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ABSTRACT

Has Intergenerational Progress Stalled? Income Growth over Five Generations of Americans*

We find that each of the past four generations of Americans was better off than the previous one, using a post-tax, post-transfer income measure constructed annually from 1963-2022 based on the Current Population Survey Annual Social and Economic Supplement. At age 36–40, Millennials had a real median household income that was 18 percent higher than that of the previous generation at the same age. This rate of intergenerational progress was slower than that experienced by the Silent Generation (34 percent) and Baby Boomers (27 percent), but similar to that experienced by Generation X (16 percent). Slower progress for Generation X and Millennials is due to their stalled growth in work hours—holding work hours constant, they experienced a greater intergenerational increase in real market income than Baby Boomers. Intergenerational progress for Millennials under age 30 has remained robust as well, although their income growth largely results from higher reliance on their parents. We also find that the higher educational costs incurred by younger generations is far outweighed by their lifetime income gains.

JEL Classification: D31, E24, H24, J3, J62
Keywords: full income, growth, generations, mobility, Millennials

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1. Introduction

A defining aspect of the American Dream is that the economic wellbeing of each generation should surpass that of the previous one. Whether this condition holds for younger generations has recently been called into question. A 2022 Gallup poll found that just 42 percent of Americans expect that today's youth will have a better life than their parents—down from 71 percent who felt that way in 1999 (Brenan 2022). Similarly, headlines in recent years have called Millennials (born from 1981–1996) the "unluckiest generation in U.S. history" (Van Dam 2020) and claimed that "many Millennials are worse off than their parents—a first in American history" (Luhby 2020).[1] Yet, when asked about their own financial situation compared to their parents at a similar age in the Federal Reserve's Survey of Household Economics and Decisionmaking (SHED), Millennial and Generation Z adults were nearly as likely as Baby Boomers to report doing better than their parents at the same age.[2] Hence, young adults appear to be more positive about their own financial progress than popular commentary suggests. Additionally, recent work by Twenge (2023) claimed that counter to recent narratives, intergenerational income growth for millennials in young adulthood far surpassed the intergenerational income growth for either Generation X or Baby Boomers. Gaining an accurate understanding of changes in economic wellbeing across generations, in light of these narratives, is important for assessing the state of the American Dream.

Previous research has provided important insights on intergenerational comparisons of wellbeing. Much of this research compares the economic wellbeing of adult children to their parents.[3] Studies of absolute mobility estimate the share of adults whose incomes exceed that of their parents at a constant age, often comparing contemporary adults to their parents without examining longer periods to document trends in absolute mobility (e.g., Urahn et al. 2012). One recent exception is Chetty et al. (2017). They combine cross-sectional survey data with individual tax records, allowing them to calculate trends in absolute mobility over longer time

[1] That Millennials are the first generation to underperform their parent's generation is also the thesis of Filipovic (2020).
[2] In the 2022 survey, 50 percent of Millennial adults and 51 percent of Generation Z adults felt they were better off financially than their parents at the same age. Among Generation X adults, 53 percent felt they were better off and among Baby Boomers, 56 percent did. In each of these generations an additional 21 to 26 percent said they were doing about the same as their parents financially (authors' calculations; Federal Reserve Board 2023).
[3] Other research compares mobility in terms of other outcomes such as occupations (Long and Ferrie 2013; Song et al. 2020).

periods. When doing so, they find that the share of children who earn more than their parents fell from 92 percent among those born in 1940 to 50 percent among those born in 1984. Other studies focus on relative mobility, that is, the correlation between the position of an adult in the income distribution to the position of their parents in the income distribution at a constant age (Mayer and Lopoo 2005; Lee and Solon 2009; Chetty et al. 2014; Ward 2023).[4]

Although much of the previous literature is limited to comparing a relatively small number of generations (typically two) in a comparison of contemporary adults to their parents, whether the pace of intergenerational improvement has slowed could be as important as whether growth is positive. Additionally, a direct comparison of the economic wellbeing of adults to their own parents is not the only informative question about whether progress has slowed or reversed over generations. Current generations of adults might also compare themselves to the wider distribution of members of previous generations, not solely their own parents.[5] Finally, previous research has not evaluated changes in wellbeing using a comprehensive measure of income that adjusts for taxes, and includes both cash and in-kind transfers for the entire sample period to evaluate trends in a full array of resources.[6]

We address these questions by evaluating whether each generation as a whole has surpassed the previous one, comparing individuals from across seven generations—from the Lost Generation (born 1883–1900) to Generation Z (born 1997–2012)—using the Current Population Survey Annual Social Economic Supplement (CPS ASEC) from Flood et al. (2022).[7] We construct consistent comparisons by estimating for each generation at each age the distribution of a broad measure of income that accounts for tax liabilities and cash and in-kind transfers. The importance of assessing economic wellbeing using a broad measure of income has been

[4] Survey-based studies have found mixed results. Chetty et al. (2014) use linked tax records to compare the income of adults of approximately 30 years of age in 2011 and 2012 to their family income as children, finding that a child whose parents are 10 percentile points higher up in the income distribution have on average a 3.4 percentile points higher income when they become adults.

[5] Comparisons to one's own parents also differ from comparisons across generations in that one's parents are not always in the previous generation. As the age at which parents have their first child has increased (Mathews and Hamilton 2002), it produces more time for improvements from parent to child relative to the roughly constant length of societal generations.

[6] We emphasize, however, that the cost of earning the income can change as well, as more young adults are investing in college and the cost of higher education has risen over time. We discuss implications of changes to human capital accumulation on results in section 5 of this paper.

[7] While our data contain some members of these seven generations, we primarily focus on the five generations from the Greatest Generation (born 1901–1927) through Millennials (born 1981–1996) since we can observe them in mid-adulthood.

demonstrated by previous research that shows conclusions about trends in economic wellbeing over time are changed when using a full measure of income relative to a narrower one (see, for example, Piketty, Saez, and Zucman 2018; Larrimore et al. 2021; Burkhauser et al. Forthcoming; Auten and Splinter Forthcoming). Thus, using a broad measure of income could change conclusions about whether younger generations have outperformed older generations at a similar age. In addition, our 60-year sample period (1963–2022) allows for a longer period than most previous studies to put recent changes in historical context. Our analysis of incomes across generations can serve as a complement to recent research by Fisher and Johnson (2022) who used the Panel Study of Income Dynamics to consider income, consumption, and wealth across generations through adults born before 1985. It also complements Horpedahl (2021) who used the Federal Reserve's Distributional Financial Accounts to look at intergenerational wealth trends.

We find that at age 36–40 (our focal age range because it allows for comparisons across five generations) broad income has risen for every generation relative to the previous one, though at a slower rate for Generation X and Millennials. The median 36–40 year old from the Silent generation had a household income that was 34 percent higher than the Greatest Generation's median person for the same age range. Baby Boomers in this age range had a median income that was 27 percent above that of the Silent generation. The intergenerational income growth rate was a lower 16 percent for Generation X and 18 percent for Millennials. The rate of broad income growth was also positive at the 25th and 75th percentiles for each generation compared to the previous one, with a similar slowdown for the more recent generations.

The patterns of income growth over time have been affected by the growth in government transfers. In particular, the slowdown in intergenerational progress was more pronounced when looking at market incomes than when looking at broader income measures accounting for taxes and transfers. Nevertheless, Millennials in their late 30s still had market incomes that were 14 percent above that of Generation X.

The continued intergenerational progress we observe for those in their late 30s is also not due to changing rates of household formation. Changes in household formation boosted recent intergenerational progress in household incomes for those in their 20s, as more people now live with and rely on their parents in early adulthoods. This could reflect some financial distress

among young adults if they desire moving away from their parents but lack the financial resources to do so.[8] Yet, by age 31 less than 10 percent of Millennials lived within a household where their parents received over half the income. Consistent with these household formation trends, the improvements across generations for those in their late-30s are also apparent when looking at the incomes of individuals and couples, rather than households.

A major contributor to the slowdown in intergenerational progress for Generation X and Millennials is a slowdown in the growth of work hours. In their late 30s, the median members of the Silent Generation and Baby Boomers worked 27 to 32 percent more hours than the previous generation, while Generation X and Millennials worked on average 1 to 4 percent more than the previous generation. The work hours slowdown coincides with the stalling of female labor supply growth at the turn of the millennium, after which point Generation X and Millennials began to reach their late 30s. Holding work hours constant, we find that Generation X and Millennials experienced a larger intergenerational increase in market income than Baby Boomers and a somewhat smaller intergenerational increase than the Silent Generation.

Given the heightened concerns about student loan debt and the cost of college eroding this progress, we also consider the magnitude of intergenerational improvements relative to increases in the cost of higher education. Once accounting for growing financial aid, we find that the increase in the cost of higher education for Millennials relative to Generation X represents only three years of the increase in their household incomes. The burden of repaying this debt is frontloaded on early working years when earnings (for all generations) are lower, which do offset intergenerational gains for those who attend college as they enter adulthood. Nevertheless, when considered over the entire lifespan, the increased cost of college represents a small share of the increase in lifetime income for Millennials relative to previous generations.

Our results are consistent with previous research showing a general decline in absolute upward mobility over time (Chetty et al. 2017; Fisher and Johnson 2022). But in contrast to that work we find that for Millennials this decline stopped and income growth slightly increased. However, we also find that any acceleration in income growth is far smaller than that suggested by Twenge

[8] Non-financial factors may also play a role, however, such as the rising age of first marriage (Julian 2021).

(2023), who observed that Millennials had about 9 times the intergenerational income growth at ages 25–34 than either Baby Boomers or Generation X.

The greater intergenerational progress that we observe relative to Fisher and Johnson (2022) in part reflects our broader income measure; additional years of data; and adjusting for inflation using the Personal Consumption Expenditures (PCE) price index, which like the Chained Consumer Price Index (Chained CPI) better reflects price changes than the traditional Consumer Price Index (CPI-U).[9] The greater consistency in intergenerational income growth that we observe relative to Twenge (2023) is likely due to our observing individuals across all years of the data.[10]

Given that we only observe the oldest Millennials at our comparison age in our dataset, our results are likely to somewhat understate the intergenerational progress of Millennials. This result counters some popular narratives that Millennials are worse off than previous generations, but it also provides optimism that the American Dream may no longer be fading. This is especially the case if rather than comparing themselves only to their parents, Americans define progress on the basis of how they compare to the full distribution of Americans in the prior generation, as we do in this paper.

The paper proceeds as follows: Section 2 describes our data, the construction of our broad income measure, and how we define and compare generations. Section 3 presents our main results on intergenerational progress. Section 4 documents the role of changes in work hours. Section 5 reports intergenerational progress by educational attainment. Section 6 considers racial differences in intergenerational progress. Section 7 reports the results of alternative specifications that account for incomplete observation of some generations and the inclusion of the value of health insurance as income. Section 8 discusses the results. Section 9 concludes.

[9] The methodology of the CPI-U has changed over time. The Consumer Price Index retroactive series (CPI-U-RS) applies current methods to the historical CPI-U. Therefore, when comparing results in this paper to the CPI we use the CPI-U-RS rather than the CPI-U. For details on the CPI-U-RS, see Stewart and Reed (1999).

[10] Although Twenge (2023) selects expansion years for the comparison, the notably different results for Generation X's intergenerational income growth that she finds in figure 5.15 comparing Gen X in 2004 to Baby Boomers in 1987 (at ages 25–34) and in figure 4.19 comparing Gen X in 2019 to Baby Boomers in 2004 (at ages 45–54) suggests the importance of the observation years for the trends.

