PERCEPTION HAS ITS OWN REALITY: SUBJECTIVE VERSUS OBJECTIVE MEASURES OF ECONOMIC DISTRESS

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ABSTRACT

Widening economic inequality has heightened concerns about its potential health and social consequences, which may be affected by both objective and subjective aspects of inequality. Yet socioeconomic disparities are typically measured by objective criteria without considering subjective measures. Here we quantify widening socioeconomic disparities in perceived economic distress since the mid-1990s, determine the extent to which growing disparities in perceptions can be explained by changes in objective measures, and investigate whether there is a racial/ethnic differential in perceptions net of objective circumstances. Our results suggest that disparities in perceived financial strain and employment uncertainty widened even more than expected based on changes in objective conditions. That is, perceptions among those at lower socioeconomic levels diverged from objective measures more than among those at higher socioeconomic status. As predicted based on reference group theory, given the same objective economic and employment conditions, non-Latino whites reported *more* financial strain than minorities.

KEYWORDS: Socioeconomic disparities, economic distress, financial strain

INTRODUCTION

There is no doubt that economic inequality in the U.S. has increased over the last several decades (Piketty, Saez, and Zucm 2016, Congressional Budget Office 2013). Diminished labor market opportunities and the ensuing decline in (inflation-adjusted) economic fortunes for the least educated Americans have been blamed for initiating a cascade of consequences culminating in rising mortality related to drugs, alcohol, and suicide (Case and Deaton 2017, Case and Deaton 2015)—collectively referred to as "deaths of despair" (Khazan 2015, Case 2015, Monnat 2016). The health effects are evident in overall mortality as well: socioeconomic disparities in life expectancy have widened dramatically over this period (Chetty et al. 2016b, Bosworth, Burtless, and Zhang 2016), particularly among non-Latino whites (Olshansky et al. 2012, Sasson 2016). Beyond its effects on health, inequality[1] can have far-reaching consequences for society as a whole, for example, by compromising social trust and cohesion and jeopardizing the effectiveness of social institutions (Kawachi and Berkman 2000, Kawachi et al. 1997). Indeed, arguments related to growing inequality have been invoked to explain many of the worrisome trends not only in mortality, but in a broader range of health outcomes, as well as social and political phenomena.

Socioeconomic disparities are typically measured in terms of objective criteria such as education, income, wealth, and unemployment; few studies have incorporated subjective measures of economic distress, although there is a large literature on subjective social status (the "social ladder") and its effects on health (Ostrove, J., Nancy Adler, Miriam Kuppermann,et al 2000, Singh-Manoux, Adler, and Marmot 2003, Adler et al. 2000). Although both constructs are subjective in nature, perceived economic distress is based on the respondents' evaluations of their financial and employment circumstances, whereas the "social ladder" asks respondents how they would rank themselves relative to others. In this analysis, we focus only on perceived economic distress. In order to quantify socioeconomic disparities in our measures of *perceived* economic distress, we construct another measure that forms an essential part of our analysis. For this measure, which we refer to as relative socioeconomic status (relative SES), we use *objective* criteria (i.e., education, income, assets, and occupation) to assign a percentile rank denoting the respondent's position within the overall distribution. It is distinct from the "social ladder" in that the relative ranking is derived completely from objective criteria rather than from respondents' own evaluations of their social position.

Although we would expect disparities in perceived economic distress to widen alongside objective measures, people's perceptions are influenced by a broad set of factors. In particular, these perceptions may vary across birth cohorts because the conditions experienced by a cohort during its formative years can influence whether an individual views his/her financial means to be sufficient. Case and Deaton (2017) argue that the labor market opportunities available to members of a cohort as they enter the work force may affect not only their career trajectories, but also have ramifications for marital prospects and family formation (Case and Deaton 2017). Collectively, those cohort histories may shape a person's view of his/her economic well-being even much later in life.

