobility** - whether people are at a higher income percentile compared to their parents' income percentile in the past. For example, according to one estimate, there was an 8 percent chance that a person born in the United States from 1980-1982 to parents in the bottom 20 percent of the income distribution would move to the top 20 percent of the income distribution for their birth cohort by the time he or she was approximately 30 years old.[13]

Figure 1: Absolute and Relative Economic Mobility
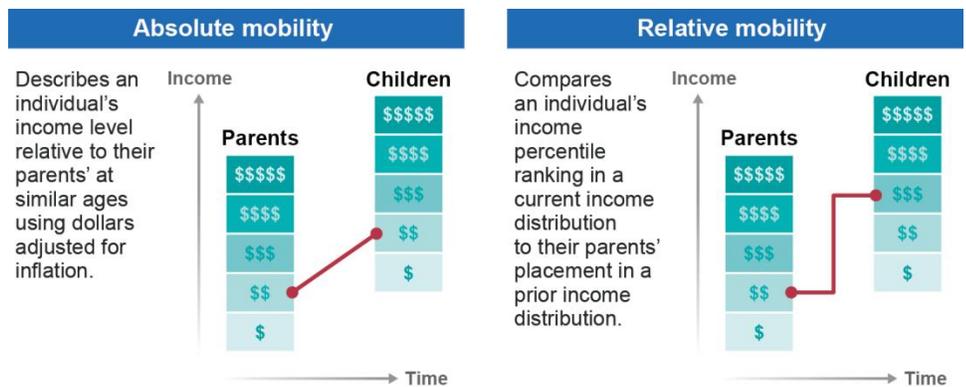
Source: Congressional Research Service. | GAO-20-194

Text of Figure 1: Absolute and Relative Economic Mobility

Absolute mobility: Describes an individual's income level relative to their parents' at similar ages using dollars adjusted for inflation.

Relative mobility: Compares an individual's income percentile ranking in a current income distribution to their parents' placement in a prior income distribution.

Source: Congressional Research Service. | GAO-20-194

Note: The red line in the left-hand panel of this graphic demonstrates how children may earn more money than their parents did, yet occupy the same income quintile—this represents positive absolute economic mobility and flat relative economic mobility. The red line in the right-hand side depicts a scenario in which children earn more money and occupy a higher income rank than their parents did—this represents positive absolute and relative economic mobility.

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[13]Raj Chetty et al., "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *The Quarterly Journal of Economics*, vol. 129, no. 4 (2014): pp. 1553-1623.

- **Intergenerational income elasticity (IGE)**[14] - the strength of the relationship between a person's income and their parents' income.[15] The higher the number, between zero and one, the greater the relationship between parental income and children's adult income (see fig. 2). For example, if IGE is zero, there is complete mobility between generations; parents' income does not influence their children's future income at all. If IGE is 1, there is no mobility between generations, as everyone stays at the same income level in which they were born. IGE measures the "persistence of advantage" from one generation to the next at all points along the economic ladder and therefore captures how much inequality is passed down through generations.

Figure 2: Measuring Economic Mobility with Intergenerational Income Elasticity

Intergenerational income elasticity (IGE) measures how much of a person's income can be attributed to their parents' income. It captures both persistence of economic status across generations and inequality.

A 0.5 IGE would mean that half of economic advantages are passed from parents to children

Complete mobility		No mobility
0	0.5	1
Parents' income has **no influence** on child's income	Child's income is about **50% determined** by parental income	Parents' income **fully determines** child's income
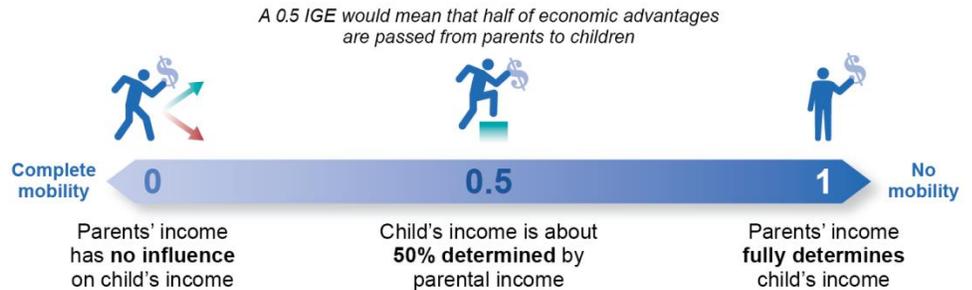
Source: GAO analysis. | GAO-20-194

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[14]An elasticity measures how sensitive one variable is to the change in another variable—in this case, how sensitive children's future income is to a change in their parents' income. IGE is estimated by regressing the natural log of children's income (or mean income over a period of years) on the natural log of parents' income (or mean income over the same age range as children's income is measured), with the resulting coefficient providing the percent change in children's income given a 1 percent change in parents' income. See appendix I.

[15]Although IGE is strictly a measure of the persistence of economic differences across generations, it is commonly interpreted as a measure of economic mobility that indexes the degree of departure from equal opportunity. Because IGE is unit-free, it can be compared across time and countries. IGE reflects the level of inequality in the income distribution and indicates how much of that inequality is passed on—it can be seen as a simple descriptive benchmark indicating the share of economic advantage that is transmitted from parents to children. Pablo Mitnik, Victoria Bryant, and David Grusky, *A Very Uneven Playing Field: Economic Mobility in the United States* (Stanford Center on Poverty and Inequality, 2018).

Text of Figure 2: Measuring Economic Mobility with Intergenerational Income Elasticity

Intergenerational income elasticity (IGE) measures how much of a person's income can be attributed to their parents' income. It captures both persistence of economic status across generations and inequality.

0 IGE	0.5 IGE	1 IGE
Complete mobility	Means that half of economic advantages are passed from parents to children	No mobility
Parents' income has no influence on child's income	Child's income is about 50% determined by parental income	Parents' income fully determines child's income

Source: GAO analysis. | GAO-20-194

A single standard measure of intergenerational economic mobility does not exist, and some researchers use more than one. Each of the three measures provides some insight into the level of opportunity available for people to better their economic circumstances relative to the circumstances of their birth.[16] Many factors may be related to the level of economic opportunity available to an individual, including but not limited to overall macroeconomic conditions (e.g., economic growth), education, race, gender, geography (the region, commuting zone, county, or neighborhood in which a person lives), health care, and neighborhood characteristics.

Characteristics of Millennials

Millennials have a number of unique characteristics that distinguish them from previous generations. According to data from SCF, Millennials are a more diverse group than previous generations—40 percent of Millennial households are headed by someone who belongs to a racial or ethnic minority group. Millennials are also the most educated generation to date in terms of college degree attainment (see fig. 3). An estimated 62 percent of Millennial households had someone with at least an

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[16]Each of these measures also has limitations, especially related to the way data are collected. For instance, small sample sizes in longitudinal data and limited data on very high income earners or non-income earners can affect all three measures. In addition, the way in which the data for most datasets are collected emphasizes intergenerational economic mobility for fathers and sons, and as a result, analysis of women's economic mobility has been limited. However, advances have been made in developing new datasets in the past decade, particularly those based on tax data.

associate's degree in 2016.[17] Not only did Millennial households have more college degrees overall, a greater percentage of Millennial households in 2016 had advanced degrees, including master's, doctorate, and professional degrees, compared to previous generations at similar ages. Meanwhile, only 44 percent of Millennials 25-34 years old were married or living with a partner and had children in 2016, while 54 percent of Baby Boomers were partnered and had children by age 34.[18]

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[17]Our analysis was at the household level because this is how the SCF is structured. Other research at the individual level has found that 46 percent of individual young Millennials had at least an associate's degree in 2017. See U.S. Department of Education, National Center for Education Statistics, *The Condition of Education 2018*, NCES 2018-144 (Washington, D.C.: 2018).

[18]According to research conducted by the Census Bureau using the Current Population Survey, more young adults ages 25-34 are unmarried and living with a partner than in the past. In 2018, 15 percent of young adults ages 25-34 lived with an unmarried partner. About 40 percent lived with a spouse, roughly half as many as 50 years ago. See Benjamin Gurrentz, "For Young Adults, Cohabitation Is Up, Marriage Is Down: Living with an Unmarried Partner Now Common for Young Adults," *America Counts: Stories Behind the Numbers* (Washington, D.C.: U.S. Census Bureau, Nov. 15, 2018).

Figure 3: Characteristics of Millennial Households Compared to Previous Generations at 25-34 Years Old
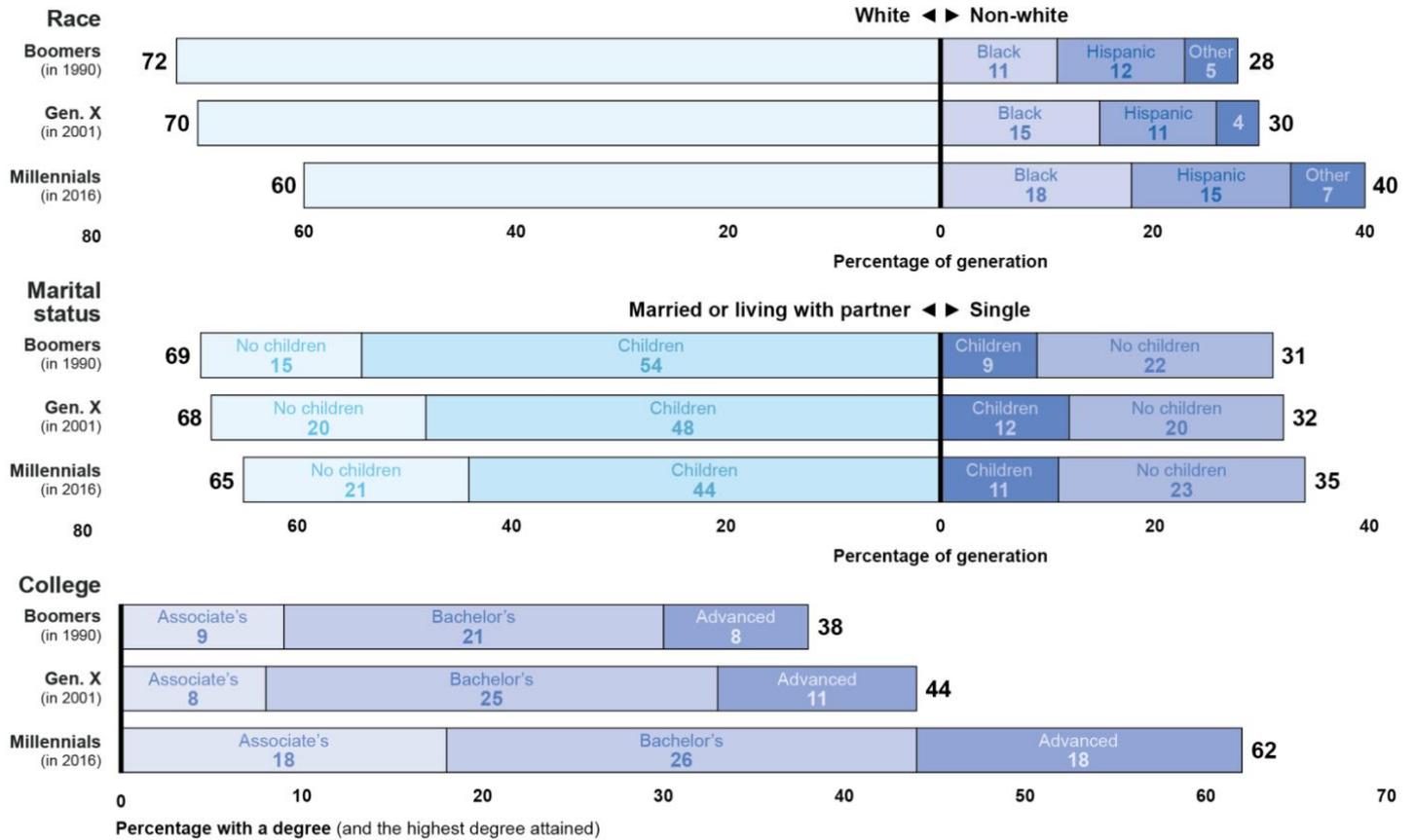
Source: GAO analysis of Survey of Consumer Finances data. | GAO-20-194