2. Data and methodology

We use the CPS ASEC to construct our various income measures for each year from 1963 to 2022. The CPS ASEC is a nationally representative household survey used by the Census Bureau to estimate historical household income and poverty trends. It has the advantages of asking a large set of questions about income that elicit relatively more accurate responses than some other household surveys and being available annually for approximately six decades. We use the CPS ASEC to calculate for each individual or household two primary definitions of income—(i) market income and (ii) post-tax, post-transfer income, which starts with market income and subsequently adjusts for taxes and includes the value of cash and nonmedical in-kind transfers.[11]

Although the CPS ASEC is among the best sources of historical household income data, it lacks some of the necessary information to calculate these income measures because it lacks tax information prior to 2005 and the value of in-kind transfer benefits prior to 1979. Thus, we impute these missing income sources following the approach in Burkhauser et al. (Forthcoming). We impute federal income taxes, state income taxes, and payroll taxes for all years using NBER TAXSIM (Feenberg and Coutts 1993).[12] We use the imputed values of major nonmedical in-kind transfers—the Supplemental Nutritional Assistance Program (SNAP), rental housing assistance, and school lunch—from Burkhauser et al. (Forthcoming). These imputations rely on administrative data on aggregate caseload and spending data for each year, as well as predictions of recipients and benefit values on the basis of survey responses when such data were recorded in the CPS ASEC. We also correct for unemployment insurance underreporting in the CPS ASEC during the COVID-19 pandemic using tax-record based imputations from Larrimore, Mortenson, and Splinter (2023a). We similarly correct for differential nonresponse during the COVID-19 pandemic using the corrected weights from Rothbaum and Bee (2021). In Section 8, we discuss how other forms of income misreporting for which we do not correct may bias our results.

[11] For income years 1963-1966, we exclude from market income all unearned income—both government income and interest, dividends, rent, and alimony—because all of these income sources are reported together as a single aggregate source. This will lead us to understate market income in 1963-1966, and because these non-government income sources are counted as market income in all later years starting in 1967, will lead us to overstate growth in market income for our earliest generations. Given that our focus is on relatively young working age adults (age 36-40), however, these unearned sources of income are likely small and thus the upward bias in market income growth is likely small. In 1967, these unearned government income sources represented just 2 percent of the total market income of 36 to 40 year old adults.

[12] Because state tax laws prior to 1978 are not incorporated in TAXSIM, we apply state tax law as of 1978 to impute state income taxes for all years from 1963-1977, following the approach taken by Burkhauser et al. (Forthcoming).

Finally, while top-coding of income in the CPS ASEC leads to understatement of income at the top of the distribution, our focus on the median—and occasionally the 25th and 75th percentiles of the income distribution—instead of means allows us to avoid this source of bias.

We convert all nominal income values into 2019 dollars using the PCE price index. We use the PCE price index because unlike the CPI-U-RS it accounts for the ability of consumers to substitute across broad categories of items, and because unlike the Chained CPI-U, the PCE price index is available for our entire sample period.[13] In a sensitivity analysis, we also show major results using the CPI-U-RS instead. Notably, others have argued that even the PCE price index overstates inflation largely because it does not adequately account for new products and quality changes (Meyer and Sullivan 2012; Moulton 2018); this would suggest that our baseline estimates that adjust for inflation using the PCE price index could understate intergenerational progress.

We analyze two different sharing units. Our primary analysis takes the household as the sharing unit, reflecting all of the resources available to household members regardless of who brings the resources into the household. When using the household sharing unit, we equivalize resources using a square root equivalence scale. This reflects economies of scale in consumption, such that the cost of maintaining a constant standard of living when moving from one to two household members is equal to the cost when moving from two to four household members. In separate analyses we also consider the income of individuals and couples to distinguish between resources received by the members of a particular generation and the resources brought in by others such as parents and to separate income trends from shifts in resources that result from changing child-bearing decisions. To the extent that adult children increasingly live with and rely on their parents to meet their material ends (so called "boomerang children"), this distinction could affect trends in household income growth. For the income of individuals and couples, we follow Piketty, Saez, and Zucman (2018), Larrimore, Mortenson, and Splinter (2022), and Auten and Splinter (Forthcoming), and allocate half of the couple's resources to each individual without

[13] In 2023, the Census Bureau began using the Chained CPI-U to adjust incomes for inflation, rather than a version of the CPI-U that applies current methods historically (CPI-U-RS), recognizing that it is a better measure of actual consumer inflation experiences (Guzman and Kollar 2023). The Chained CPI-U is only available since 2000, so cannot be used in earlier years. Because the PCE price index and Chained CPI-U find similar rates of inflation, and the PCE price index is available from the beginning of our series, we use the PCE price index for all years.

further adjustments for economies of scale.[14] We allocate all market income such as earnings to the individual who earns it, and we allocate taxes equally within couples who are expected to jointly file a tax return. For cash transfer income captured in the CPS ASEC, we allocate the transfer income based on the recipient recorded in the survey. For imputed in-kind transfer income, we allocate transfers to the householder identified in the CPS ASEC.

We group individuals into generations based on the year in which they were born: the Lost Generation (1883–1900), the Greatest Generation (1901–1927), the Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), and Generation Z (1997–2012). These classifications, taken from those created by Pew Research (Dimock 2019), have the advantage of being used in previous research, reports, and public commentary.[15] Each of the generation classifications since the Silent Generation also spans a relatively similar amount of time, from 15 to 18 years, allowing for consistent comparisons of income growth across generations. We compare generations by examining the distribution of income across all individuals in a given generation of a given age (or age range). Because members in a given generation were born over a 15- to 18-year period, a given generation will be of a given age in different calendar years. For example, members of Generation X were 35 years old between 2000 (those born in 1965) and 2015 (those born in 1980).

Our data sample includes calendar years 1963 through 2022, and so we can only make comparisons of generations which reached a given age in some year during that range.[16] Figure 1 indicates the calendar years in which a generation's members were of a given age. The dashed red lines at 1963 and 2022 indicate the earliest and latest years of our sample. Thus, we only observe a generation's members at a given age if it is at least partially contained by the dashed red lines. For example, at age 20, we observe three years of the Silent Generation (those born in 1943–1945), as well as all Baby Boomers, Generation X and Millennials. We do not observe the Greatest Generation at age 20 because they were born prior to 1943. Similarly, we do not

[14] Subsequent references in this paper to couple incomes always refer to the income of the individual alone if single, and the equal-split income of the individual and their spouse if married.
[15] Dimock (2019) does not provide a beginning year for the Greatest Generation or the span of the Lost Generation. We define the Lost Generation as those born between 1883 and 1900 based on Strauss and Howe (1991), who also define the Greatest Generation as starting with those born in 1901.
[16] To ensure that results are not driven by the pandemic experiences, we also conducted our analyses ending in 2019 and produced similar results.

observe those members of Generation Z who were born after 2002 at age 20 or later in adulthood.

For our purposes, we are concerned about observing adults at a prime working age after educational investments have been made. This makes ages 36–40 of interest, because these encompass prime working ages for which we can observe five generations—the latest born members of the Greatest Generation, all of the Silent Generation, Boomers and Generation X, and earlier born Millennials. Because we only observe the youngest members of the Greatest Generation, we are likely to overstate the incomes of all Greatest Generation members (most of whom reached age 36–40 before our data sample begins in 1963) and thus understate income growth from the Greatest Generation to the Silent Generation. And because we only observe the oldest Millennials, we are likely to understate the incomes of all Millennials (most of whom will reach age 36–40 after our data sample ends in 2022) and thus understate income growth from Generation X to Millennials. In Section 7 we show the robustness of our results when adjusting for our incomplete coverage of Millennials at age 36–40 in our sample.

3. Intergenerational Progress

We begin by comparing income growth across five generations at our focal age range of 36–40 years old. Table 1 reports the percent increase in income for each generation relative to the immediately preceding generation. We use the couple and the household sharing units. Panel A reports growth in market (i.e., pre-tax, pre-transfer) income, whereas Panel B reports growth in post-tax, post-transfer income.

Focusing first on market income in Panel A, there are two notable takeaways that apply for both the couple and household sharing units. The first is that intergenerational progress has clearly slowed since the Baby Boom generation, although it remains positive. But second, despite the perception that slowing intergenerational progress is a recent phenomenon, the substantial slowdown did not start with Millennials. It began a generation earlier with Generation X. Intergenerational progress actually accelerated slightly for Millennials, although certainly not approaching the pace observed for the Baby Boom generation.

Looking at the patterns for median household market income by generation, the median income of Baby Boomers in their late-30s was 31 percent above that for similarly aged adults in the

Silent Generation. Progress slowed substantially for Generation X—their incomes increased by 10 percent relative to Baby Boomers—and then ticked up slightly for Millennials whose incomes rose by 14 percent relative to Generation X. This slowdown in household incomes across generations is more pronounced than that seen for couple-level incomes, which reflects the slowing of the decline in household size. A substantial decline in household size for Baby Boomers served to increase the growth rate of their household equivalized income, whereas a negligible decline in household size for Generation X and Millennials did little to boost their growth rates.[17]

Although market income is an important indicator of progress, it does not reflect the full set of resources that individuals have available for consumption.[18] In Panel B, we therefore expand the income definition to a post-fiscal measure, after taxes and transfers (excluding health insurance).

Consistent with the increase in transfers and the decrease in tax rates for most adults over the past several decades, the slowdown in intergenerational progress is softened when using these broader measures. The growth rate for post-tax, post-transfer median income was similar for the Millennial, Generation X, and Baby Boom generations if looking at couple level incomes. For each of the three generations, incomes of people in their late-30s increased between 15 and 19 percent relative to similarly aged adults in the prior generation. Again reflecting changes in household size, there is a greater slowdown in household income growth than was observed when looking at the equal-split incomes of couples.

It is possible that the patterns of intergenerational progress depend on where in the income distribution we focus. Hence, in Table 2 we consider the progress for those lower in the distribution at the 25th percentile and in Table 3 we consider the 75th percentile. In the Appendix (Appendix Tables A1 and A2) we show the 10th and 90th percentiles.

[17] Baby Boomers aged 36-40 experienced an 11.4 percent decline in average household size relative to Silent Generation members of the same age, Generation X members aged 36-40 experienced a 0.3 percent decline in average household size relative to Baby Boomers of the same age, and Millennials aged 36-40 experienced a 1.1 percent decline in average household size relative to Generation X members of the same age, based on an arithmetic average of household sizes over all years in which a given generation was aged 36-40 (Authors' calculations; Census Bureau 2022).

[18] Market income should also not be interpreted as the incomes that individuals would receive in the absence of government interventions. Because individuals change their labor market decisions and businesses adjust their practices in response to incentives, people's market incomes may be more or less that what we observe if these programs did not exist. Additionally, some government interventions, such as minimum wages, affect individuals' market earnings directly.

The broad conclusions are similar at these percentiles to those for the median—intergenerational progress has generally remained positive even though it has slowed relative to earlier generations. Yet, these findings are indicative of inequality trends over the past half-century. Looking at Generation X, specifically, those at the 25th percentile of the distribution had almost no intergenerational progress in market incomes (at either the household or couple sharing unit level) relative to Baby Boomers whereas those at the 75th percentile saw growth in market incomes of around 16 to 17 percent. Nevertheless, once accounting for taxes and transfers, we again see growth in 25th percentile incomes for those in Generation X. For Millennials, income growth accelerated at the 25th percentile, while modestly continuing its slowdown at the 75th percentile, for each income and sharing unit definition. This acceleration for Millennials at the 25th percentile was particularly pronounced for market income—at the household sharing unit level, market income grew by 13 percent for Millennials compared to just 1 percent for Generation X.