More importantly, the social and health consequences of inequality may depend on perceptions at least as much, if not more, than they do on objective criteria. Indeed, "If men define situations as real, they are real in their consequences (Thomas and Thomas 1928, p. 572)." Previous studies have demonstrated that subjective measures of financial well-being predict mortality (Szanton et al. 2008), decline in mental health (Wilkinson 2016), and worse self-assessed health status (Arber, Fenn, and Meadows 2014, Shippee, Wilkinson, and Ferraro 2012), even after controlling for objective economic factors. Therefore, efforts to identify the underlying

causes of recent demographic trends are likely to benefit from considering subjective assessments in addition to objective measures of economic distress.

In this paper, we begin by quantifying the extent to which the socioeconomic disparities in perceived economic distress widened since the mid-1990s. Specifically, we investigate the degree to which subjective measures of financial strain and employment uncertainty differ between those in the top and bottom percentiles of relative SES and whether that SES disparity widened over time. We subsequently address a more interesting question: did the SES-associated disparities in perceptions widen more than we would expect based on changes in objective measures? Thus, we determine the extent to which the growing disparities (i.e., differences between those with low versus high relative SES) in subjective measures can be explained by changes in objective measures of economic and employment conditions. As discussed in the next section, reference group theory would predict that more advantaged subgroups would perceive the same economic and employment conditions more negatively. Therefore, we also test whether there is a racial/ethnic differential in perceptions of economic distress net of objective circumstances.

BACKGROUND

Voydanoff (1990) conceptualizes economic distress as having both objective and subjective dimensions. The objective component includes economic deprivation (e.g., real income, assets) as well as employment instability (e.g., patterns of employment), whereas the subjective dimension encompasses financial strain (e.g., perceived financial inadequacy) and employment uncertainty (e.g., assessments of current work situation and prospects for the future) (Voydanoff 1990). Conger (1990) argues that the effects of objective economic conditions on health and behavior are mediated by subjective financial strain. Leininger and Kalil (2014) suggest that perceived financial strain during the Great Recession might be less connected with objective economic factors and relate more to perceived uncertainty about the future. That suggestion raises an empirical question: are subjective evaluations of financial strain and employment uncertainty simply a function of objective circumstances? Or, do other factors play a role in shaping an individual's perception of his/her economic and employment situation?

Consider, for example, the effects of the Great Recession (2007-09 in the US). By most objective measures, the Great Recession had a greater financial impact on blacks and Latinos than on whites (Kochhar, Fry, and Taylor 2011). US blacks continue to have far higher overall mortality than US whites (National Center for Health Statistics 2017, Table 15), but recent attention has highlighted the slowing of mortality decline and the increasing death rates related to drugs, alcohol, and suicide that appear to have affected non-Latino whites more than blacks or Latinos (Kochanek, Arias, and Bastian 2016, Squires and Blumenthal 2016, Case and Deaton 2017, Case and Deaton 2015). Although there has been a surge in overdose mortality among blacks and Latinos since 2010, rates of overdose mortality remain much higher among non-Latino whites than their non-Latino black and Latino counterparts (Hedegaard, Warner, and Miniño 2017).

Reference group theory (Hyman 1942, Merton and Rossi 1950, Merton 1957), which posits that individuals compare themselves to the social group to which they aspire, provides one possible explanation for the racial difference. Relatedly, the theory of relative deprivation (Davis 1959, Runciman 1966, Merton and Rossi 1950) refers to the notion that comparing oneself with others who are more advantaged can create a feeling of deprivation. Because people generally focus on upward comparisons (Runciman 1966, Evans, Hout, and Mayer 2004), growing levels of

income inequality are likely to affect perceptions adversely for most, if not all, of the population, but those with the lowest income may experience the strongest feelings of being worse off (Hastings 2017). Thus, we would predict that as inequality increases, individuals with low socioeconomic status would perceive themselves to be worse off than their actual economic circumstances would suggest. That is, we expect their sense of relative deprivation to grow over time because they are comparing their condition with those at the top who have enjoyed greater prosperity.