Data tables for Figure 3: Characteristics of Millennial Households Compared to Previous Generations at 25-34 Years Old

Percentage of generation

	White	Black	Hispanic	Other
Boomers (in 1989)	72	11	12	5
Gen. X (in 2001)	70	15	11	4
Millennials (in 2016)	60	18	15	7

Percentage of generation

	Married, no children	Married, with children	Single, with children	Single, no children
Boomers (in 1989)	15	54	9	22
Gen. X (in 2001)	20	48	12	20
Millennials (in 2016)	21	44	11	23

Percentage with a degree (and the highest degree attained)

	Associate's degree	Bachelor's degree	Advanced degree	with degree
Boomers (in 1989)	9	21	8	38
Gen. X (in 2001)	8	25	11	44
Millennials (in 2016)	18	26	18	62

Source: GAO analysis of Survey of Consumer Finances data. | GAO-20-194

Note: Because the age ranges for the generations in each year vary, we limit our analysis to only those households that have either a head or spouse/partner between 25-34 years of age in the year the data were collected in order to compare individuals in the same age ranges across years. Baby Boomers comprise those born between 1946 and 1964, Generation X are those born between 1965 and1981, and Millennials are those born between 1982 and 2000. College degree is defined as associate's degree or higher. Advanced degree is defined as master's, doctorate, or professional degree. All estimates are within a +/-1 percentage point margin of error. Due to rounding, percentage breakdowns may not add up precisely to the totals provided.

Economic Mobility is Linked to Parental Income, and Varies by Race and Geography

The 20 studies that we reviewed indicate that economic mobility has remained flat or declined in the United States over the last 40 years; none of the studies we reviewed found that economic mobility has increased (see text box).[19] Additionally, estimates of intergenerational income elasticity (IGE) suggest that economic status persists across generations, particularly for the lowest and highest income groups. Studies identified parental income, race, and geography as key determinants of one's economic mobility. These findings could have future implications for Millennials.

Parental Income is a Key Predictor of Economic Mobility, Especially among the Lowest and Highest Earners

Studies we reviewed indicate a flat or downward trend on two measures of economic mobility in the United States over the last several decades, and limited current mobility based on a third measure.[20]

Measures of Economic Mobility

The three key measures of economic mobility are:

- Absolute mobility: whether people make more money (in inflation-adjusted dollars) than their parents did at similar ages.
- Relative mobility: whether people are at a higher income percentile compared to their parents' income percentile in the past.
- Intergenerational income elasticity: the strength of the relationship between a person's income and their parents' income.

Source: GAO analysis of economic mobility studies. | GAO-20-194

- **Absolute mobility has fallen.** The share of people making more money than their parents at the same age declined between 1970 and 2010 (see fig. 4).[21] One study attributes this decline to an unequal distribution of economic growth, noting it has primarily benefited the highest earners.[22] It remains to be seen if this downward trend will continue for the Millennial generation.

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[19]See appendix I for a description of how we selected the 20 studies reviewed and for a list of the studies. This section describes findings from our review of the studies, not original data analysis conducted by GAO.

[20]Fourteen of the studies we reviewed examined trends in economic mobility in the United States.

[21]Two studies we reviewed examined trends in absolute mobility and found it has declined.

[22]Chetty et al., "The Fading American Dream," p. 405.

Figure 4: Estimated Absolute Mobility, by Birth Year
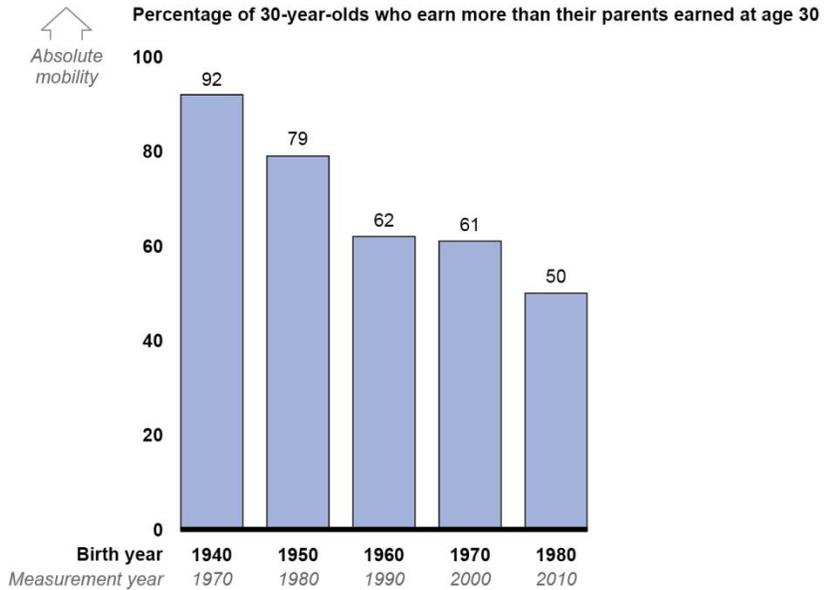
Percentage of 30-year-olds who earn more than their parents earned at age 30

Source: Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R. and Narang, J., 2017. "The fading American dream: Trends in absolute income mobility since 1940." Science, 356(6336), pp.398-406. | GAO-20-194

Data table for Figure 4: Estimated Absolute Mobility, by Birth Year

Birth year	Measurement year	Percentage of 30-year-olds who earn more than their parents earned at age 30
1940	1970	92
1950	1980	79
1960	1990	62
1970	2000	61
1980	2010	50

Source: Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R. and Narang, J., 2017. "The fading American dream: Trends in absolute income mobility since 1940." Science, 356(6336), pp.398-406. | GAO-20-194

Note: The authors used tax data to construct their estimates. Absolute mobility is measured by whether people make more money (in inflation adjusted dollars) than their parents did at similar ages. The authors conducted several sensitivity analyses of the result, including using alternative inflation adjustments, comparing parents and children at different ages, and adjusting for family size and number of earners, and found their conclusions to be robust.

- **Relative mobility has remained flat.** The chances of individuals surpassing their parents' income percentile rank have remained stable

over time.[23] Despite this stability, researchers indicate that rising economic inequality suggests that individuals need to earn more money than before to advance in income ranks, as the gaps between ranks have grown.[24]

- **IGE indicates that economic status persists across generations.** The range of researchers' IGE estimates in the United States indicate that 32-68 percent of an individual's income can be explained by their parents' income.[25]

IGE indicates that parental income is a key determinant of one's income in adulthood, and this is especially true for low- and high-earners. Several researchers found that the persistence of economic status from one generation to the next is greatest for the lowest- and highest-earning families.[26] One study of Internal Revenue Service data found that among adults in the bottom and top 10 percent of the income distribution, 60-65 percent of an individual's income could be explained by parental income.[27]

Education can play a role in increasing an individual's earnings, but the research we reviewed indicates educational attainment itself is affected by parental income. Children from higher income families are more likely to attend college.[28] Additionally, children of families in the bottom income quartile are less likely than children in the upper two income quartiles to graduate from college, and to therefore reap the economic benefits of a

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[23]Five of the studies we reviewed examined trends in relative mobility. Three of these studies found that relative mobility has remained stable and one found it has decreased. The fifth study examined geographic trends.

[24]Four of the studies we reviewed found that rising inequality could limit economic mobility.

[25]Eleven studies we reviewed provided estimates of IGE. IGE is a measure of how much a higher parental income in childhood translates to higher income for the child in adulthood. For example, an IGE of .32 implies that having parents with a 10 percent higher income is associated with the child having 3.2 percent higher income in adulthood. Similarly, an IGE of .6 means that having parents with a 10 percent higher income is associated with the child having a 6 percent higher income in adulthood.

[26]Four studies we reviewed found economic persistence to be greatest for families at the lowest and highest ends of the income distribution.

[27]Pablo Mitnik et al., *New Estimates of Intergenerational Mobility Using Administrative Data*, Statistics of Income Working Paper (Washington, D.C.: Internal Revenue Service, 2015).

[28]Five studies we reviewed cited parental income as a predictor of educational attainment.

college degree.[29] Even among Millennials—the most educated generation—54 percent of individuals do not have a college degree, and this is particularly true of racial minorities.[30] While high returns from education should benefit Millennials with a college degree, those from low-income families and those without a college degree may find it difficult to achieve upward economic mobility.

Race Is a Key Predictor of Economic Mobility, and Blacks in Particular are Less Likely to be Upwardly Mobile than Whites

The research we reviewed indicates that economic mobility varies by race.[31] The findings on economic mobility and race suggest that not all groups of Millennials may experience the same levels of economic opportunity.

- **Blacks experience less upward intergenerational mobility than whites.**[32] In particular, black men are less likely to be upwardly mobile

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[29]In 2017, estimated bachelor's degree attainment rates by age 24 based on Current Population Survey household data were 4.8 times greater for dependent family members from the highest family income quartile than for those from the lowest family income quartile (62 versus 13 percent). M. Cahalan et al., *2019 Indicators of Higher Education Equity in the United States: Historical Trend Report* (The Pell Institute for the Study of Opportunity in Higher Education, Council for Opportunity in Education (COE), and Alliance for Higher Education and Democracy of the University of Pennsylvania (PennAHEAD), 2019). Regarding the positive economic benefits of a college degree, see Federal Reserve Bank of St. Louis, *Is College Still Worth it?* (St. Louis, MO: 2018), accessed October 25, 2019, https://fredblog.stlouisfed.org/2018/07/is-college-still-worth-it/. Also see Federal Reserve Bank of New York, *Despite Rising Costs, College Is Still a Good Investment* (New York: 2019), accessed October 28, 2019, https://libertystreeteconomics.newyorkfed.org/2019/06/despite-rising-costs-college-is-still-a-good-investment.html?mod=article_inline.