We can also compare generations across all ages, rather than solely the focal age range of 36–40. Figure 2 (market income) and Figure 3 (post-tax, post-transfer income) show the median income of each generation at each individual age.

Looking first at the incomes of individuals and couples (Panel A of Figures 2 and 3), we see that the patterns observed for those aged 36–40 described above are broadly consistent throughout the observable life-course. Among those in their late 20s or older, each generation is doing better than the previous generation, although improvements are more modest and came slightly later for Generation X and Millennials than was the case for earlier generations. This is true using each of the two income definitions. It will, however, be important to continue to monitor the age-income profile of Millennials in future years to see if the income growth they began to establish in their mid-30s is maintained as they continue to age.

In Panel B of Figures 2 and 3, we switch to using a household income definition. At the household level, intergenerational improvements in income are even clearer at all age ranges, including young adulthood. This is consistent with individuals increasingly living with and relying on their parents well into their 20s, although improvements from relying on parental resources do not reflect the same type of financial progress as improvements from one's own

income.[19] As shown in Appendix Figure A1, the share of each generation who were dependent on their parents in their 20s and 30s—defined as living in a household in which their parents or their spouse's parents received over half of the household's income—has risen with each generation. The share of a generation's members who were dependent on their parents fell below 10 percent for the first time by age 26 for Baby Boomers, by age 28 for Generation X, and by age 31 for Millennials. Despite their delay in achieving independence from their parents, Millennials saw their household incomes continue to rise well into their 30s. This indicates that Millennials were able to achieve a higher financial standard of living than previous generations by sharing resources in their 20s (perhaps while continuing their education) and then continued to maintain this higher standard of living when setting off on their own in their 30s.

4. Changes in Work Hours

Work behavior has changed dramatically over the time period we study (1963–2022), especially due to the rise in female labor force participation until the turn of the millennium. Differences in intergenerational growth rates of work hours—on the extensive and intensive margin—by individuals and their spouses could affect the income growth estimates we reported in the previous section.

Figure 4 reports the labor force participation rate of prime age adults (aged 25 to 54) from 1963 to 2022. The dashed black lines indicate the mean labor force participation rate of all prime age adults (not only the adults who were actually members of the generation) during the time period in which each generation had members aged 36–40. Prime age labor force participation rose from 70 percent when the Greatest Generation was observed in their late 30s, to 75 percent when the Silent Generation was in their late 30s, and further to 83 percent when Baby Boomers were in their late 30s. Prime age labor force participation then decreased slightly to 82 percent when Generation X and Millennials were in their late 30s. This figure makes clear that the structural labor market trends over the past six decades served to boost work hours for the Silent Generation and Baby Boomers, before completely stalling for Generation X and Millennials.

[19] According to the 2019 SHED, nearly half of adults ages 22 to 24 lived with a parent, as did over one-fourth of 25 to 29 year olds (Canilang et al. 2020).

In Table 4, we report the hours worked by the median and mean member of each generation between the ages of 36 and 40. We add the hours worked among both partners in a couple, and we do not condition on work participation for inclusion in the sample.[20] At the median, the Silent Generation worked 27 percent more hours and Baby Boomers worked 32 percent more hours than the previous generation. Growth in work hours almost completely stalls for the younger generations, with Generation X working 1 percent more hours and Millennials working 4 percent more hours than the previous generation.[21] Intergenerational growth rates in mean hours portray a consistent picture, with mean work hours growing by 14 percent for both the Silent Generation and Baby Boomers, then falling to -2 percent for Generation X and 0 percent for Millennials.[22]

We next quantify the extent to which the higher growth rates in work hours by the Silent Generation and Baby Boomers explains their higher rates of intergenerational income growth. We do so by calculating how market income would have grown for each generation had their work hours not changed relative to the previous generation. We focus on market income because taxes and transfers are directly linked to work through earnings, making it difficult to determine how taxes and transfers would change if work hours had counterfactually matched the work hours of the previous generation. In order to hold work hours constant, we retain our focus on 36–40 year old members of each generation, calculate the mean hours worked by couples in the middle quintile of the market income distribution, and assume that couples in the middle quintile of the following generation worked the same number of hours on average—but at their actual hourly wage—for purposes of making pairwise comparisons. Thus, we calculate the percent change in mean market income of generation t, when holding work hours constant, as

[20] This approach does not affect the mean hours worked relative to calculating hours at the individual level, except when members of a couple differ in age. It can affect median hours, particularly as labor force participation rates change with the growth in two-earner couples.

[21] Appendix Figure A2 shows the mean hours of work for members of each generation for their prime working years (ages 25–54). These results are broadly consistent with Table 4, except that Generation X slightly exceeded the hours of work seen among Baby Boomers and Millennials in their late 20s before work hours equalized across the generations in their mid-30s.

[22] We focus on hours worked here, rather than the implied hourly wage since we do not observe hourly wages for those who are not working and can therefore only consider hourly wages among workers. However, the trend in wages among workers tells a consistent story to what we present here, as seen in Appendix Table A3. Among those in couples where at least one person works, the intergenerational growth in mean and median hourly wages (calculated as the couple's labor earnings divided by hours worked) was slower for the Baby Boom generation than for either Generation X or the Millennial generation.

$$\%\Delta m_t = \frac{w_t h_{t-1} + n_t}{w_{t-1} h_{t-1} + n_{t-1}} - 1 \quad (1)$$

where m_t is the mean market income, w_t is the mean hourly wage (weighted based on actual hours worked by each couple in the generation), h_t is mean work hours, and n_t is the mean non-labor income of generation t.[23] Note that the numerator multiplies the weighted average hourly wage rate of generation t by the mean work hours of generation $t-1$, allowing us to determine the mean market income of generation t if their mean hours worked had not changed relative to the previous generation. The implicit assumption is that the hours worked by each couple in the younger generation should be adjusted by the same proportion in this counterfactual scenario.[24]

Table 5 reports the extent to which changes in work hours affect intergenerational growth in the market income of couples, focusing on the mean of the middle quintile of each generation at age 36–40. The first row of Table 5 reports the actual intergenerational increases in market income, which differ only slightly from the median-based values reported in Table 1. The second row of Table 5 reports the percent increase in market income of each generation holding work hours constant, counterfactually assuming their mean work hours equaled the mean work hours of the previous generation as described by Equation (1). Holding work hours constant, intergenerational progress slowed from 14 percent for the Silent Generation to just 2 percent for Baby Boomers, before speeding up to 7 percent for Generation X and 10 percent for Millennials. The third row of Table 5 reports the percent increase in market income due to the change in work hours, i.e., the difference between the actual increase in market income and the increase in market income holding work hours constant. The rise in work hours did the most to boost the market incomes of the silent Generation and Baby Boomers, leading their market incomes to rise by 18 percent and 19 percent respectively, while only boosting the market income growth of Generation X and Millennials by about 1 percent each. The rise in work hours explains 56 percent of the market income growth for the Silent Generation and 90 percent for Baby Boomers, while explaining only 16 percent for Generation X and 6 percent for Millennials.

[23] We calculate the implied hourly wage for each individual or couple as their observed labor income divided by their observed work hours. Note that labor earnings represent at least 97 percent of market earnings for those ages 36 to 40 in each generation.

[24] See Appendix B where we show that (i) mean market income can be written as shown by the numerator in the first term of Equation (1), and (ii) Equation (1) implies that hours worked are adjusted proportionally for each couple, by the ratio of mean work hours of the older generation to mean work hours of the younger generation.

5. Intergenerational Progress by Education

Income growth across generations is also a reflection of the rising level of human capital investment. At our focal ages of 36–40, nearly half (47 percent) of Baby Boomers had a high school degree or less, whereas 27 percent had at least a bachelor's degree (Table 6). Among Millennials, just 33 percent had a high school degree or less while 43 percent had at least a bachelor's degree. Additionally, the cost of college has risen substantially in recent decades (National Center for Education Statistics 2022), increasing the cost of these educational investments. It is, therefore, possible that while incomes for Millennials in their late-30s are higher than that for any previous generation, the costs of their educational investments outweigh these gains.

We first explore this possibility by considering the intergenerational income growth for those with the same level of educational attainment. These results can be seen in Table 7 and Figure 5. For those with an associate degree or less in their late-30s, incomes did rise from one generation to the next although the gains were relatively small for Generation X. Additionally, we note that when looking at the entire lifespan in Figure 5, members of Generation X in their 40s with a high school degree or less have lower incomes than their Baby Boomer counterparts of the same age and the same educational attainment.

Among those with at least a bachelor's degree, rates of income growth across generations are higher, although growth has still slowed.[25] Millennials with a bachelor's degree, but no graduate education, earned 10 percent more than similarly educated members of Generation X in their late-30s. Yet this is far less income progress than the 17 percent growth in incomes that Baby Boomers with a bachelor's degree experienced relative to the Silent generation.

In dollar terms, Millennials aged 36–40 with a bachelor's degree had equal-split couple incomes that were $4,600 higher than did equivalently aged members of Generation X.[26] Members of

[25] Compositional changes in who attends college will, admittedly, affect these comparisons. As more students attend college, this can decrease the earnings growth of the "high school degree or less" group, by shifting higher earners into the "some college or more" groups. But if these additional enrollees also have lower earnings potential than other college attendees, it can also slow the growth of the Bachelor's degree or more group.

[26] Couple income is used here to focus on the individual's own earnings rather than support from others in the household. Additionally, since we use an equal split for couple income, the dollar values can be directly compared to the costs of education, which cannot be done with size-adjusted incomes. When using size-adjusted household

Generation X with a bachelor's degree had size-adjusted household incomes that were $6,700 above that of Baby Boomers. Zooming out, over the 33-year period for each individual from age 25 to age 57—the oldest age at which we can observe members of Generation X—the median size-adjusted household-incomes of Generation X with a bachelor's degree exceeded that of Baby Boomers with a Bachelor's degree by $198,000.

In 1975–1976, when a Baby Boomer born in the middle of the generation turned 21, the average tuition, fees, room, and board in the United States cost $7,824 (in 2019 dollars), as reported in Table 8. This compares to an average cost of $10,811 when a member of Generation X in the middle of their generation turned 21. Hence, for a four-year education, someone in the middle of the Generation X cohort would spend approximately $12,000 more than someone in the middle of the Baby Boomer generation. This represents just 6 percent of the $198,000 33-year income gain for Generation X over Baby Boomers through age 57. While we do not yet observe Millennials above the age of 41 in our dataset to have a sense of their more complete lifetime incomes, the higher annual incomes of Millennials suggests that their income gains over Generation X will also far outweigh their higher educational investments. The four-year educational cost for Millennials exceeds that of Generation X by about $38,000. This is equivalent to about eight times the $4,600 one-year income gap between Millennials and Generation X with a Bachelor's degree in their late-30s. Additionally, despite having many working years left, between ages 25 and 41 alone the median income of Millennials exceeded that for Generation X by just over $60,000—more than 50 percent above the increase in education costs between these generations.

Nevertheless, young adults may also not feel the benefits of these gains early in their career, due to the timing of student loan repayments. A $38,000 student loan at 6% interest with a typical 10-year repayment term would require annual payments of $5,000.[27] Looking at Figure 5, from ages 25–29 the intergenerational couple-level income gains were smaller for those with a

incomes, the results are qualitatively similar except that Millennials in their 20s had greater improvements over previous generations that are more likely to exceed increases in education costs.