Yet people compare themselves not only with positive reference groups (i.e., those they admire), but also negative reference groups (i.e., those to whom they feel superior and from whom they differentiate themselves). Runciman (1966) distinguishes between comparisons within one's own subgroup (i.e., "egoist comparison") versus comparisons of one's own group relative to other subgroups (i.e., "fraternal comparison"). In the case of fraternal (out-group) comparisons, Davis (1959) uses the term "relative subordination" to refer to the resulting attitude when someone who is worse off relative to the population as a whole compares her/himself to a better off member of an out-group, whereas he denotes the attitude as "relative superiority" when a better off individual compares her/himself to a worse off member of an out-group. Cherlin (2016, 2014) points out that reference group theory might explain why people who have *more* might feel like they have *less*; it all depends on the reference group to which they compare themselves. Within the U.S., non-Latino whites have historically enjoyed greater advantages than minorities. Reference group theory would suggest that subgroups that have been more advantaged would have higher expectations. Thus, worse off members of a historically advantaged subgroup may be more prone to feelings of relative subordination.

Status anxiety may further explain an apparent discordance between objective and subjective measures. Seymour Martin Lipset (1955) used the term "status anxiety" to explain how concerns about one's relative social position can arise during periods of apparent prosperity or at least economic recovery. Unlike the financial deprivation that results from economic recession and widespread unemployment, status anxiety is more subjective in nature. As Wilkinson (2016) notes, the link between objective circumstances and subjective evaluations may seem counterintuitive: during periods of economic decline, a person may downplay his/her own financial troubles. But when times are more prosperous, people who are not doing as well might feel left behind, thereby generating status anxiety. Previous authors have argued that increased income inequality can heighten status anxiety, which can, in turn, affect an individual's health via emotional and stress responses and also adversely affect social relationships and social organization (Layte and Whelan 2013).

HYPOTHESES

As a result of increasing inequality and weakening employment prospects for less educated Americans, we hypothesize that,

> H_1: Perceived financial strain and employment uncertainty increased more over time for individuals at the lower end of the SES distribution than for those at the upper end of the SES continuum.

Widening SES disparities in these perceived measures, implied by H_1, may be simply a function of changes in objective measures of economic and employment conditions: people *perceive* themselves as worse off because they *are* worse off. Yet growing inequality may exacerbate one's sense of relative deprivation. Based on reference group and relative deprivation theories, we would predict that people's expectations rise as they try to "keep up with the Joneses."

Consequently, we suspect that the SES disparity in perceptions widened even more than observed economic circumstances would suggest.

> **H$_2$**: The growing disparity in perceived economic distress was greater than would be expected based on changes in objective, inflation-adjusted economic and employment conditions.

Within US society, non-Latino whites have historically enjoyed socioeconomic advantages relative to minorities. Consequently, they are likely to have higher expectations and be more susceptible to status anxiety. We anticipate that,

> **H$_3$**: Given similar economic and employment circumstances, non-Latino whites will perceive themselves as worse off than groups who have been more disadvantaged historically.

We also expect that, after controlling for differences in economic and employment conditions, non-Latino whites will experience a bigger rise than minorities in perceived economic distress since the mid-1990s. Our rationale is the observation that minorities may perceive themselves as financially better off than their parents were at the same age. In contrast, non-Latino whites, particularly those with low levels of education, fared rather well during the post-World War II period. Yet in recent years, the effects of globalization and the decline of well-paid manufacturing jobs for high school educated individuals (the so-called "blue collar aristocracy") have made it increasingly difficult for this group to match the improvements in the standard of living enjoyed by their parents. Although the number of minorities in the MIDUS sample does not provide sufficient statistical power to adequately test differences in the period effects by race/ethnicity, in the Discussion we briefly review some exploratory analyses along these lines.