[30]As previously noted, a majority of young Millennial households have at least one person with a college degree, associate's or above, but among individuals, the college attainment rate is lower. Regarding racial minorities, see Cahalan et al., *2019 Indicators of Higher Education Equity in the United States: Historical Trend Report*.

[31]Nine studies we reviewed examined the connection between economic mobility and race. Six of these studies found that race is a key predictor of economic mobility. The other studies identified other key factors, for example geography and racial segregation, that intersect with race, as discussed in the following section.

[32]Four studies in our review found that blacks had lower economic mobility than whites. No studies found that blacks had higher mobility than whites. The two additional studies in this subset examine differences between whites and non-whites, rather than between whites and blacks, and found higher mobility for whites.

and more likely to be downwardly mobile than white men, even with similar levels of education. Meanwhile, children of low-income white families have had higher rates of upward mobility over time than black children with similar socioeconomic characteristics.[33]

- **Some minority groups have higher economic mobility than others.** One study that examined additional racial groups found high earnings among children of low-income Asian households, and found that Asians are likely to remain at income levels comparable to or above-white Americans, though these findings are largely driven by first-generation immigrants. Additionally, Hispanic Americans are moving up the income distribution across generations, although their overall economic mobility is somewhat lower than whites. Meanwhile, American Indians are more likely than whites to be downwardly mobile, even those in the wealthiest 1 percent.[34]

Childhood Location Affects Economic Mobility in Adulthood, but Outcomes Differ by Subgroups

The research we reviewed indicates that the region, state, commuting zone, county, and most especially, the neighborhood in which one grows up affects economic mobility and future earnings, but these effects vary by demographic and income groups.[35]

- **Economic mobility varies by location.** One study found that areas within the United States offer disparate opportunities, with some localities supporting higher rates of economic mobility than others

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[33]W. J. Collins and M. H. Wanamaker, *Up From Slavery? African American Intergenerational Economic Mobility Since 1880*, Working Paper 23395 (National Bureau of Economic Research, 2017).

[34]Raj Chetty et al., *Race and Economic Opportunity in the United States: An Intergenerational Perspective,* Working Paper 24441(National Bureau of Economic Research, 2018).

[35]Seven of the studies we reviewed examined the links between location and economic mobility, and all found that location was related to levels of mobility.

(see fig. 5).[36] In particular, counties in the southeastern United States were found to have lower levels of economic mobility than counties in the rural Midwest. Another study found that a child's neighborhood has a statistically significant effect on life chances, and that growing up in a low-income, metropolitan neighborhood has a strong negative effect on future earnings. Conversely, growing up in an affluent neighborhood can have almost as large an impact on future earnings as completing a bachelor's degree.[37]

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[36]Chetty et al., "Where is the Land of Opportunity?" This study developed a population-based sample consisting of all individuals born between 1980 and 1991 who were U.S. citizens as of 2013 and were claimed as a dependent on a tax return filed between 1996 and 2012. They were able to link approximately 95 percent of children in each birth cohort to parents based on dependent claiming, obtaining a sample of more than 40 million children and their parents. The population tax records cannot be used to link children to parents for birth cohorts prior to 1980 because they are only available starting in 1999. In order to access these government data containing personally identifiable information, members of the research team had to submit to fingerprinting and a complete background check, undergo training in the proper protection of administrative data, and be subject to the same rules and penalties that apply to any Internal Revenue Service employee.

[37]J. T. Rothwell and D. S. Massey, "Geographic Effects on Intergenerational Income Mobility," *Economic Geography*, vol. 91, no.1 (2014): pp. 83-106.

Figure 5: Map of Relative Economic Mobility by Commuting Zone
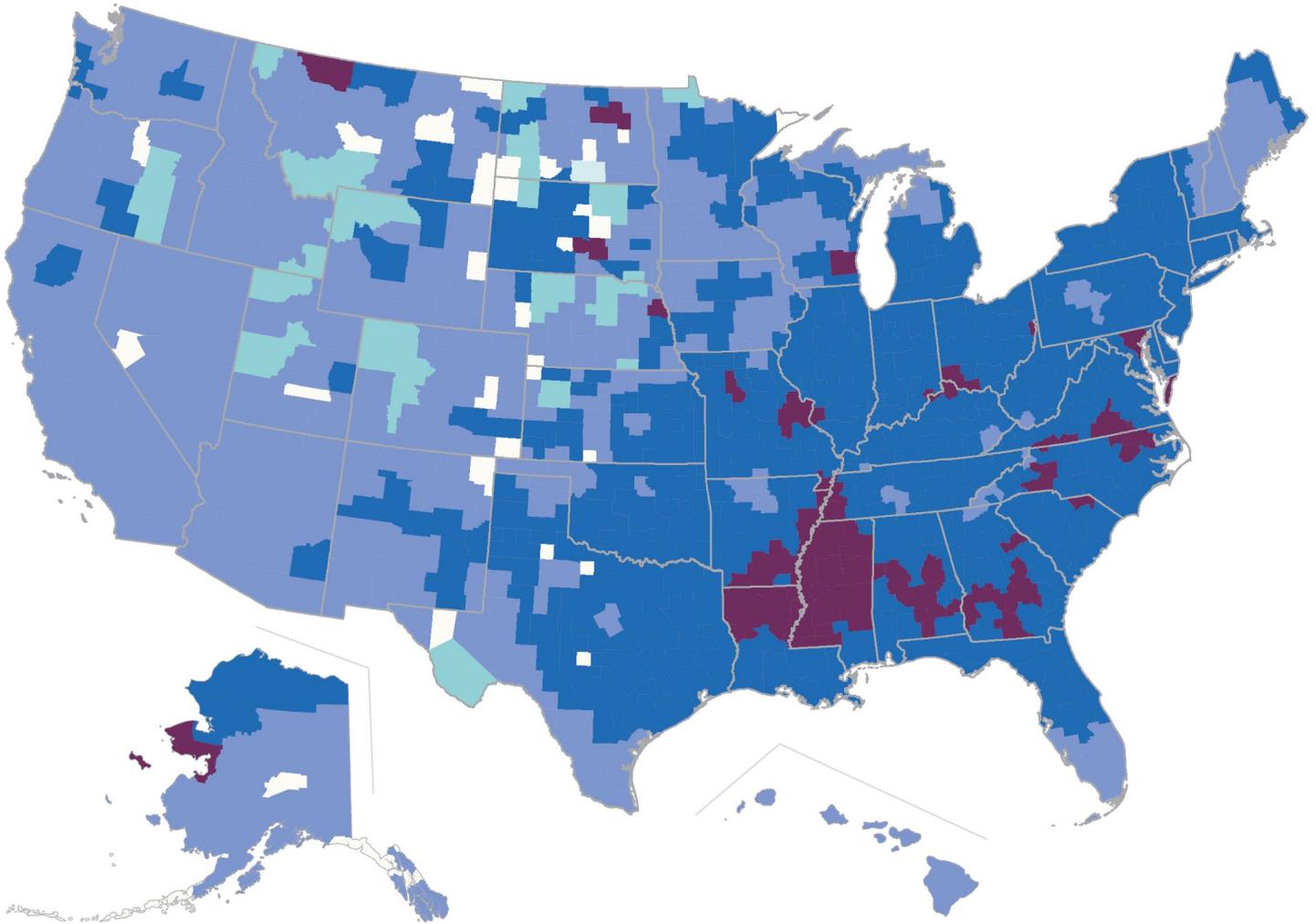
Relative economic mobility: Measures the association between parents' rank in the earnings distribution and their children's rank in the earnings distribution as adults. A lower number (and lighter color) indicates more mobility; a higher number (and darker color) indicates less mobility.

0.0	0.1	0.2	0.3	0.4	0.5

No data   **More**   **Less**

Source: GAO analysis of data from Opportunity Insights, Online Data Table 5: Intergenerational Mobility Statistics by Commuting Zone for the paper "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." Map generated using MapInfo. | GAO-20-194

Note: Commuting zones are geographical aggregations of counties that are similar to metro areas but cover the entire United States, including rural areas. Commuting zones with less than 250 observations were not analyzed and are marked 'no data' in the map.

- **Specific neighborhood characteristics drive differing rates of economic mobility.** Several researchers linked economic mobility to

certain area and neighborhood characteristics, including rates of poverty, racial segregation, economic inequality, the proportion of single-parent households, and school quality.[38] Researchers identified racial segregation as a neighborhood characteristic broadly associated with lower mobility. One study found that economic segregation is also negatively associated with economic mobility.[39] One study identified three neighborhood characteristics that are correlated with a weaker relationship between race and mobility: low poverty rates, a high percentage of low-income black fathers present, and low levels of racial bias among whites.[40] According to this study, neighborhoods with these characteristics had higher mobility for black boys and a relatively small black-white mobility gap.

- **The effects of geography on future earnings vary by race, socioeconomic status, and gender.** The effects of race and neighborhood characteristics on economic mobility are related and hard to disentangle. For example, one study found that black boys have lower incomes in adulthood than white boys who grow up in the same neighborhood in 99 percent of Census tracts, even when accounting for income.[41] This highlights the effect of race on economic mobility when children face the same neighborhood conditions. Conversely, the same study also found that 4.2 percent of black children grow up in neighborhoods with the characteristics associated with higher levels of mobility, compared to 62.5 percent of white children. This is in line with another study that found that neighborhoods can amplify racial inequality across generations.[42] Another study notes that Hispanic and black children tend to live in neighborhoods with low mobility for those of their racial group,

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[38]Five of the studies we reviewed examined the relationship between neighborhood characteristics and economic mobility.

[39]Chetty et al., "Where is the Land of Opportunity?" p. 1610.

[40]The study focuses on two measures of racial bias: implicit association tests and the Racial Animus Index. Chetty et al., *Race and Economic Opportunity in the United States*, pp. 35-36.

[41]Chetty et al., *Race and Economic Opportunity in the United States*, p. 7.

[42]Raj Chetty and Nathaniel Hendren, "The Impacts of Neighborhoods on Intergenerational Mobility II: County-Level Estimates," *The Quarterly Journal of Economics*, vol. 133, no. 3 (2018): pp. 1163-1228.

whereas white children tend to live in neighborhoods with higher mobility rates for whites.[43]

Neighborhood effects can also vary by socioeconomic status and gender. Regarding socioeconomic status, one study found that place may matter less for children from higher-income families, as they may be better able to insulate themselves from the effects of local conditions (e.g., by switching to private schools if public schools are weak.)[44] Regarding gender, the same study finds that neighborhood matters more for boys than girls.

Across studies, common themes emerged that suggest Millennials might not have the same level of economic mobility enjoyed by their parents' generation. While the studies in our review varied in their estimates of key measures of economic mobility and its determinants, the studies were consistent in their findings that absolute economic mobility is declining, relative mobility is flat or declining, and economic status is somewhat rigid from one generation to the next. Moreover, the studies that examined drivers of mobility found that a child's race and neighborhood have a significant effect on their economic mobility as adults. This is particularly relevant for Millennials because of their racial and ethnic diversity. It is not clear whether Millennials' diversity and higher levels of education will lead to a reversal of these trends, or whether these trends will continue into the future.