[27] We use $38,000 here to reflect the increase in the sticker price of college relative to prior generations. However, student loan debt is generally far lower. Based on the Survey of Consumer Finances, the median student loan debt for those with outstanding balances in 2019 when a person born in the middle of the Millennial generation turned 30 was $25,500. This is up from $13,300 in 2001 when a person born in the middle of Generation X turned 30 (Board of Governors of the Federal Reserve System 2023; Authors' calculations).

Bachelor's degree—just $2,600 per year for Millennials relative to Generation X. This can contribute to the feeling of generational stagnation for those with student loans, even if there is likely to be progress over their lifetime after the completion of student loan repayments.

We also note that this comparison of sticker price of college over time likely overstates the challenge of making up the increased educational cost. This is because the rise in financial aid over this period mitigated the rising sticker price of college. Between 1990 and 2010, real annual financial aid per full time equivalent undergraduate student increased by almost $11,000, with about $6,500 of that increase due to grants rather than loans and work-study programs and which over a four-year period would total about $26,000, over two thirds of the college cost differential for Millennials versus Generation X (Dynarski, Page, and Scott-Clayton 2022; authors' calculations). Hence, while the increase in educational costs could partially offset the intergenerational income gains and fully offset them if only looking at income early in adulthood, the higher cost reflects a relatively small share of the lifetime intergenerational progress for those who complete a degree.

6. Intergenerational Progress by Race

Intergenerational progress may also look different across races and ethnicities given the unique challenges and opportunities faced depending on one's race and ethnicity. Changes to the CPS ASEC race and ethnicity classifications preclude a full analysis of racial and ethnic trends in intergenerational progress since we use data back to the early 1960s. While we would prefer to be able to also examine other groups such as Asians, Native Americans, and those of Hispanic ethnicity, we are at least able to compare the intergenerational progress for Black Americans to nonblack Americans over our entire time period.

Consistent with that seen for the population as a whole, intergenerational income progress in their late-30s has been positive for both Black and nonblack adults for each of the past four generations (Table 9 and Figure 6). However, we also observe that there has been a greater slowdown in intergenerational progress for Black Americans than is seen for nonblack Americans. Black Baby Boomers saw household (post-tax, post-transfer) incomes that were 36 percent above Black members of the Silent generation at the same age. The intergenerational income growth for Black Millennials was 16 percentage points lower (20 percent growth across

generations). Among nonblack adults, there was a smaller 9 percentage point slowdown in household income growth rates between these two generations (27 percent income growth for Baby Boomers and 18 percent for Millennials). Consequently, while intergenerational income growth was far faster for Black adults in the Silent, Baby Boom, and X generations than was seen among non-Black adults in those generations, for the Millennial generation the intergenerational growth rates across racial groups are far more similar.

Given the faster intergenerational income growth for earlier generations of Black adults than nonblack adults, the gap in household incomes has declined across generations. Black members of the Greatest generation had size-adjusted household incomes that were 46 percent below that of nonblack members of that generation in their late 30s. In the Silent Generation the gap was 69 percent, in the Baby Boom generation the gap was 26 percent, and in the Millennial generation it was 23 percent. Yet the convergence of intergenerational income growth rates has meant that the progress at closing this racial income growth has slowed for the most recent generations. Between Generation X and the Millennial generation there was just a 1 percentage point reduction in this racial income gap.

7. Robustness of Results to Alternate Specifications

Incomplete generations

One limitation of the approach above is that the youngest generations are incomplete. In particular, the analysis of those aged 36–40 only captures the oldest Millennials. For example, the youngest Millennials (born in 1996) do not turn 40 until 2036 and thus are not observed in the sample. Because we only observe the earliest born Millennials, income growth may be biased when comparing Millennials to Generation X. It can also affect intergenerational progress in the earliest generations, depending on how the oldest members of each generation fared compared to younger members of the same generation. We therefore calculate income growth between each generation looking only at those members who were born in the first three years of the generation. This comparison is provided in Table 10.

When only including the oldest members of each cohort, intergenerational progress has shown a more pronounced slowdown. However, this is attributable to faster growth in earnings for the oldest Baby Boomers relative to the oldest members of the Silent generation than were observed

for those cohorts as a whole in Table 1. Among Millennials and Generation X, these results are consistent with those previously observed for the complete cohorts.

We further explore the effect of incomplete generations on our results by splitting each generation in half, a younger half and an older half. This mitigates the bias from observing partial generations because, compared to a full generation, the unobserved members of a half generation will be closer in age to the observed members. Analyzing half-generations also provides a more granular assessment of progress over time by smaller cohorts of Americans. In Figure 7 we subdivide each generation into those born in the first half of the generation and those born in the second half. Comparing the oldest half of each generation to each other (solid lines) we again see that each generation consistently improved over those at a similar age range of the generation before. The same is true when comparing the younger half of each generation (dashed lines) to the one before. As expected, however, since there is less time for progress when considering half-generations, if we look at each half-generation relative to the half-generation before (such as comparing older Generation X members to younger Baby Boomers), the growth is smaller with occasional ages where a generation is worse off than those a half-generation earlier.

Effects of including health insurance benefits with income

Thus far we have excluded health insurance from our income measure, due to substantial disagreement over whether and how to include it. Here we consider the implications of the inclusion of health insurance by adopting the full income measure from Burkhauser et al. (Forthcoming) that is the same post-tax, post-transfer income concept shown previously except that we add the full ex-ante market value of health insurance. Because the CPS lacks information on health insurance received outside of 1979-2014, we follow the imputation procedures from Burkhauser et al. (Forthcoming) to impute the market value of public health insurance and employer sponsored coverage in the years when it is unavailable. We also limit the analysis to years before 2020 due to a lack of health insurance data for 2020 through 2022.[28]

[28] For this analysis we also limit the focal ages to 36–38, which is the oldest age at which Millennials could be observed in 2019. To allow for a direct comparison of how health insurance affects results, rather than the change in years, in Table 8 we also show the post-tax, post-transfer income growth excluding health insurance—matching Panel B of Table 1 except for the change in end-year and age range.

For this analysis, we set the value of health insurance at its full ex-ante market value, which for public health insurance (Medicare and Medicaid) we take as the average cost of the government to provide coverage, and for employer sponsored coverage we take as the employer paid premium. For public health insurance, we calculate the average cost across separate risk classes based on age and disability status, determined separately for each state. Using the market value of health insurance captures the full value of insurance provided without suffering from the perverse consequence from instead relying on medical expenditures made on behalf of an individual, which would lead those who get sick and thus require more medical care to appear as having higher incomes. The market value approach is used by the Congressional Budget Office (CBO) for their household income distribution estimates (Congressional Budget Office 2012) and has been frequently adopted in recent academic research (Burkhauser, Larrimore, and Simon 2012; Meyer and Sullivan 2012; Armour, Burkhauser, and Larrimore 2013; Kaestner and Lubotsky 2016; Elwell, Corinth, and Burkhauser 2020; Larrimore et al. 2021).

When including the market value of health insurance (Panel B of Table 11, and Figure 8), intergenerational income growth remains uniformly positive. However, the inclusion of health insurance somewhat strengthens income growth for Generation X and weakens it for Millennials.

To understand the faster intergenerational income growth for Generation X and slightly slower growth for Millennials when including health insurance, it is helpful to consider the long-run trajectory of health insurance spending. Based on data from the Centers for Medicare and Medicaid Services (2023), national health expenditures per capita increased by 3.5 percent per year (in real terms using the PCE price index) from 1990, when someone born in the middle of the Baby Boom turned 35, to 2008, when someone born in the middle of Generation X turned 35. From 2008 through 2019, health expenditures per capita increased by a more modest 2.0 percent per year. Consequently, including the health insurance benefits that are paid by someone else (either an employer or the government) more rapidly increased the observed resources for Generation X than was the case for Millennials.[29]

[29] Increases in expenditures may result from medical advances, which result in real improvements in standards of living, or from cost increases, which do not. The increased costs of medical care will be included in the PCE price index, although the difficulty in separating these two components of the rise in medical expenses are an additional reason why we opt to include health insurance separately from other in-kind benefits.

Alternate inflation correction

In the previous sections we used the PCE price index to adjust for inflation. This is because the PCE price index is available historically and, like the Chained-CPI that is used by the Census Bureau for adjusting income series (Guzman and Kollar 2023), it captures changes in consumer purchasing decisions better than the CPI-U-RS. However, much of the prior research has used the CPI-U-RS as the inflation measure since this was used by the Census Bureau for their inflation adjustments until 2023. We therefore also consider how the choice of inflation measure affects our results.

Table 12 shows the intergenerational growth in median income using the CPI-U-RS to adjust for inflation alongside the results using the PCE price index (panels C and D). Since our earlier results used the PCE price index as the inflation measure, Panels C and D perfectly match Table 1 but are reproduced here to aid the comparison.

Because the CPI-U-RS is known as an upper-bound on inflation (U.S. Bureau of Labor Statistics 2019), using this measure to adjust for inflation causes intergenerational income growth to appear slower for each generation. In particular, it reduces the apparent market income growth for Generation X by at least half—from 8 percent growth for couples using the PCE to 2 percent using CPI and from 10 percent at the household level using PCE to 4 percent using CPI. Hence, the Generation X slowdown is more substantial when using CPI inflation, although growth did remain at least slightly positive for each of our primary income measures. We also continue to see a rebound in income growth from Generation X to Millennials when using CPI inflation.

Figure 9 shows the full age-income profiles for market income and post-tax, post-transfer income using the CPI-U-RS inflation measure. Consistent with that seen in Table 12, the growth across the age distribution is muted relative to that seen when using PCE inflation. Additionally, when looking at market income for couples, there was very little income growth from the Baby Boom Generation to Generation X, and growth for the Millennial generation only emerges starting in their mid-30s. Hence, while it is not accurate to say that the Millennial generation is doing worse than prior generations—at least with respect to annual income—when using the narrower sharing unit and especially when using market incomes the improvement is clearly muted when using CPI to adjust for inflation until people reached their mid-30s.

8. Discussion

We find that each of the past four generations of Americans was better off than the previous one. Millennials—the most recent generation we can assess in their late-30s—had a median household income at age 36–40 that was 18 percent higher than that of the previous generation at the same age. This rate of intergenerational progress was slower than that experienced for the Silent Generation (34 percent) and Baby Boomers (27 percent), but slightly faster than that experienced by Generation X (16 percent). The slower progress for younger generations is a result of their stalled growth in hours worked. Most of the intergenerational market income gains for the Silent Generation and Baby Boomers resulted from the fact that they worked substantially more hours than the previous generation, working 27 to 32 percent more hours at the median. Holding work hours fixed in each intergenerational comparison, Millennials have experienced a larger intergenerational market income gain than Generation X and Baby Boomers. Moreover, the Millennial growth rate will likely increase further as time passes, because we only capture the oldest Millennials in our comparisons and there will continue to be Millennials aged 36–40 until the year 2034 during which time incomes are likely to grow further.[30]

These optimistic results contradict a perception that Millennials are falling behind previous generations. One possible explanation relates to variation in growth rate trends across the income distribution. Household income among Millennials has grown at each part of the distribution, but the rate of growth has slowed for higher income Millennials while it has sped up for lower income Millennials. For the 25th percentile 36–40 year old, income growth relative to the previous generation was 69 percent (8 percentage points) faster for Millennials than Generation X, while for the 75th percentile 36-40 year old, growth was 6 percent (1 percentage point) slower for Millennials than Generation X. Higher income Millennials who compare themselves to higher income members of Generation X would accurately sense that intergenerational progress is slowing down for their socioeconomic group even though the growth rate remained positive.[31]

[30] The Congressional Budget Office projects that that real per capita personal income will grow by 17 percent over the next decade, 2023-2033 (Congressional Budget Office 2023; Authors' calculations).