METHODS

Data

We use data from two cross-sectional waves of the Midlife Development in the US study (MIDUS). In 1995-96 (Wave M1), MIDUS conducted phone interviews with a national sample of non-institutionalized, English-speaking adults aged 25-74 in the coterminous United States, selected by random digit dialing with oversampling of older people and men (Brim et al. 2016). Among those who completed the phone interview (*N*=3,487, 70% response rate), 3,034 (87%) also completed mail-in self-administered questionnaires (SAQ). In 2011-14 (Wave R1), a new refresher cohort with the same age range was sampled from the national population (Ryff et al. 2016). Among those who completed the phone interview (*N*=3,577, 59% response rate), 2,598 (73%) also completed the SAQ.

We restrict our analyses to respondents who completed the SAQ. Thus, our pooled analysis sample comprises 5,632 respondents.

Measures

Subjective Measures of Economic Distress

The subjective outcomes include two measures of financial strain and two measures related to employment uncertainty. Our first measure is an index of current financial strain based on the following five questions from the SAQ:

1) "*Using a scale from 0 to 10 where 0 means 'the worst possible financial situation' and 10 means `the best possible financial situation,' how would you rate your financial situation these days?*"
2) "*Looking ahead ten years into the future, what do you expect your financial situation will be like at that time?*" [using the same 0-10 scale]
3) "*Using a 0 to 10 scale where 0 means `no control at all' and 10 means `very much control,' how would you rate the amount of control you have over your financial situation these days?*"
4) "*In general, would you say you (and your family living with you) have more money than you need, just enough for your needs, or not enough to meet your needs?*"
5) "*How difficult is it for you (and your family) to pay your monthly bills?*" [response categories: very difficult, somewhat difficult, not very difficult, not at all difficult]

Each item was standardized based on the distribution of the pooled sample and coded so that higher values indicate more financial strain. Then, we computed the mean across the five items (Cronbach's $\alpha=0.84$).

The second measure of financial strain relates to intergenerational financial disadvantage and is based on the following question: "*When your parents were the age you are now, were they better off or worse off financially than you are now?*" Responses were coded on a seven-point scale from "a lot better off" to "a lot worse off"; higher values indicate that the respondent perceived him/herself as worse off than his/her parents (i.e., parents were better off than the respondent).

We measure employment uncertainty using the respondent's ratings of his/her current work situation ("*Please think of the work situation you are in now, whether part-time or full-time, paid or unpaid, at home or at a job. Using a scale from 0 to 10 where 0 means `the worst possible work situation' and 10 means `the best possible work situation,' how would you rate your work situation these days?*") and his/her expected work situation 10 years in the future ("*Looking ahead ten years into the future, what do you expect your work situation will be like at that time?*", using the same scale). These two questions were asked of all respondents regardless of whether they were employed at the time of the survey. We reverse-coded these measures so that higher values indicate worse evaluations (i.e., more uncertainty).

Objective Measures of Economic and Employment Circumstances

Socioeconomic status (SES) is typically measured based on education, occupation, income, and/or wealth and can be specified in either absolute or relative terms. We create a measure of relative SES (percentile rank within each survey wave) that includes measures of economic deprivation as well as education and occupation (see Supplementary Material for details). Much of the literature on widening social disparities in health and mortality focuses on educational differentials, but trends in health disparities by education are compromised by the problem of lagged selection bias (Dowd and Hamoudi 2014). The proportion of the US population that completed high school increased dramatically during the 20th century and thus, high school dropouts have become an increasingly select group (Dowd and Hamoudi 2014). Indeed, Hendi (2015) finds that half of the decline in life expectancy among the least-educated white women and much of widening of the education gap in survival results from shifts in the educational distribution. Our composite measure of relative SES is less prone to the problem of lagged selection bias because it allows us to evaluate changes over time in the outcome measures for fixed quantiles of the population.