Millennials Have Similar Average Incomes and Lower Average Net Worth Compared to Previous Generations Despite Being More Educated

If economic mobility is flat or falling, knowing how a cohort is doing at the beginning of its members' working lives sheds light on the potential challenges that lie ahead as the cohort ages and moves toward retirement. We analyzed data from the Survey of Consumer Finances

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[43]R. Chetty et al., *The Opportunity Atlas: Mapping the Childhood Roots of Social Mobility*, Working Paper (National Bureau of Economic Research and U.S. Census Bureau Center for Economic Studies, 2018).

[44]Chetty and Hendren, "The Impacts of Neighborhoods on Intergenerational Mobility II", p. 1191.

(SCF) to provide a snapshot of how Millennials are faring economically as young adults. We compared the financial circumstances of Millennial households in 2016 to Generation X households in 2001 and Baby Boomer households in 1989; in each year, we estimated measures of financial well-being for households in which the head of household, or any spouse or partner, was 25-34 years old.[45] We found that incomes across the three generations have remained relatively flat, which is consistent with our review of economic mobility studies. We also found that Millennials have lower net worth, which we define as assets minus debt. With respect to assets, we found that Millennials are saving for retirement, but the accumulation of wealth through homeownership has decreased as fewer Millennials are buying homes. In terms of debt, Millennials hold large amounts of student debt compared to previous generations, but are also more likely to be college educated.

Millennial Households Had Similar Average Incomes as Previous Generations Despite Higher Educational Attainment Rates

Millennial households in 2016 had similar average real incomes compared to previous generations at similar ages, according to our analysis of SCF data (see fig. 6).[46] Our analysis showed that median

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[45]We chose these years of the SCF to analyze the three generations in snapshots in time for which they were likely to be early in their working life. These data are appropriate for estimating measures of income and wealth across generations, as well as asset and debt holdings of interest, including homeownership and student debt. Baby Boomers (born between 1946 and 1964) were 25-43 years old in 1989. Generation X (born between 1965 and 1981) were 20-36 years old in 2001. Millennials (born between 1982 and 2000) were 16-34 years old in 2016. Note that these years represent different points in the economic cycle. For example, there was a recession that lasted 8 months in 2001. While we did not adjust our results for family size or composition, we found that 65 percent of Millennials in our sample are coupled (either married or living together), compared to 68 percent of Gen X and 69 percent of Baby Boomers, i.e., there are relatively small differences in the rate at which Millennials live with a partner compared to previous generations.

[46]Averages represent mean estimates across all households in the given age range. All estimates are in inflation-adjusted 2016 dollars. The point estimate for Millennials was lower than Generation X, but the difference was not statistically significant. Income includes family's cash income, before taxes, for the full calendar year preceding the survey. The components of income are wages, self-employment and business income, taxable and tax-exempt interest, dividends, realized capital gains, benefits from support programs provided by the government, pensions and withdrawals from retirement accounts, Social Security benefits, alimony and other support payments, and miscellaneous sources of income for all members of the primary economic unit in the household.

incomes were also similar across young adult households in the Millennial and Baby Boomer generations and that Millennial households had slightly lower median incomes than Generation X households (see fig. 7).[47] We also examined average and median incomes among households with college degrees and found similar results.[48] These findings suggest that, on average, real income levels have been stagnant for young adult households across these three generations.[49]

Figure 6: Estimated Average Income for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars
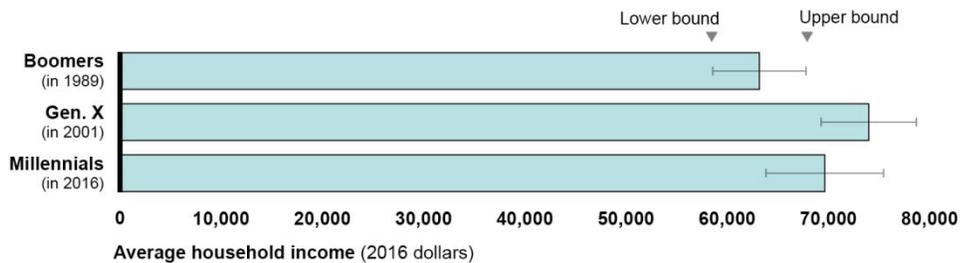
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

[47]Medians represent the middle of the distribution across all households in the given age range. Other studies have found that income and earnings of Millennials are lower than previous generations. Using American Community Survey data, the U.S. Census Bureau found that young adult Millennial households in 2009-2013 earned $2,000 less than young households in 1980. See Census Bureau, *Young Adults, Then and Now* (Washington, D.C.: 2015), accessed October 9, 2019, https://www.census.gov/content/dam/Census/newsroom/c-span/2015/20150130_cspan_youngadults.pdf. Moreover, Kurz et al. (2018) used data from the Panel Study of Income Dynamics and found that individual Millennials tend to have lower income than members of earlier generations at comparable ages, although the income of young Millennial households was not as different, likely due to the rising labor force participation of women. See Christopher Kurz, Geng Li, and Daniel J. Vine, "Are Millennials Different?" *Board of Governors of the Federal Reserve System Finance and Economics Discussion Series 2018-080* (Washington, D.C.: 2018).

[48]We examined any college degree, associate's or above, as well as examining associate's, bachelor's, and advanced degrees separately.

[49]There are several possible reasons why Millennials are not earning more money than previous generations on average, despite having higher college completion rates. For instance, many Millennials were just beginning their careers around the time of the Great Recession, which may continue to affect their employment and earnings trajectories. See Paul Taylor, Rick Fry, and Russ Oates, *The Rising Cost of Not Going to College*, (Pew Research Center, 2014).

Data table for Figure 6: Estimated Average Income for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars

Average household income (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	58569.6	63178.21	67786.82
Gen. X (in 2001)	69271.3	73977.49	78683.67
Millennials (in 2016)	63822.4	69635.4	75448.39

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: The estimated differences between average incomes of Millennial households and households in previous generations were not statistically significant. The 95 percent confidence interval for the estimated average income of Millennial households was from about $64,000 to $75,000. For Generation X, the 95 percent confidence interval for this estimate was from $69,000 to $79,000, and for Baby Boomers, the 95 percent confidence interval for this estimate was from $58,000 to $68,000.

Figure 7: Estimated Median Income for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars
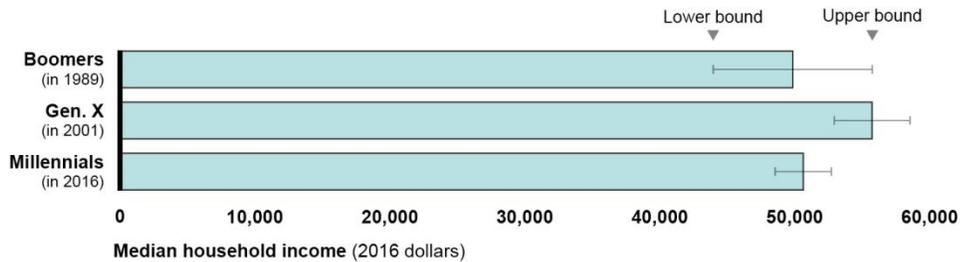
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data table for Figure 7: Estimated Median Income for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars

Median household income (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	43957.9	49854.29	55750.69
Gen. X (in 2001)	52928.5	55736.89	58545.29
Millennials (in 2016)	48546.4	50631.86	52717.33

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: The estimated difference between median incomes of Millennial households and Baby Boomer households was not statistically significant. The estimated median income for Generation X households was slightly higher than for Millennial households. The 95 percent confidence interval for the estimated median income of Millennial households was about $49,000 to $53,000. For Generation X, the 95 percent confidence interval for this estimate was from $53,000 to $59,000, and for Baby Boomers, the 95 percent confidence interval for this estimate was $44,000 to $56,000.

As described in figure 3, Millennial households are more likely to be college-educated compared to previous generations. While college graduates generally have higher incomes than non-college graduates, the income of degree holders has remained flat over time. A recent study from the Federal Reserve Board of St. Louis found that the college income premium, the increase in earnings for college graduates compared to non-college graduates, does exist.[50] According to this study, in the first quarter of 2018, college graduates received weekly wages that were 80 percent higher than high school graduates. However, college graduates in recent years have not made higher incomes than college graduates in the past, as they have had relatively flat inflation-adjusted wages since 2001.

Millennials Had Lower Levels of Net Worth Than Previous Generations, With Lower Homeownership Rates and Higher Student Debt

Overall, Millennial households in 2016 had significantly lower average and median net worth, defined as assets minus debt, than Generation X households at similar ages in 2001, according to our analysis of SCF data (see figs. 8 and 9).[51] This may be explained by lower homeownership rates than previous generations, as well as larger amounts of student debt.

[50]See Federal Reserve Bank of St. Louis, *Is College Still Worth It?* (St. Louis, MO: 2018), accessed October 25, 2019, https://fredblog.stlouisfed.org/2018/07/is-college-still-worth-it/. Also see Federal Reserve Bank of New York, *Despite Rising Costs, College Is Still a Good Investment* (New York: 2019), accessed October 28, 2019, https://libertystreeteconomics.newyorkfed.org/2019/06/despite-rising-costs-college-is-still-a-good-investment.html?mod=article_inline. These studies compared incomes of those with a bachelor's degree or higher to those with no college degree.

[51]Specifically, assets include financial (e.g., savings accounts, stocks, bonds, retirement accounts) or nonfinancial (e.g., the value of any houses or vehicles) assets. Retirement accounts include defined contribution (DC) plans, such as a 401(k), as well as individual retirement accounts (IRAs). These assets do not include the actuarial present value of benefits from defined benefit (DB) plans or Social Security. Debt includes mortgages, home equity loans, credit card balances, education loans, vehicle loans, and other debt.

Figure 8: Estimated Average Net Worth for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars
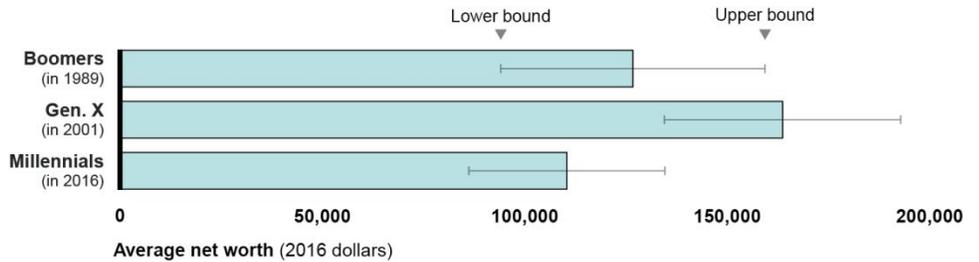
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: The difference between Millennial and Generation X average net worth is statistically significant. The 95 percent confidence interval for the estimated average net worth of Millennial households was from about $86,000 to $134,000. For Generation X, the 95 percent confidence interval was from $135,000 to $192,000. For Baby Boomer households, the 95 percent confidence interval was from $92,000 to $161,000.