[31] A related concept of the appropriate comparison group is trends by gender. As discussed by Twenge (2023), while women's earnings have risen across generations men's earnings have not. This can contribute to feelings of stagnation for men who are comparing themselves to men of earlier generations. When looking at couple-level and household-level incomes, intergenerational income growth is similar for men and women in their mid-30s (Appendix Table A4) since a majority of people in all generations are married at these ages, although changes in individual earnings power can still affect the feelings of stagnation.

This could especially be the case if they focus on salient markers of affordability like rising home prices and rents relative to incomes in expensive coastal cities. At the same time, our use of a general inflation measure accounts for rising prices of all items for the average consumer, so although the prices of some items have risen faster than overall inflation they are counterbalanced by the prices of other items whose price has grown more slowly.[32]

Another possible explanation for the perception that Millennials are falling behind is the increasing length of time they spend investing in their human capital and relying on others for support until reaching their 30s. Millennials in their late 30s were 7 percentage points more likely to have earned at least a Bachelor's degree than Generation X, and 4 percentage points more likely to earn a graduate degree. Perhaps as a result, Millennials' market income received only by themselves or their spouses is no higher than that of Generation X until around age 30, at which point Millennials begin to pull away. Additionally, student loan repayments in their 20s will offset some or all of the income gains for those who borrowed to attend college. By contrast, Generation X began to pull away from Baby Boomers around their mid-20s, and Baby Boomers began to pull away from the Silent Generation in their early 20s. Despite the longer time it takes for Millennials to surpass the previous generation in terms of their own market income, their post-tax, post-transfer income of their entire household (including the parents of "boomerang" children) exceeds that of Generation X from the beginning of adulthood. Yet most of the income boost in their 20s is a result of living in households with higher income individuals (i.e., their parents) rather than the effects of market income or transfers received by Millennials themselves. That Millennials' generational progress throughout their 20s is a result of being supported by others could contribute to a perception of stagnation.

As Millennials enter their 30s and 40s, we can rule out the possibility that paying back their higher student loans accumulated via increased educational investment will be large enough to outweigh their income gains at the median of the distribution. When comparing the intergenerational gains for those with a Bachelor's degree to the change in the cost of college, the rising educational expenditures are relatively small when compared to their increases in income. Millennials in their late-30s with a bachelor's degree had annual couple-level incomes

[32] Moreover, while the share of income spent on housing has risen over time, the share of disposable personal income spent on food in the United States fell from 17 percent in 1960 to 11 percent in 2022 (U.S. Department of Agriculture 2023).

that were $4,600 higher than Generation X and $11,300 higher than Baby Boomers. Before accounting for the increased generosity of financial aid, Millennials faced an average four-year college cost that was $38,000 higher than Generation X—representing about 8 years of Millennials' $4,600 higher annual mid-career income—and a college cost that was $50,000 higher than Baby Boomers—representing less than 5 years of Millennials' $11,300 higher mid-career annual income. These higher educational investment costs for Millennials are also further offset by the increasing generosity of financial aid. For example, student aid in the form of grants (excluding loans and work study programs) were on average $26,000 higher for Millennials than Generation X, cutting the college cost differential by two thirds such that it would take only 3 years for Millennials to make up the net college cost difference.

Despite the income growth from one generation to the next that we observe, there are also areas in which Millennials fell behind previous generations—in particular their homeownership rates. In 2022 (when the oldest Millennials were age 41) 61 percent of people ages 35–44 owned a home, down from 66 percent in 1989 (when the oldest Baby Boomers were age 43) (Federal Reserve Board 2023b). This is consistent with rising housing prices making it more difficult for young adults to purchase their first home. Yet, at the same time, the share of 35–44 year olds who hold stocks reached 64 percent in 2022, up from 39 percent in 1989 (Federal Reserve Board 2023b). Additionally, when looking at overall wealth holdings, Horpedahl (2021) found intergenerational wealth growth that is consistent with our increases in intergenerational incomes. Hence, while the types of asset holdings have shifted across generations, this shift does not appear to have prevented broader growth in wealth from one generation to the next.

Aside from comparing our results to popular perceptions of intergenerational progress, it is informative to compare our results to related research, especially Chetty et al. (2017) who find that rates of absolute mobility have slowed over time. They calculate in each year the share of adults aged 30 whose income exceeds that of their parents when their parents were around age 30. Whereas around 90 percent of 30-year olds born in the early 1940s had higher incomes than their parents at the same age, this was true for just over half of 30-year olds born in the early 1980s. This decline in absolute mobility is consistent with our finding of slowing intergenerational progress from the Silent Generation (born 1928–1945) through Generation X (born 1965–1980). But our results suggest that intergenerational progress is no longer slowing

and may instead be picking up again for Millennials in their late 30s. While Chetty et al. (2017) report trends in absolute mobility for 40-year old adults as a sensitivity check, they are only able to examine 40-year olds born through the early 1970s, several years before Millennials were born. That said, it is not necessarily the case that absolute mobility will move in tandem with outward shifts in the distribution of income over generations. Notably, Chetty et al. (2017) find that simply increasing economic growth without changing the proportion of resources allocated to households would do less to increase absolute mobility than allocating a greater share of existing resources to lower income households. But it remains possible that with more years of data absolute mobility trends will stop falling and begin to tick up, consistent with the intergenerational trends we find.

One caveat for our results is that we rely on survey data affected by misreporting of income. Underreporting has been documented for earnings (e.g., Bollinger et al. 2019), taxes (e.g., Meyer et al. 2020), and transfer programs (e.g., Meyer, Mok, and Sullivan 2015). While our focus on the median largely avoids the most pervasive problems with the growing underreporting of means tested transfers (Meyer, Mok, and Sullivan 2015), misreported earnings and other income sources along with inaccurate tax calculations could still bias our results. For example, Corinth, Meyer, and Wu (2022) find that between 1995 and 2016, the share of aggregate earnings reported in the CPS ASEC fell by 3 percentage points, the share of Unemployment Insurance fell by 27 percentage points, and the share of Earned Income Tax Credit dollars fell by 7 percentage points. Worsening underreporting of income would bias our estimates of intergenerational progress downward, especially for more recent generations. Thus, the intergenerational progress of Millennials likely compares more favorably to the intergenerational progress of preceding generations than we report.

Another caveat is that our conclusions include three years of data around the COVID-19 pandemic. The historic rise in unemployment in 2020 led to severe reductions in earnings for a substantial share of workers, while government policies including expanded and more generous Unemployment Insurance, three rounds of Economic Impact Payments (e.g., stimulus payments), and a temporary expansion of the Child Tax Credit increased post-tax incomes—which substantially reduced poverty rates over that period (Shrider and Creamer 2023). While many COVID-related government benefits ended by 2022, the pandemic recovery was also notably

progressive in its distribution (Larrimore, Mortenson, and Splinter 2023b). These recent years of data do not appear to drive our results—we conducted similar analyses using data only through 2019 and found similar patterns. Nevertheless, it is possible that generational income patterns in the past several years may differ from that which we should expect in the future and it is possible that intergenerational progress as the Millennial generation ages increases or declines from that seen so far.

9. Conclusion

Using data from 1963 through 2022, we evaluate whether younger generations are seeing slower income growth relative to the generations that came before. We confirm that there has been a slowdown in intergenerational progress, except for Millennials who saw their incomes grow slightly faster than Generation X but still more slowly than Baby Boomers and the Silent Generation. Intergenerational progress has remained positive for all generations. Positive growth has been maintained for Generation X and Millennials in spite of their stalled growth in hours worked.

We investigate the role of two potential explanations for perceptions of worsening outcomes for Millennials despite their observed income growth relative to previous generations. First, we find that the higher household incomes of Millennials relative to Generation X, through their 20s, is a result of dependence on their parents rather than a rise in their own market incomes. By age 31, however, less than 10 percent of Millennials are still dependent on their parents and by then their own market incomes exceed that of previous generations. Second, we find that the rising cost of college offsets only a small portion of the income gains achieved by Millennials, especially when accounting for the growing generosity of financial aid.

Our results focus on aggregate comparisons across generations, as opposed to direct comparisons between individuals and their own parents. Each type of comparison provides important information about absolute improvements in economic wellbeing across generations. Future research should continue to consider alternative measures of wellbeing for evaluating intergenerational progress, including consumption, wealth and social wellbeing (e.g., Fisher and Johnson 2022). Results on changes in wellbeing over time, including the intergenerational

progress made in rising incomes, should inform discussions about how best to promote wellbeing in the future.

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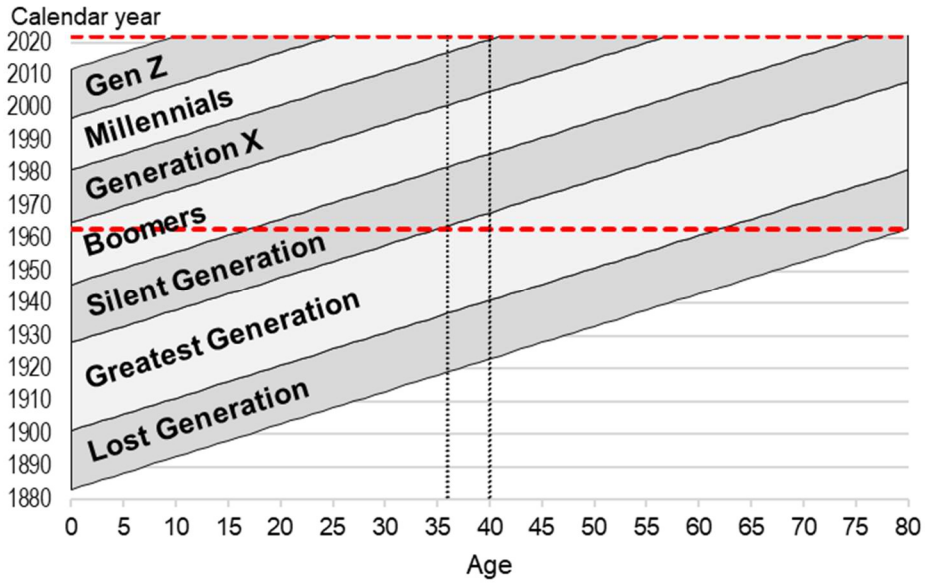
Figures and Tables

Figure 1. Calendar years in which generation members of given age are observed, age 0 to 80



Note: Dashed red lines indicate the lower bound (1963) and upper bound (2022) calendar years in our sample. Generations are defined according to Pew Research. The vertical dashed black lines at ages 36 and 40 indicate our focal age range that spans five generations, the Greatest Generation through Millennials, in our observed sample.
Source: Dimock (2019); Authors' Calculations