In the models that control for objective economic and employment circumstances, we include each of the individual components used to construct relative SES,[2] a dichotomous variable indicating whether the respondent was covered by health insurance at the time of the survey, and two measures of employment instability: current work status (categorized as employed, retired, or not employed) and the lifetime maximum period of unemployment (when not a student). We recode the maximum unemployment spell into the following categories: never (including those never employed), less than six months, six months to less than two years, and two or more years.

Demographic Factors

We include the following factors as controls: sex, survey wave, age, cohort, race/ethnicity, and marital status. A dummy variable indicating survey wave (2011-14 vs. 1995-96) represents the period effect, while age is specified as linear. We also control for cohort because, as noted in the introduction, economic conditions experienced by a cohort during early life may influence their perceptions of economic distress throughout life. We classified respondents into four cohorts: 1) those born before 1943; 2) Early Baby Boomers (born in 1943-53); 3) Late Baby Boomers (born in 1954-64); and 4) those born after 1964.[3] Because there are few racial/ethnic minorities in MIDUS, we included a dummy variable that distinguishes non-Latino whites from all other groups. Marital status was also coded as dichotomous, indicating those who were married or living with a partner.

Analytical Strategy

In order to include as much data as possible in the analysis, we followed standard practices of multiple imputation to handle missing data (Schafer 1999, Rubin 1996).[4] All analyses were weighted using post-stratification weights. We standardized all outcome measures based on the pooled distribution so that values are measured on the same scale and effect size can be compared across time and across outcomes.

We began with bivariate analyses, using local mean smoothing to plot each of the outcome variables by SES percentile for the two survey waves.[5] In supplementary analyses, we further examined smoothed bivariate plots of the outcome variables by single-year birth cohort.

We then fitted a series of linear regression models for each outcome. The baseline model controlled for period, age, cohort group, sex, race/ethnicity, and marital status. This model also included an interaction between period and cohort group to allow for the fact that some cohorts may have been more affected by changes over time in economic and employment conditions (e.g., cohorts entering the labor force during a period of high unemployment may have struggled more to establish their careers). In Model 2, we added relative SES (i.e., percentile rank), which was interacted with survey wave to test H_1: Did perceived economic distress increase more between 1995-96 to 2011-14 for those at the bottom than for those at the top of the SES spectrum? In Model 3, we added controls for the objective measures of economic and employment circumstances to test H_2: Did the SES disparity in perceptions widen more than expected based on changes in objective measures? Using the results from this same model, we consider the coefficient for race/ethnicity to evaluate H_3: Given similar objective economic and employment circumstances, did non-Latino whites perceive their situation more negatively than minorities?

RESULTS

Descriptive statistics for all analysis variables are presented in Table 1 by survey wave. Rising levels of educational attainment over time are apparent. In 1995-96, the average educational level for the respondent (6.3) and his or her spouse/partner (6.5) corresponds to one or two years of college without a degree, while the mean level in 2011-14 (7.0 for respondent, 7.4 for spouse/partner) equates to three or more years of college without a degree. The occupational structure also appears to have shifted over time as the fraction working in the lower two categories declined while the percentage employed in the upper two categories increased. For example, the percentage of respondents employed in farming, construction, maintenance, production, transportation, or the military declined from 27% in 1995-96 to 20% in 2011-14. Over that same period, the percentage of respondents in professional occupations increased from 18% to 26%. Adjusted for inflation, average household income declined,[6] although wage/salary income for the respondent and spouse combined was more stable over time. The mean level of assets (in real dollars) increased over time, but the average is deceptive because the distribution is extremely skewed. The percentage with no net assets or a deficit *increased* from 36% in 1995-96 to 45% in 2011-14. At the same time, the percentage with very high assets (i.e., $500,000 or more in 1995 dollars) increased from 4.3% to 7.4% (not shown).