Data table for Figure 8: Estimated Average Net Worth for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars

Average net worth (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	94065.8	126699.9	159334.1
Gen. X (in 2001)	134476	163658.8	192841.7
Millennials (in 2016)	86184.2	110381.2	134578.1

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Figure 9: Estimated Median Net Worth for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars
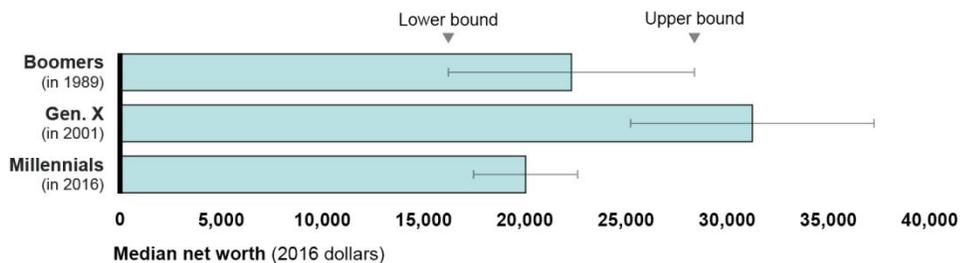
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data table for Figure 9: Estimated Median Net Worth for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars

<u>Median net worth (2016 dollars)</u>

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	16223.1	22300.79	28378.48
Gen. X (in 2001)	25226.7	31240.19	37253.67
Millennials (in 2016)	17466.9	20038.38	22609.86

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: The difference between Millennial and Generation X median net worth is statistically significant. The 95 percent confidence interval for the estimated median net worth of Millennial households was from about $17,000 to $23,000. For Generation X, the 95 percent confidence interval was from $25,000 to $37,000. For Baby Boomer households, the 95 percent confidence interval was from $16,000 to $28,000.

Median net worth was much lower for Millennial households in the bottom 50 percent of the net worth distribution compared to previous generations. While median net worth for the lowest net worth quartile of Baby Boomers and Generation X was around zero, it was substantially negative for Millennials in the lowest quartile, indicating that debt was greater than assets (see fig. 10). The median net worth of those Millennial households in the highest 25 percent was also significantly lower than the median net worth of those at the top in previous generations.

Figure 10: Estimated Median Net Worth by Net Worth Quartile for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars
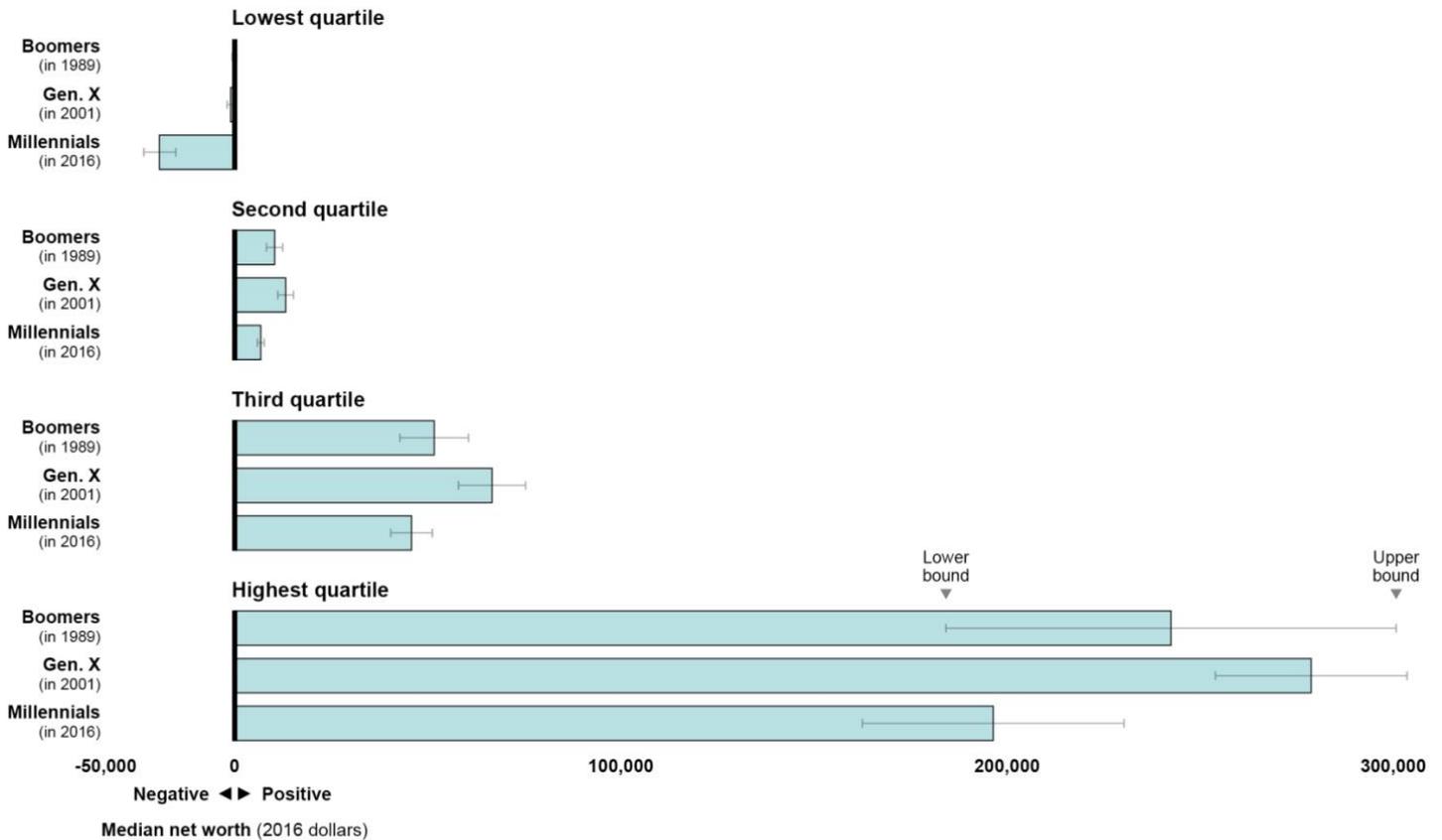
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data table for Figure 10: Estimated Median Net Worth by Net Worth Quartile for Baby Boomer, Generation X, and Millennial Households in the 25-34 Age Range, in 2016 Dollars

Lowest quartile median net worth (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	-532.11	-681.38	-1064.23
Gen. X (in 2001)	-106.15	-1011.26	-1915.29
Millennials (in 2016)	-15236.9	-19469.96	-23703.02

Second quartile median net worth (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	8244.05	10340.97	12437.89
Gen. X (in 2001)	11157	13198.96	15240.91
Millennials (in 2016)	5880.15	6772	7664.25

Third quartile median net worth (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	42787.6	51665.63	60543.66
Gen. X (in 2001)	57945	66639.7	75333.94
Millennials (in 2016)	40433.5	45808.23	51182.96

Highest quartile median net worth (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	184189	242471.6	300754.7
Gen. X (in 2001)	253939	278754.9	303570.8
Millennials (in 2016)	162555	196421.7	230288.4

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: Net worth is defined as assets minus debt. Assets include financial (e.g., savings accounts, stocks, bonds, retirement accounts) or nonfinancial (e.g., the value of any houses or vehicles) assets. Retirement accounts include defined contribution (DC) plans, such as a 401(k), or individual retirement accounts (IRAs). Debt includes mortgages, home equity loans, credit card balances, education loans, vehicle loans, and other debt. Households included in this analysis have a head of household or spouse or partner who is between 25 and 34 years old. Each quartile includes 25 percent of the population in the age range. Lines overlapping the bars represent 95 percent confidence intervals. For the lowest net worth quartile, estimates of median net worth for Baby Boomers households in 1989 were not statistically different from zero.

We analyzed both average and median net worth to examine how net worth was concentrated among young households. Our analysis showed that estimates of median net worth were much lower than estimates of average net worth across all three generations, suggesting that net worth was unevenly distributed among these households and that a relatively small number of households held a substantial percentage of total net worth.

As a part of our analysis of net worth, we examined specific types of assets and debt, including homeownership, retirement resources, and student loans, and found the following:

- **Millennials had lower rates of homeownership compared to previous generations.** Our analysis of SCF data showed that a significantly lower percentage of Millennial households in 2016 were homeowners compared to previous generations in 2001 and 1989 (see fig. 11). We estimated that about 43 percent of Millennial households owned homes, compared to 51 percent of Generation X households and 49 percent of Baby Boomers.

Figure 11: Estimated Percentage of Homeowners in the 25-34 Age Range, by Generation
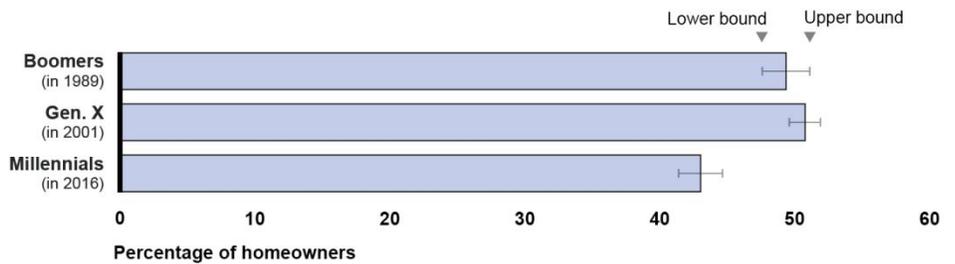
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data table for Figure 11: Estimated Percentage of Homeowners in the 25-34 Age Range, by Generation

Percentage of homeowners

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	47.59	49.36	51.12
Gen. X (in 2001)	49.60	50.75	51.90
Millennials (in 2016)	41.40	43.03	44.65

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: Households included in this analysis have a head of household or spouse or partner who is between 25 and 34 years old. Lines overlapping the bar represent 95 percent confidence intervals.

As a result of lower rates of homeownership, Millennial households had less mortgage debt, but also less home equity, compared to households in other generations at similar ages. Home equity has historically been an important source of retirement security as people age. It is unclear whether Millennial households will reach similar rates of homeownership as previous generations, but it is possible they may be more likely to buy homes at older ages compared to previous generations.