Figure 2. Median market income by age and generation, by sharing unit

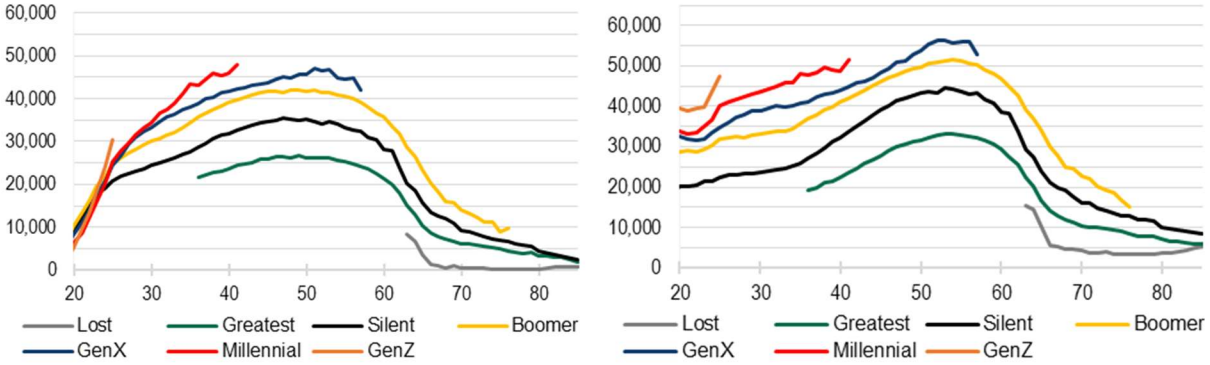


Figure 2a. Couple sharing unit **Figure 2b. Household sharing unit**

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Lost Generation (1883-1900), Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), Generation Z (1997-2012). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Figure 3. Median post-tax, post-transfer income excluding health insurance by age and generation, by sharing unit

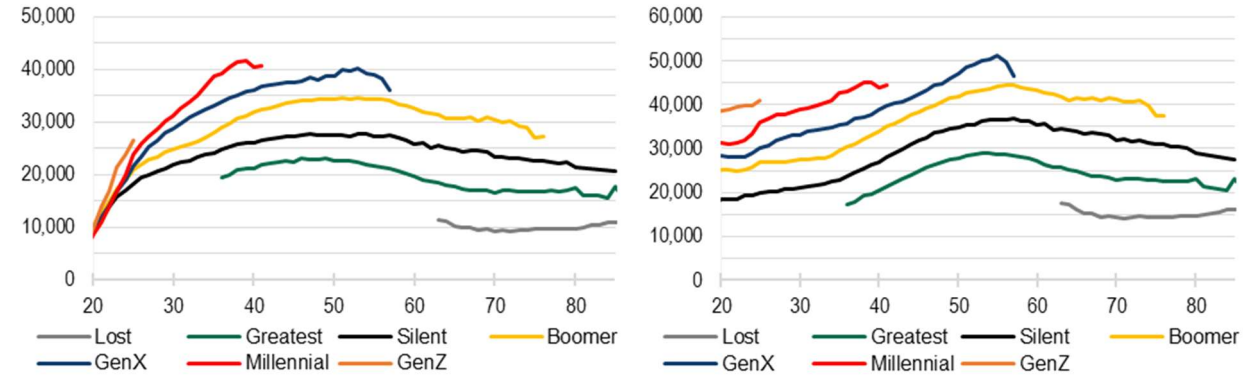
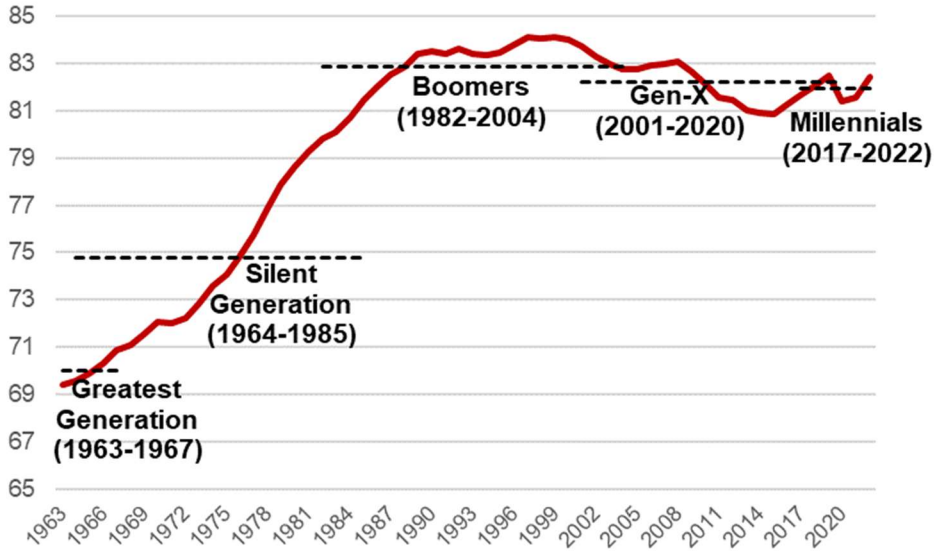


Figure 3a. Couple sharing unit **Figure 3b. Household sharing unit**

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Lost Generation (1883-1900), Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), Generation Z (1997-2012). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Figure 4. Labor force participation rate among adults aged 25-54, and mean when each generation aged 36-40, 1963-2022



Source: U.S. Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis; Authors' calculations
Notes: Red line indicates the prime age (25-54) labor force participation in the United States in each year. Dashed black lines span the period when a given generation's members were aged 36-40, and their level indicates the mean prime age labor force participation during those years. Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996).

Figure 5. Median post-tax, post-transfer couple income by age and generation, by educational attainment

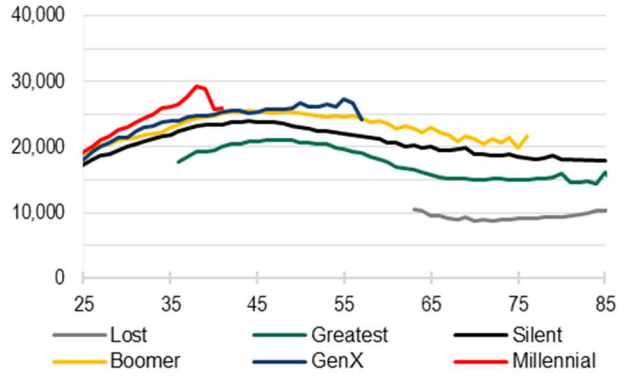


Figure 5a. High School Degree or Less

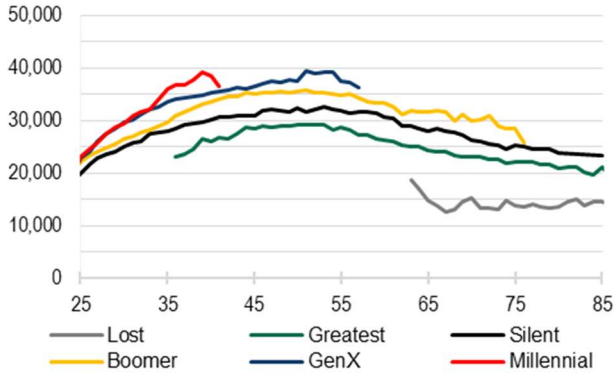


Figure 5b. Some College or Associate Degree

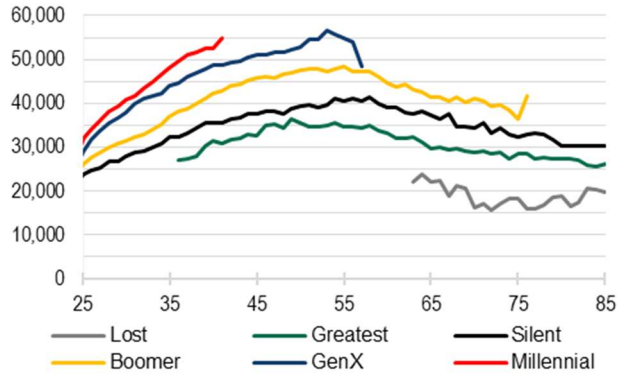


Figure 5c. Bachelor's Degree

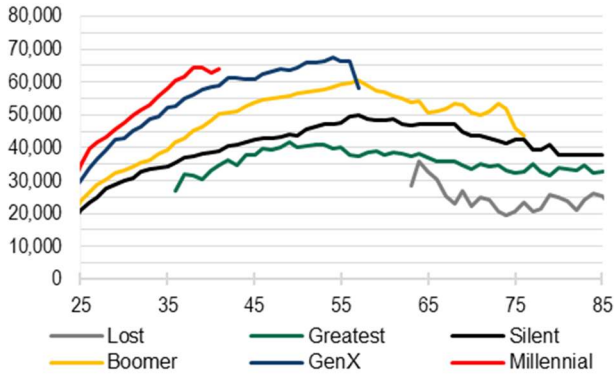


Figure 5d. Graduate Degree

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Lost Generation (1883-1900), Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Figure 6. Median post-tax, post-transfer income excluding health insurance by age and generation, by race and sharing unit

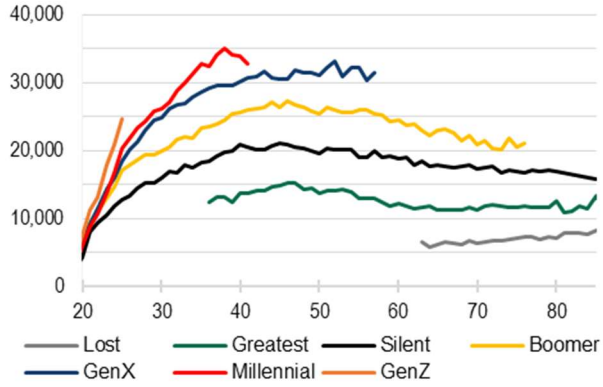


Figure 6a. Black adults, couple sharing unit

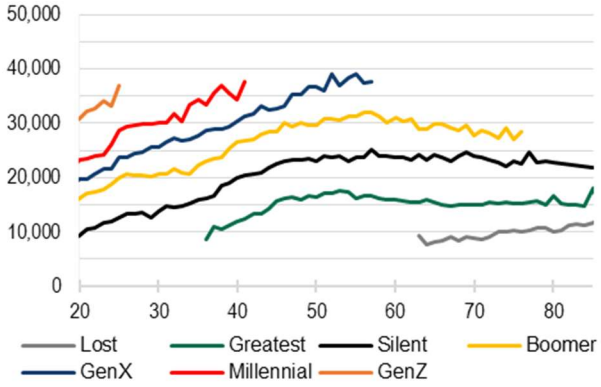


Figure 6b. Black adults, household sharing unit

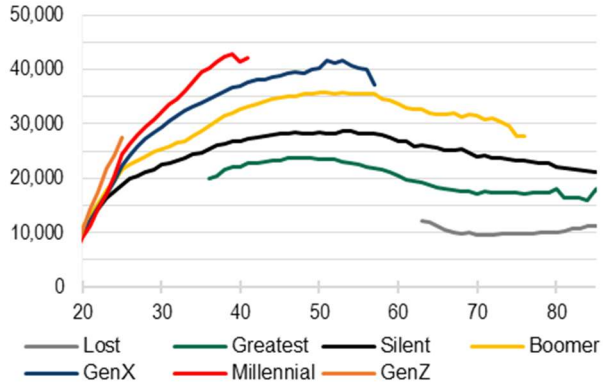


Figure 6c. Nonblack adults, couple sharing unit

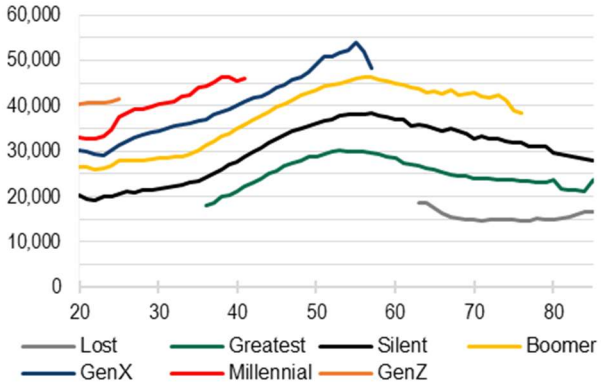
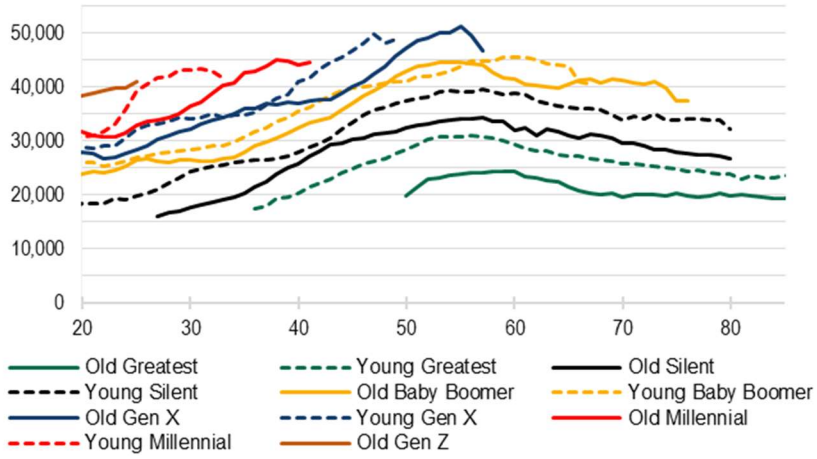