- **Millennials were as likely to have retirement resources as previous generations.** A similar percentage of Millennials had retirement resources in 2016 (either defined benefit pensions or retirement accounts, such as an IRA, 401(k), or other account-type pension), compared to Baby Boomers in 1989 and Generation X in 2001 (see fig. 12).[52]

Figure 12: Estimated Percentage of Households in the 25-34 Age Range with Any Retirement Resources, by Generation
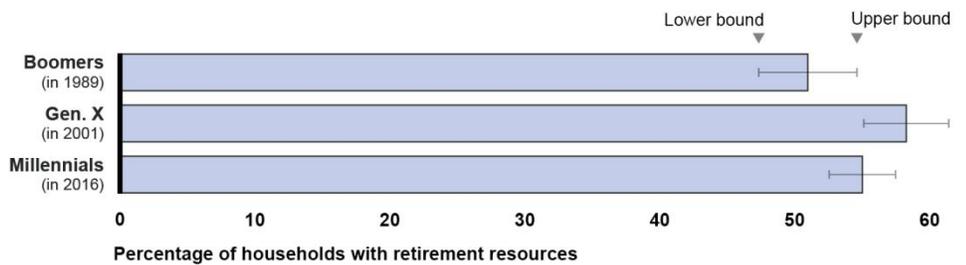
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data table for Figure 12: Estimated Percentage of Households in the 25-34 Age Range with Any Retirement Resources, by Generation

Percentage of households with retirement resources

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	47.33	50.97	54.61
Gen. X (in 2001)	55.12	58.27	61.42
Millennials (in 2016)	52.55	55.01	57.47

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: Retirement resources include defined benefit pensions and/or retirement accounts, including individual retirement accounts, 401(k)s, or other account-type pensions. Households included in this analysis have a head of household or spouse or partner who is between 25 and 34 years old. Lines overlapping the bar represent 95 percent confidence intervals.

Millennials have a similar average value of retirement accounts as Generation X (see fig. 13). This may be due, in part, to auto-enrollment policies, which create default retirement savings accounts

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[52]While we did not attempt to assess the value of defined benefit (DB) pensions, the SCF does contain data on whether or not a household has any DB pensions among its retirement assets.

for workers, and are relatively new.[53] Millennials have a higher average value of defined contribution retirement accounts compared to Baby Boomers, likely because of the shift over time in the retirement system from defined benefit pensions to account-type pensions, such as 401(k)s.[54]

Figure 13: Estimated Average Value of Retirement Accounts for Households in the 25-34 Age Range, by Generation, in 2016 Dollars
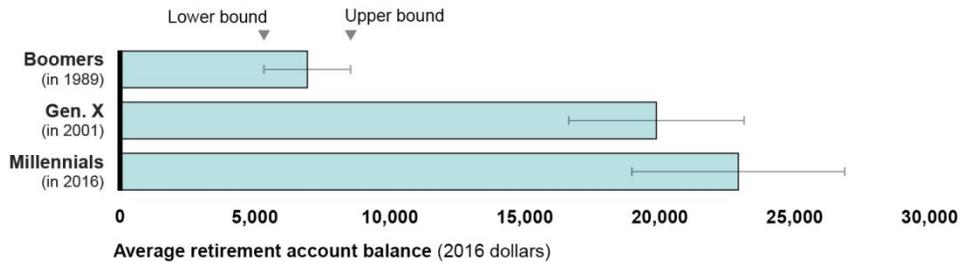
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data table for Figure 13: Estimated Average Value of Retirement Accounts for Households in the 25-34 Age Range, by Generation, in 2016 Dollars

Average retirement account balance (2016 dollars)

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	5334.88	1605.21	1605.21
Gen. X (in 2001)	16623.3	3251.37	3251.38
Millennials (in 2016)	18964	3944.13	3944.14

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

[53]GAO has found in prior work that auto-enrollment policies can considerably increase participation rates. See GAO, *The Nation's Retirement System: A Comprehensive Re-evaluation Is Needed to Better Promote Future Retirement Security*, GAO-18-111SP (Washington, D.C.: Oct. 18, 2017).

[54]GAO reported previously that there has been a marked shift away from employers offering traditional defined benefit (DB) pension plans to defined contribution (DC) plans, such as 401(k)s, as the primary type of retirement plan. This shift to DC plans has increased the risks and responsibilities for individuals in planning and managing their retirement. In addition, that report found that economic and societal trends—such as increases in debt and health care costs—can impede individuals' ability to save for retirement. GAO-18-111SP.

Note: Retirement accounts include individual retirement accounts, 401(k)s, or other account-type pensions. Households included in this analysis have a head of household or spouse or partner who is between 25 and 34 years old. Lines overlapping the bar represent 95 percent confidence intervals.

- **Student loans were the key source of debt that distinguished Millennials from previous generations.** We found that Millennial households were significantly more likely to have student loans than previous generations at similar ages (see fig. 14).

Figure 14: Estimated Percentage of Households in the 25-34 Age Range with Student Loans, by Generation
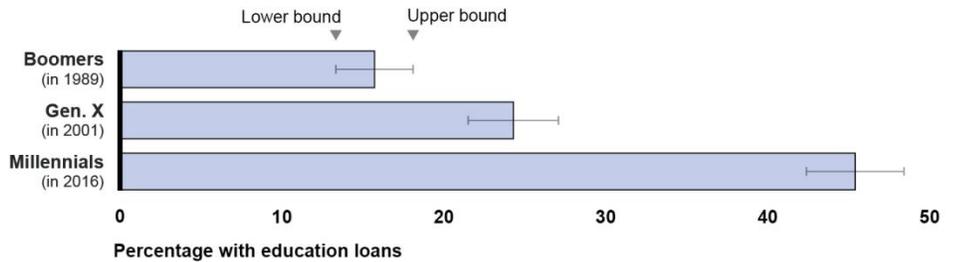
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data Table for Figure 14: Estimated Percentage of Households in the 25-34 Age Range with Student Loans, by Generation

Percentage with education loans

	Lower bound	Estimate	Upper bound
Boomers (in 1989)	13.33	15.72	18.10
Gen. X (in 2001)	21.50	24.29	27.07
Millennials (in 2016)	42.39	45.40	48.42

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: Households included in this analysis have a head of household or spouse or partner who is between 25 and 34 years old. Lines overlapping the bars represent 95 percent confidence intervals.

We measured the potential burden of student loan debt by estimating student loan-to-income ratios and found that this measure was significantly higher for Millennial households in 2016 compared to previous generations when they were young. On average, Millennial households in 2016 had a student loan-to-income ratio that exceeded 100 percent compared to ratios of under 50 percent in previous generations (see fig. 15).

Figure 15: Estimated Ratio of Student Loan Amount to Yearly Income, Conditional on Having a Student Loan, by Generation
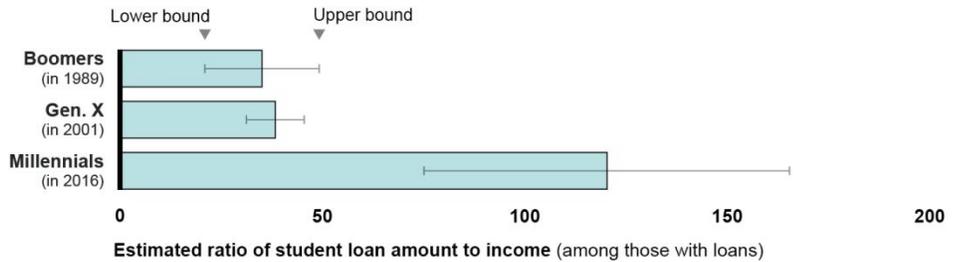
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Data table for Figure 15: Estimated Ratio of Student Loan Amount to Yearly Income, Conditional on Having a Student Loan, by Generation

Estimated ratio of student loan amount to income (among those with loans)

|	Lower bound	Estimate	Upper bound
Boomers (in 1989)	20.98	35.09	49.20
Gen. X (in 2001)	31.22	38.36	45.50
Millennials (in 2016)	75.11	120.32	165.53

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: The student loan-to-income ratio represents total household education loans divided by total household income for the year. Education loans include both federal and private loans, but exclude credit card debt. Households included in this analysis have a head of household or spouse or partner who is between 25 and 34 years old. Lines overlapping the bar represent 95 percent confidence intervals.

While the student loan-to-income ratio has increased over time for households of all incomes, it has most greatly affected lower-income households. For example, while we estimated that the average student loan-to-income ratio was about 100 percent for young households in the bottom income quartile in 2001, we estimated it was significantly higher for young households in the bottom income quartile in 2016 (see fig. 16). These findings suggest that, on average, it could take Millennials several

more years' worth of total income to pay back total household student loan debt (without interest).[55]

Figure 16: Estimated Average Student Loan-to-Income Ratios for Generation X and Millennial Households in the 25-34 Age Range, Conditional on Having a Student Loan, by Income Quartile
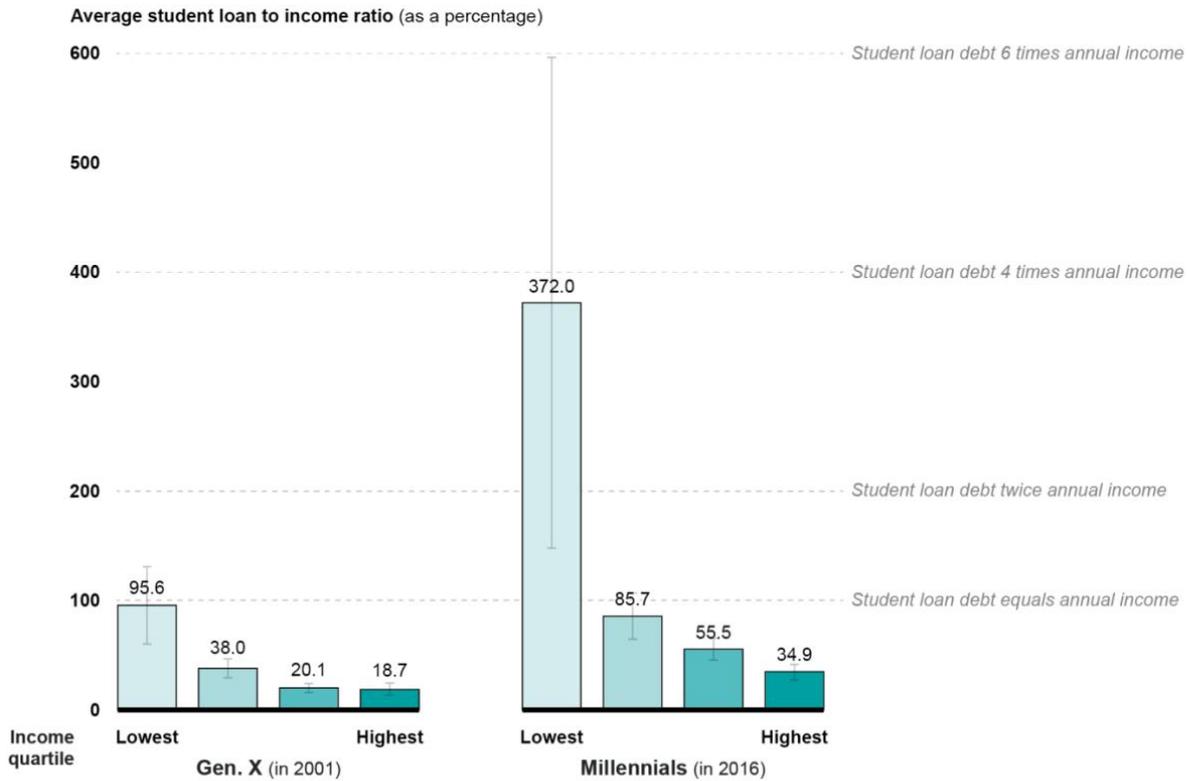
Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

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[55]Federal student loan repayment programs exist that may assist Millennial households in repaying their student loan debt. See the textbox for more information about these programs.