Figure 6d. Nonblack adults, household sharing unit

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Lost Generation (1883-1900), Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), Generation Z (1997-2012). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Figure 7. Median post-tax, post-transfer income by age and half generation, household sharing unit



Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Household income refers to total income received by all members of household, divided by the square root of the household size. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index. Solid lines indicate the older members of each generation (those born prior to or on the median year of the generation's birth year range), and dashed lines indicate the younger members of each generation (those born after the median year of the generation's birth year range).

Figure 8. Median post-tax, post-transfer income including health insurance by age and generation, by sharing unit

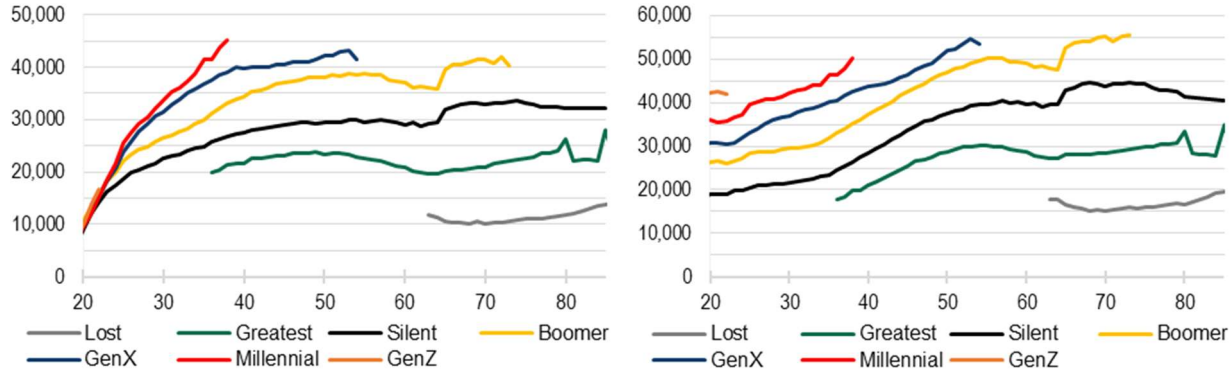


Figure 8a. Couple sharing unit

Figure 8b. Household sharing unit

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2020; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and includes the market value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Figure 9. Median income excluding health insurance by age and generation using CPI-U-RS inflation

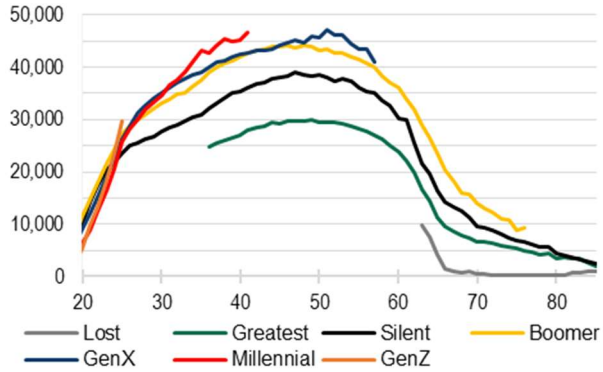


Figure 9a. Market income, couple sharing unit

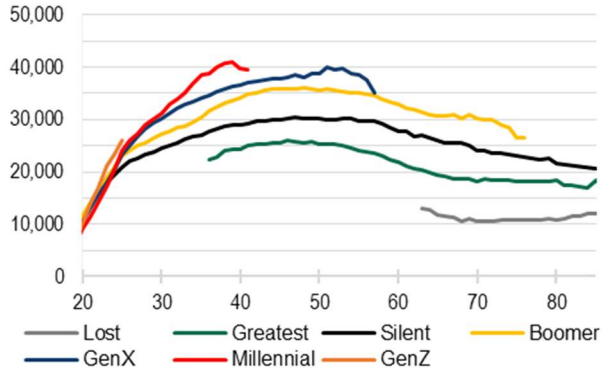


Figure 9b. Post-tax post-transfer income, couple sharing unit

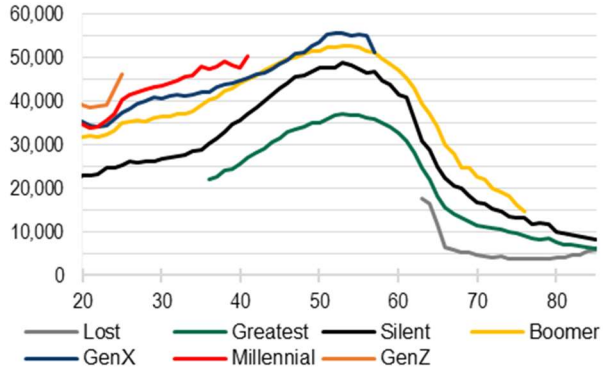


Figure 9c. Market income, household sharing unit

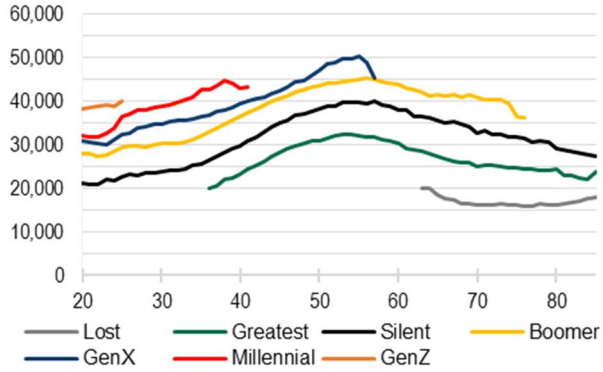


Figure 9d. Post-tax post-transfer income, household sharing unit

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Lost Generation (1883-1900), Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), Generation Z (1997-2012). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and includes the market value of health insurance. All income values are converted to real dollars using the Consumer Price Index retroactive series.

Table 1. Percent increase in median income from previous generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Market income					
Couple	—	34.7	23.0	8.0	11.1
Household	—	43.3	31.1	9.8	13.7
Panel B. Post-tax, post-transfer income (excluding health insurance)					
Couple	—	25.1	18.8	15.0	15.7
Household	—	34.0	26.8	16.1	18.4

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table 2. Percent increase in 25th percentile income from previous generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Market Income					
Couple	—	27.8	10.3	-1.2	11.4
Household	—	39.3	20.5	0.9	12.6
Panel B. Post-tax, post-transfer income (excluding health insurance)					
Couple	—	23.7	10.0	10.5	16.5
Household	—	32.3	20.5	11.7	19.8

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table 3. Percent increase in 75th percentile income from previous generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Market income					
Couple	—	38.9	28.9	15.8	14.0
Household	—	47.1	35.8	17.2	16.7
Panel B. Post-tax, post-transfer income (excluding health insurance)					
Couple	—	23.9	23.2	21.4	16.5
Household	—	33.2	30.1	21.5	20.2

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table 4. Hours of paid work per year by individual and spouse, by generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Hours per year					
Median	1,116	1,414	1,874	1,894	1,968
Mean	1,298	1,474	1,685	1,654	1,655
Panel B. Percent change in hours per year from previous generation					
Median	—	27%	32%	1%	4%
Mean	—	14%	14%	-2%	0%

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Authors' calculations
Notes: Hours represent the total number of paid hours worked per year by the member of the generation aged 36-40 and their spouse, if any. Inclusion in the sample is not conditioned on participation in work. Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996).

Table 5. Percent change in market income under various work hour scenarios for the mean of the middle quintile of the market income distribution, couple sharing unit, by generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Actual	—	32.3%	21.6%	8.1%	10.8%
Holding work hours constant	—	14.0%	2.2%	6.8%	10.0%
Due to work hours change	—	18.2%	19.4%	1.3%	0.7%

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Authors' calculations
Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index. Income values represent the mean value within the middle quintile of the market income distribution. Market income holding work hours constant counterfactually assumes the younger generation worked the same mean number of hours as the older generation in each pairwise comparison of generations. Market income due to work hours change is the difference between the actual market income growth rate and market income growth rate holding work hours constant.

Table 6. Educational attainment shares by generation at ages 36–40

	High-school degree or less	Some college / Assoc. degree	Bachelor's degree	Graduate degree
Greatest	76.2	10.2	8.7	4.9
Lost	68.0	14.1	9.7	8.2
Boomer	47.3	25.8	17.3	9.7
Gen-X	38.1	26.4	22.6	12.9
Millennial	32.5	24.7	26.1	16.6

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Authors' calculations
Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Values represent the share of each generation's members who had a given level of educational attainment, pooling across all members aged 36-40 including each year in which each individual was in this age range.

Table 7. Percent increase in median post-tax, post-transfer income from previous generation at ages 36–40, by educational attainment

	Greatest	Silent	Boomer	Gen-X	Millennials
Couple sharing unit					
High-school or less	—	22.1	5.2	1.8	12.2
Some College or Assoc. degree	—	18.6	10.1	7.1	9.0
Bachelor's degree	—	19.0	16.9	16.8	9.9
Graduate degree	—	21.4	20.4	24.5	12.1
Household sharing unit					
High-school or less	—	30.8	14.1	3.8	17.1
Some College or Assoc. degree	—	29.0	16.7	7.0	12.9
Bachelor's degree	—	25.6	24.5	17.8	12.8
Graduate degree	—	30.3	27.4	23.7	15.4

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table 8. Average tuition, fees, room, and board in the year that the median aged individual of each cohort turned 21

	Tuition, fees, room and board
Baby Boomer (1975-1976)	$7,824
Generation-X (1988-1989)	$10,811
Millennial (2009-2010)	$20,217

Source: National Center for Education Statistics (2022)
Notes: Academic years shown represent the middle year in which members of the given generation turned age 21. Values represent the total cost of tuition, fees, room and board in a given academic year, before financial aid is applied. Values are converted in 2019 dollars using the Personal Consumption Expenditure Price Index.