Data table for Figure 16: Estimated Average Student Loan-to-Income Ratios for Generation X and Millennial Households in the 25-34 Age Range, Conditional on Having a Student Loan, by Income Quartile

Gen. X (in 2001)

	Lower bound	Estimate	Upper bound
Lowest income quartile	60.20	95.60	130.90
Second income quartile	29.40	38.00	46.70
Third income quartile	15.70	20.10	24.60
Highest income quartile	13.50	18.70	23.90

Millennials (in 2016)

	Lower bound	Estimate	Upper bound
Lowest income quartile	147.80	372.00	596.20
Second income quartile	64.60	85.70	106.80
Third income quartile	45.60	55.50	65.50
Highest income quartile	27.30	34.90	42.40

Source: GAO analysis of data from the Survey of Consumer Finances. | GAO-20-194

Note: Estimates for Baby Boomers were not reliable and are not presented. The student loan-to-income ratio represents total household education loans divided by total household income for the year. Households included in this analysis have a head of household or spouse or partner who is between 25 and 34 years old. Lines overlapping the bar represent 95 percent confidence intervals.

Although Millennial households have more student debt than previous generations, they may also benefit from federal student loan repayment plans and forgiveness programs. Households that qualify for these programs may not have to repay their student debt in full, though to date about half of student loans are still under standard repayment plans and few potentially qualified borrowers have been granted forgiveness (see textbox).

The long-term effects of higher educational attainment, along with higher education loans, on Millennial households is unclear. It is possible that those with advanced degrees may be better situated over time to repay their student loans. However, while an estimated 18 percent of Millennial households in 2016 had advanced degrees (master's degree or above), an estimated 45 percent had student loans, indicating that many Millennial households with student loans did not have an advanced degree. In addition, while the college income premium is real, high levels of student debt may affect the ability to accumulate wealth, which may be why average net worth levels have decreased for college graduates.[56]

The Millennial generation is different from previous generations on several measures of financial well-being, so there is uncertainty about how they will do financially as they age. On one hand, they have higher levels of educational attainment, and college graduates earn substantially more than non-college graduates. On the other hand, despite Millennials completing college degrees at higher rates than previous generations, average and median income are not higher for Millennials overall, which is consistent with flat intergenerational economic mobility and persistence of economic status across generations. Millennials also have less home equity than past generations because they are buying homes at lower rates. Given relatively stagnant average income across generations, it is not clear whether Millennials will begin earning more and buying homes later in life or whether lower homeownership rates will persist over time. Millennials are saving for retirement at rates comparable to Generation X, and saving early in life should benefit Millennials in the long run. Yet, they have significantly higher levels of student loan debt than past generations. Some Millennials may ultimately qualify for programs that help them lower their federal student loan debt, but it remains to be seen

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[56]See Federal Reserve Bank of St. Louis, *Is College Still Worth It?* (St. Louis, MO: 2018), accessed September 17, 2019, https://fredblog.stlouisfed.org/2018/07/is-college-still-worth-it/. This study compared those with a bachelor's degree or higher to those with no college degree.

how these factors will affect Millennials' financial circumstances in the long run, including in retirement.

Agency Comments

We provided a draft of this report for review and comment to the Departments of Labor (DOL) and the Treasury and to the Social Security Administration (SSA). We received technical comments from DOL, which we incorporated as appropriate. Treasury and SSA provided no comments.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the appropriate congressional committees, the Secretaries of Labor and the Treasury as well as the Administrator of the Social Security Administration. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-7215 or jeszeckc@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix II.

Sincerely yours,

Charles A. Jeszeck
Director, Education, Workforce, and
  Income Security Issues

Appendix I: Objectives, Scope, and Methodology

Our objectives were to examine (1) what is known about intergenerational income mobility, and (2) how the financial circumstances of Millennials compare to previous generations. In order to determine what is known about intergenerational income mobility (which we use interchangeably with "economic mobility") in the United States, we conducted a literature review of relevant, recent economic studies. We identified the majority of the studies we reviewed through systematic searches of databases such as ProQuest, Scopus, and EBSCO using search terms such as "economic mobility," "income mobility," "intergenerational income mobility," or "intergenerational income elasticity." We searched for scholarly and peer-reviewed publications, working papers, government reports, and think tank reports. We also reviewed studies recommended during expert interviews as well as some included in the bibliographies of key studies on the topic of economic mobility.

We used four criteria to target our literature search. In order to be included, studies had to:

(1) include original estimates of at least one of three measures of intergenerational economic mobility:[1] absolute economic mobility, relative economic mobility, and intergenerational income elasticity;

(2) focus on the United States;

(3) be published in the past 5 years (2014-2019), or 2 years if a working paper (2017-2019);[2] and

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[1]We specifically excluded studies that focused on *intra*generational mobility, i.e., the changes in earnings over an individual's lifetime in order to maintain the focus on overall mobility across generations.

[2]Estimating the degree of intergenerational income mobility in the United States is challenging in part because of the lack of datasets that track incomes across generations, small sample sizes, and imprecise measurement of incomes. However, relatively recent strides have been made in putting together large, matched datasets that allow for more robust analysis of economic mobility. Because of this, we chose to focus on the most recent research.

(4) be published in a U.S.-based publication.

We then reviewed over 280 abstracts and further evaluated approximately 90 potentially appropriate studies, eliminating ones that did not meet our four criteria. A technical review of each study by at least two GAO economists included an assessment of key findings about economic mobility, methodology, data, assumptions, and limitations. Twenty studies met our four criteria and, based on our technical review, had sufficient methodological rigor for the purpose of providing information on economic mobility.

Researchers attempting to estimate the degree of economic mobility in the United States face challenges in acquiring datasets with precise income measurements and that track incomes across generations with sufficient sample sizes. Potential reasons why researchers produce different estimates of economic mobility measures include:

- **Differences in Datasets and Their Respective Limitations.** Different datasets may not equally represent every segment of the population. For example, studies making use of the Panel Study of Income Dynamics (PSID) are not generalizable to populations not included in large numbers when the PSID began, such as recent immigrants and institutionalized populations.[3] In addition, some studies rely on data that are not fully representative of the entire income distribution, either because they do not include a sufficient sample of households with very high income or, conversely, households with very low or zero earnings. Some datasets do not capture individuals who are not working or not filing taxes during the period of analysis. For instance, in one study making use of tax data, the authors noted that if parents never file a tax return, they cannot be linked to their child. In that study, parents of approximately 5 percent of children were not identified.[4] In some cases, the data capture a

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[3]The PSID database has some limitations for the purpose of estimating economic mobility, as identified by Mitnik et al. (2018): (1) survey does not cover institutionalized population (e.g., people in prison), (2) PSID only collects full income information for household heads and their spouses, (3) post-1968 immigrants and their descendants are not represented in the PSID samples available to study intergenerational mobility, (4) survey is affected by substantial attrition, (5) survey does not cover the upper tail of the income and earnings distributions well, (6) survey does not allow after-tax measures of income to be reliably computed.

[4]See for example: Raj Chetty, et al. "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *The Quarterly Journal of Economics*, vol. 129, no. 4 (2014): p. 1553-1623.

limited age range, which leaves open the possibility of somewhat different results among different age ranges.[5]

In addition to different sampling strategies, datasets also capture different variables for each individual or household observed. Even the most comprehensive datasets currently available may lack the data to completely account for factors that may influence mobility, such as changes in family structure over time or detailed individual demographic characteristics for both parent and child households.[6]

- **Differences in Treatment or Construction of Variables.** Estimates of intergenerational income mobility can be affected by choices the researcher makes, such as selecting a price deflator to inflation-adjust parents' incomes; selecting the ages at which children and parents will be compared, accounting for changing trends in household size and composition; determining the value of non-cash benefits (e.g., employer-sponsored health insurance); and determining work-related costs associated with dual-earner households (e.g., child care). Some studies impute earnings for non-tax filers, and different methods of imputation may lead to slightly different results; in other studies, those with no reported income or observations with other missing variables (e.g., demographic characteristics) may simply be dropped from the dataset. How "parent" and "child" are defined may also differ across datasets (e.g., a parent could be the first adult to claim a child on their tax return, or could be an adult male living with a minor child in a household). Additionally, some studies required the researchers to construct datasets that matched parents and children at different points in time. Each researcher makes choices about how to handle the data, which can lead to different estimates. While we did not perform checks on these constructed data, the studies in our review generally included descriptions of the data and methodologies used as well as the difficulties and limitations associated with dataset construction, which we evaluated in our technical review.

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[5]For example, income correlations tend to vary depending on the ages at which parents' and children's income is measured. Measuring income at too early an age may underestimate the true size of lifetime income elasticities.

[6]For instance, in one study making use of tax data, the authors note that tax filing status is not necessarily the same as household structure—people could be living together unmarried and pooling resources but would be counted as single with one income in this analysis. The authors find that their estimates of marriage and thus resource pooling likely include error and could impact results. Pablo Mitnik et al. *New Estimates of Intergenerational Mobility Using Administrative Data* Statistics of Income Working Paper. (Washington, D.C: Internal Revenue Service, 2015).

- **Differences in Choice of Economic Mobility Measure and Model Specification.** Each measure of economic mobility provides a slightly different lens on mobility and has different interpretations. Absolute economic mobility, which compares the inflation-adjusted income of parents and children at similar ages, tends to reflect trends in overall economic growth and distribution of that growth. For instance, 92 percent of 30-year-olds in 1970 made more in inflation adjusted terms than their parents did at that age, while about half of children born in the 1980's grew up to make more money than their parents by age 30. The difference may largely have been due to higher economic growth and a more equitable distribution of that growth along the income distribution from 1940-1970, whereas growth was slower and distributed differently between 1970 and the present. IGE offers a different metric with different limitations. Studies that estimate IGE regress log child income on log parent income. This conveniently yields a coefficient that can be interpreted as "the percent change in child income given a 1 percent change in parent income." However, such estimates tend to be unstable because the relationship is non-linear and sensitive to the treatment of children with zero or very small incomes (because the log of zero is mathematically undefined). IGE is very sensitive to assumptions about the income of those with missing income data and typically does not include households with zero earnings, and so excludes some households with no income. Additionally, elasticities are sensitive to changes in cross-sectional income distributions (like during recessions). If children's income distribution becomes more unequal, then the elasticity will become larger, all else equal.[7]

Despite these limitations, based on our technical review, all of the studies summarized in the report are of sufficient methodological rigor for the purpose of providing information on economic mobility. The authors of the studies we reviewed were generally aware of and transparent regarding the limitations of the datasets they worked with, and carried out analyses to test their results for robustness to different assumptions.

Although there were differences in study datasets and methodologies, common themes emerge from the body of literature we reviewed. For example:

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[7]P. Mitnik, V. Bryant, and D. Grusky, *A Very Uneven Playing Field: Economic Mobility in the United States*, Stanford Center on Poverty and Inequality (2018).

- None of the studies we reviewed found economic mobility to be increasing—all found it to be either flat or declining.