Table 9. Percent increase in median post-tax post-transfer income from previous generation at ages 36-40, by race

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Black					
Couple	—	52.1	24.8	20.8	14.3
Household	—	68.8	36.0	19.4	20.2
Panel B. Nonblack					
Couple	—	23.8	18.9	15.0	15.8
Household	—	33.0	27.2	16.4	18.0

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table 10. Percent increase in median income from previous generation at ages 36–40 among the oldest 3 years in each generation only

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Market income					
Couple	—	—	39.2	10.7	10.7
Household	—	—	51.4	13.7	13.9
Panel B. Post-tax, post-transfer income (excluding health insurance)					
Couple	—	—	23.3	21.3	16.7
Household	—	—	35.2	22.6	20.2

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Only individuals born in the 3 final years of each generation are included. Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table 11. Percent increase in median post-tax, post-transfer income from previous generation at ages 36–38, with and without health insurance

	Greatest	Silent	Boomer	Gen-X	Millennial
Panel A. Post-tax, post-transfer income (excluding health insurance)					
Couple	—	26.4	17.6	15.7	13.5
Household	—	34.4	27.6	17.1	16.3
Panel B. Post-tax, post-transfer income (including health insurance)					
Couple	—	28.1	22.3	19.1	13.3
Household		36.2	33.6	22.2	15.7

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2020; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and includes the market value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table 12. Percent increase in median income from previous generation at ages 36–40 using alternative measures of inflation

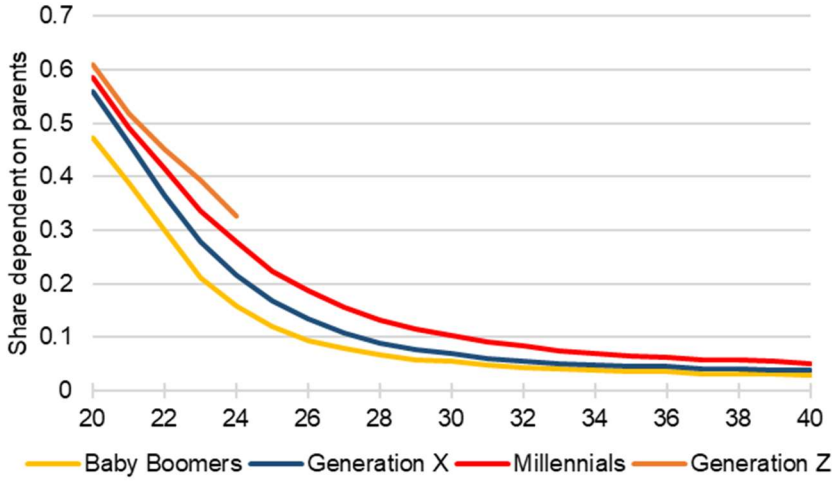
	Greatest	Silent	Boomer	Gen-X	Millennials
*Panel A. Market income using **CPI-U-RS***					
Couple	—	30.8	19.7	1.8	7.6
Household	—	38.9	27.7	3.5	10.2
*Panel B. Post-tax, post-transfer income (excluding health insurance) using **CPI-U-RS***					
Couple	—	21.1	15.8	8.5	12.0
Household	—	29.9	23.5	9.6	14.5
*Panel C. Market income using **PCE***					
Couple	—	34.7	23.0	8.0	11.1
Household	—	43.3	31.1	9.8	13.7
*Panel D. Post-tax, post-transfer income (excluding health insurance) using **PCE***					
Couple	—	25.1	18.8	15.0	15.7
Household	—	34.0	26.8	16.1	18.4

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

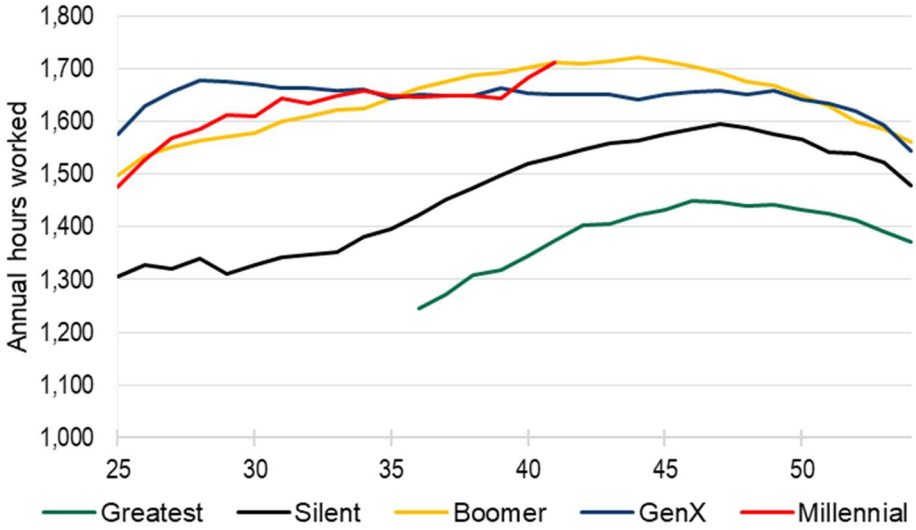
Appendix A. Appendix Figures and Tables

Figure A1. Share of Generation's Members Dependent on Their Parents or Spouse's Parents, by Age



Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations
Notes: Generations are defined by the following birth years: Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), Generation Z (1997–2012). An individual is defined as dependent if he or she lives in a household in which his or her parents, or his or her spouse's parents, receive more than 50 percent of the household's post-tax, post-transfer income. Post-tax, post transfer income includes market income and all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance.

Figure A2. Mean Work Hours by Age and Generation



Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Authors' calculations
Notes: Generations are defined by the following birth years: Lost Generation (1883-1900), Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), Generation Z (1997-2012). Work hours for married couples refers to total work hours of by both members of the married couple divided by two, and for unmarried individuals refers to total work hours by the individual. Work hours are calculated based on responses to the number of hours of work per week and number of weeks worked in the past year. Inclusion in the sample is not conditioned on participation in work.

Table A1. Percent increase in 10th percentile income from previous generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Market Income					
Couple	—	33.2	-14.6	-11.5	7.5
Household	—	40.4	6.8	-2.1	13.7
Panel B. Post-tax, post-transfer income (excluding health insurance)					
Couple	—	28.4	2.6	6.6	17.4
Household	—	42.2	17.6	15.9	20.7

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table A2. Percent increase in 90th percentile income from previous generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Market income					
Couple	—	42.1	33.9	22.5	16.9
Household	—	50.5	40.6	22.8	18.6
Panel B. Post-tax, post-transfer income (excluding health insurance)					
Couple	—	22.7	28.9	25.9	18.6
Household	—	31.0	34.8	26.0	21.6

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Market income includes all sources of income not received from government sources, does not adjust for taxes, and excludes the value of health insurance. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Table A3. Implied hourly wage for individual and spouse, among workers by generation at ages 36–40

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Implied hourly wage (in 2019 dollars)					
Median	17.35	20.38	21.17	23.31	25.74
Mean	21.76	25.06	25.95	31.09	34.60
Panel B. Percent change in implied hourly wage from previous generation					
Median	—	18%	4%	10%	10%
Mean	—	15%	4%	20%	11%

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Authors' calculations
Notes: Hourly wage represents the total labor earnings for the individual and spouse, if any, divided by the total number of paid hours worked per year by the member of the generation aged 36-40 and their spouse, if any. Hourly wages are expressed in real 2019 dollars, using the Personal Consumption Expenditures price index to adjust for inflation. Inclusion in the sample requires that either the individual or their spouse worked. Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996).

Table A4. Percent increase in median post-tax post-transfer income from previous generation at ages 36-40, by sex

	Greatest	Silent	Boomer	Gen-X	Millennials
Panel A. Male					
Couple	—	24.1	16.8	13.6	15.0
Household	—	34.9	26.6	16.9	17.4
Panel B. Female					
Couple	—	26.7	20.7	16.4	16.4
Household	—	33.9	27.1	14.8	19.9

Source: Current Population Survey Annual Social and Economic Supplement, 1964–2023; Burkhauser et al. (Forthcoming); Authors' calculations

Notes: Generations are defined by the following birth years: Greatest Generation (1901–1927), Silent Generation (1928–1945), Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996). Couple income for married couples refers to total income received by both members of the married couple divided by two, and for unmarried individuals refers to total income received by the individual. Household income refers to total income received by all members of household, divided by the square root of the household size. Post-tax, post transfer income includes market income as well as all non-medical cash and in-kind transfers, adjusts for taxes, and excludes the value of health insurance. All income values are converted to real dollars using the Personal Consumption Expenditure price index.

Appendix B. Approach for holding work hours constant across generations

We first show that the mean market income of a couple can be written as the product of (i) the weighted mean of the hourly wage, using hours worked as the weights, and (ii) hours worked, plus (iii) mean non-labor income.

$$
\begin{aligned}
\overline{m_t} &= \frac{1}{N_t}\sum_{i=1}^{N_t} m_{i,t} \\
&= \frac{1}{N_t}\sum_{i=1}^{N_t} w_{i,t}h_{i,t}+n_{i,t} \\
&= \frac{1}{N_t}\sum_{i=1}^{N_t} w_{i,t}h_{i,t} + \overline{n_t} \\
&= \frac{1}{N_t}\sum_{i=1}^{N_t} w_{i,t}h_{i,t}\left(\frac{\sum_{i=1}^{N_t} h_{i,t}}{\sum_{i=1}^{N} h_{i,t}}\right) + \overline{n_t} \\
&= \left(\sum_{i=1}^{N_t} \frac{h_{i,t}}{\sum_{i=1}^{N} h_{i,t}} w_{i,t}\right)\frac{1}{N_t}\sum_{i=1}^{N_t} h_{i,t} + \overline{n_t} \\
&= \left(\sum_{i=1}^{N_t} \frac{h_{i,t}}{\sum_{i=1}^{N_t} h_{i,t}} w_{i,t}\right)\overline{h_t} + \overline{n_t}
\end{aligned}
$$

where $m_{i,t}$ is the market income, $w_{i,t}$ is the hourly wage, $h_{i,t}$ is the hours worked, and $n_{i,t}$ is the non-labor income of individual i in generation t, and N_t is the number of couples in generation t (or in our case the number of couples in the middle quintile of the market income distribution).

We next show that replacing the mean hours of generation t with the mean hours of generation $t-1$ in Equation (1) adjusts the hours of each couple proportionally, by the ratio of mean hours of generation $t-1$ to mean hours of generation t.

$$
\begin{aligned}
Adjusted\ \overline{m_t} &= \left(\sum_{i=1}^{N_t} \frac{h_{i,t}}{\sum_{i=1}^{N} h_{i,t}} w_{i,t}\right)\overline{h_{t-1}} + \overline{n_t} \\
&= \left(\sum_{i=1}^{N_t} \frac{h_{i,t}}{\sum_{i=1}^{N} h_{i,t}} w_{i,t}\right)\overline{h_t}\frac{\overline{h_{t-1}}}{\overline{h_t}} + \overline{n_t} \\
&= \left(\sum_{i=1}^{N_t} \frac{h_{i,t}}{\sum_{i=1}^{N} h_{i,t}} w_{i,t}\right)\left(\frac{1}{N}\sum_{i=1}^{N_t} h_{i,t}\right)\frac{\overline{h_{t-1}}}{\overline{h_t}} + \overline{n_t} \\
&= \frac{1}{N}\sum_{i=1}^{N_t} \frac{\overline{h_{t-1}}}{\overline{h_t}} h_{i,t}w_{i,t} + n_{i,t}
\end{aligned}
$$