- While there was variation among studies regarding the exact degree to which parental income influences individuals' income as adults, all studies we reviewed that examined parental income found it to be an important determinant of economic mobility.

- None of the studies that examined race found blacks to have higher mobility than whites.

- The studies we reviewed that examine geography agree that different locations have different economic mobility and that part of this variation is connected to the characteristics of a given place (such as school quality or level of segregation), not just to the characteristics of people who choose to live there.

In other words, while the studies varied in their point estimates of various measures of economic mobility and its determinants, there was broad consensus among the studies regarding the sign (positive versus negative) and interpretation of the estimates. Additionally, these studies represent an advance in the data and analysis capabilities relative to past studies that examined economic mobility, largely because improved computing power has enabled more complex analyses of large datasets comprised of millions of records.[8] See table 1 for the list of studies included in our review.

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[8]See Liran Einav and Jonathan Levin, "Economics in the age of big data," *Science* 346, no. 6210 (2014). See also Matthew Harding and Jonathan Hersh, "Big Data in economics," *IZA World of Labor*, 2018:145 (2018).

Table 1: Economic Mobility Studies Reviewed

Year	Title	Authors	Source
2014	Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States	Chetty, Raj; Hendren, Nathaniel; Kline, Patrick; Saez, Emmanuel	The Quarterly Journal of Economics
2014	Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility	Chetty, Raj; Hendren, Nathaniel; Kline, Patrick; Saez, Emmanuel; Turner, Nicholas	American Economic Review
2014	Black-white differences in intergenerational economic mobility in the United States	Mazumder, Bhashkar	Economic Perspectives
2015	Income Inequality and Intergenerational Income Mobility in the United States	Bloome, Deirdre	Social Forces
2015	New Estimates of Intergenerational Mobility Using Administrative Data[a]	Mitnik, Pablo; Bryant, Victoria; Weber, Michael ; Grusky, David B.	Statistics of Income Division of the Internal Revenue Service
2015	Economic Mobility in the United States	Mitnik, Pablo; Grusky, David	Pew Charitable Trusts and the Russell Sage Foundation
2015	Geographic Effects on Intergenerational Income Mobility	Rothwell, Jonathan T.; Massey, Douglas S.	Economic Geography
2017	Childhood Family Structure and Intergenerational Income Mobility in the United States	Bloome, Deirdre	Demography
2017	The Fading American dream: Trends in Absolute Income Mobility Since 1940	Chetty, Raj; Grusky, David; Hell, Maximilian; Hendren, Nathaniel; Manduca, Robert; Narang, Jimmy	Science
2017	Up from Slavery? African American Intergenerational Economic Mobility Since 1880	Collins, William J.; Wanamaker, Marianne	National Bureau of Economic Research Working Paper
2017	Changing Roles of Ability and Education in U.S. Intergenerational Mobility	Richey, Jeremiah; Rosburg, Alicia	Economic Inquiry
2018	Intergenerational Income Mobility: Counterfactual Distributions with a Continuous Treatment	Callaway, Brantly; Huang, Weige	Department of Economics, Temple University
2018	The Opportunity Atlas: Mapping the Childhood Roots of Social Mobility	Chetty, Raj; Friedman, John N.; Hendren, Nathaniel; Jones, Maggie R.; Porter, Sonya R.	National Bureau of Economic Research and U.S. Census Bureau Center for Economic Studies Working Paper
2018	The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects	Chetty, Raj; Hendren, Nathaniel	The Quarterly Journal of Economics
2018	The Impacts of Neighborhoods on Intergenerational Mobility II: County-Level Estimates	Chetty, Raj; Hendren, Nathaniel	The Quarterly Journal of Economics
2018	Race and Economic Opportunity in the United States: An Intergenerational Perspective	Chetty, Raj; Hendren, Nathaniel; Jones, Maggie R.; Porter, Sonya R.	National Bureau of Economic Research and U.S. Census Bureau Working Paper
2018	A Very Uneven Playing Field: Economic Mobility in the United States	Mitnik, Pablo; Bryant, Victoria; Grusky, David	Stanford Center on Poverty and Inequality

Year	Title	Authors	Source
2018	One Size Doesn't Fit All: A Quantile Analysis of Intergenerational Income Mobility in the U.S. (1980-2010)	Palomino, Juan C.; Marrero, Gustavo A.; Rodriguez, Juan G.	Journal of Economic Inequality
2019	The Decline in Intergenerational Mobility after 1980	Davis, Jonathan; Mazumder, Bhashkar	Federal Reserve Bank of Chicago Working Paper WP 2017-05
2019	The Intergenerational Transmission of Family-Income Advantages in the United States	Mitnik, Pablo; Bryant, Victoria; Weber, Michael	Sociological Science

Source: GAO review of studies | GAO-20-194.

Notes: Each of the studies met the four criteria for inclusion in our review: they (1) include original estimates of at least one of three measures of intergenerational economic mobility: absolute mobility, relative mobility, or intergenerational income elasticity (IGE); (2) focus on the United States; (3) were published in the past 5 years (2014-2019), or 2 years if a working paper (2017-2019); and (4) were published in a U.S.-based publication. Additionally, two GAO economists reviewed each study and determined they were of sufficient methodological quality for the purpose of providing information on economic mobility.

[a]We made an exception to our criteria and included this working paper released in 2015 because it is a longer, more technically detailed version of the results published in "Economic Mobility in the United States" by the Pew Trusts in 2015.

Analysis of Millennials' Financial Circumstances

After considering possible datasets, we chose the Survey of Consumer Finances (SCF) for this analysis because the data are appropriate for estimating measures of income and wealth across generations, including asset and debt categories of interest like homeownership and student debt. The SCF is a triennial survey of U.S. households sponsored by the Board of Governors of the Federal Reserve System in cooperation with the Department of the Treasury. Every 3 years, the SCF interviews a different sample of households and aims to be representative of households across economic strata, including the top of the wealth distribution. The SCF provides information on household balance sheets, including detailed information on assets and debts, as well as pensions, labor force participation, and demographic characteristics at the time of interview. We compared the financial circumstances of young households across 3 years of the SCF, as each year was representative of a generation (or birth cohort) when someone in the household (either the head of household or a spouse or partner) was 25-34 years old, following similar previous GAO work.

Data Limitations

Our analysis of SCF data allowed us to make intergenerational comparisons, but not to follow the same individuals over time, so we were not be able to compare children to their parents using these data. While

our analysis allowed us to make comparisons, it did not allow us to make statements as to why Millennials are different or similar to other generations. Moreover, our data analysis focused on relatively older Millennials whose experiences may be different than those born later in the generation, especially due to the timing of the Great Recession. The SCF dataset is based on self-reported data and as a result, the data are subject to nonsampling error, including the ability to get information about all sample cases; difficulties of definition; differences in the interpretation of questions; and errors made in collecting, recording, coding, and processing data. Also, demographic analyses using these data may be limited based on the sample size needed to produce reliable estimates. Lastly, we cannot make predictions about the future financial circumstances of Millennials based on this snapshot in time.

There are also limitations with the SCF with respect to making comparisons by gender. In a household headed by a single person, the head is taken to be the single core individual. However, in households headed by a central couple who is of mixed sex, the head is taken to be the male in the household. This assumption makes it difficult to make reliable comparisons by gender. Finally, the SCF generally asks questions of household heads and their spouses (and not others living in the household), so it likely underemphasizes young adults who were still living with their parents, which is more prevalent for the Millennial generation. Thus, there may be some selection bias in the SCF with respect to relatively more financially well-off Millennials.

For the data used in our analysis, we reviewed documentation and tested the data for anomalies. We determined that these data were sufficiently reliable for the purposes of this report.

Analysis of SCF

We defined young households in each generation as those in which the household head or any spouse or partner was 25-34 years old. We compared Millennial households in 2016 to Generation X households in 2001 and Baby Boomer households in 1989.

- Baby Boomers were born from 1946 to 1964 and were 25-43 years old in 1989, so we used the 1989 SCF for Baby Boomer households when they were young adults.

- Generation X individuals were born from 1965 to 1981 and were 20-36 years old in 2001, so we used the 2001 SCF for Generation X households when they were young adults.

- Millennials were born from 1982 to 2000 and were 16-34 years old in 2016, so we used the 2016 SCF for Millennial households when they were young adults.

We used the SCF's measures of income, net worth, assets, and debt from the summary extract data as measures of financial circumstances.

- We defined household income as the sum of income across all sources. Income includes a family's cash income, before taxes, for the full calendar year preceding the survey. The components of income are wages, self-employment and business income, taxable and tax-exempt interest, dividends, realized capital gains, benefits from social safety net programs, 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.

- We defined household net worth as assets minus debt. Assets include financial assets, including liquid assets in bank accounts, certificates of deposit, money market accounts, stocks and bonds, cash value of life insurance, retirement accounts, and other financial assets. Assets also include nonfinancial assets, such as the value of vehicles, primary residences, other residential property, businesses, and other nonfinancial assets. Debt includes mortgages, home equity loans, credit card balances, education loans, vehicle loans, other installment loans, and other debt, including loans against pensions or life insurance. Households could have financial resources outside of net worth, including future income from defined benefit plans or Social Security; however, we did not attempt to estimate the actuarial present value of these financial resources in our net worth calculation given the long time horizon to retirement and the amount of uncertainty associated with such a measurement. In addition, in our professional judgment, the inclusion of these financial resources would not have altered our finding that Millennials have lower net worth compared to previous generations; the inclusion of these financial resources would likely have widened the gap further between Millennials and previous generations because previous generations had greater access to DB plans than the Millennial generation.

We estimated means and medians for variables of interest, both overall and by quartile. We estimated the standard errors and constructed the confidence intervals taking into account the dual-frame sample design in

order to estimate the sampling variance for these estimates. One part of the design is a standard, multistage area-probability design, while the second part is a special over-sample of relatively wealthy households. This is done in order to accurately capture financial information about the population at large as well as characteristics specific to the relatively wealthy. The two parts of the sample are adjusted for sample nonresponse and combined using weights to make estimates from the survey data nationally representative of households overall. Unless otherwise indicated, estimates in this report are statistically significant at the $p<.05$ level, and the error bars in the figures represent the 95 percent confidence intervals for the estimates.

We conducted this performance audit from November 2018 to December 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Charles Jeszeck, (202) 512-7215 or jeszeckc@gao.gov

Staff Acknowledgments

In addition to the contact named above, Michael J. Collins (Assistant Director), Jessica K. Rider (Analyst-In-Charge), Jessica Mausner, Kathleen McQueeney, and Layla Y. Moughari made key contributions to this report. Also contributing to this report were James Bennett, Alicia Cackley, Pin-En Annie Chou, Justin Dunleavy, Sarah C. Gilliland, Gina M. Hoover, Susan J. Irving, Dan Luo, Sheila R. McCoy, John W. Mingus Jr., Corinna Nicolaou, Oliver M. Richard, Vernette G. Shaw, Joseph Silvestri, Almeta Spencer, Frank Todisco, and Adam Wendel.

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