[Table 1 here]

In order to situate changes in the mean levels of subjective economic distress in context, it is useful to consider historical economic conditions during this period. The monthly unemployment rate for adults aged 16 and older hovered between 5.1% and 5.8% during the baseline wave of MIDUS (January 1995-September 1996); those rates were an improvement over the higher levels of unemployment in the early 1990s that peaked at 7.8% in June 1992 (Bureau of Labor Statistics 2017). Compared with the baseline wave, unemployment rates were higher during the refresher wave of MIDUS (November 2011-May 2014), ranging from 6.2% (April 2014) to 8.6% (November 2011). Unemployment was trending downward during this later period, but followed on the heels of very high levels of unemployment spurred by the Great Recession (December 2007-June 2009). Unemployment peaked at 10.0% in October 2009 before beginning a slow decline. Thus, one would expect to find substantially higher levels of economic distress at the later wave than the earlier wave of MIDUS.

We do see a slight increase between the two waves in employment uncertainty as evidenced by respondents' ratings of their current work situation and their expected work situation ten years in the future, both of which worsened over time. There was also some deterioration in respondents' perceptions of their current financial situation, future financial situation, control over their financial situation, and perceived intergenerational financial disadvantage. Yet, we see no change over time in the means for self-reported ability to meet financial needs and difficulty paying monthly bills. As we demonstrate in the next section, the mean levels of these subjective outcomes obscure the fact that changes over time were very different for those at the bottom of the SES distribution than for those at the top. The most socioeconomically disadvantaged segment of the population was likely to suffer the brunt of the recession and resultant increases in unemployment.

Growing disparity in perceived economic distress over recent decades

Figure 1 shows the bivariate association between the subjective outcomes and relative SES at the two waves (1995-96 and 2011-14). Across all four outcomes, levels of perceived economic distress generally increased among people below the 40th percentile of the SES distribution. At the top of the SES spectrum, the trends varied across outcomes: perceived current financial

strain declined slightly, but there was virtually no period change in perceptions of intergenerational disadvantage or the measures of employment uncertainty. Overall, the SES disparities in perceived financial strain and employment uncertainty widened over the last two decades.

[Figure 1 here]

Supplementary Figure S1 shows additional bivariate analysis of the subjective measures by birth cohort.[7] These graphs suggest that the late Baby Boomers (i.e., those born in 1954-64)[8] were hit hardest (see Supplementary Figure S1). That is, the biggest increase in perceived financial strain and employment uncertainty appeared among the cohorts who were in midlife in 2011-14. Among the older cohorts,[9] there was little change in perceived current financial strain or perceived intergenerational disadvantage; a decline in uncertainty regarding current work—perhaps because these older cohorts would have reached retirement age by 2011-14; and a smaller increase in uncertainty about future work. Even the younger cohorts did not exhibit as much change over time in these subjective measures as the late Baby Boomers, but they are still fairly early in their working careers.[10]

This pattern apparent at the bivariate level persists when we simultaneously control for other demographic factors (i.e., sex, age, race/ethnicity, marital status) as well as cohort group in our baseline regression models (Model 1, Tables S1 & S2). The estimated change in these outcomes for each cohort group adjusted for demographic factors is shown in Figure 2. Here, the results show even more strikingly that the late Baby Boomers exhibited a larger increase in perceived economic distress (0.18 to 0.39 in SD units) than the other cohort groups.

[Figure 2 here]

When we add relative SES to the model, we find that trends in perceived outcomes differed greatly by SES for three of the four outcomes (Model 2, Tables S1 and S2). By summing the relevant coefficients, we show the estimated change in each outcome for someone in the 1st or in the 99th percentiles of SES by cohort group in Figure 3.[11] As hypothesized in H_1, perceived financial strain and employment uncertainty increased much more for those at the bottom of the SES spectrum. For example, among the late Baby Boomers, current financial strain grew by 0.63 SD between 1995-96 and 2011-14 for those in the bottom percentile, while there was virtually no change for their counterparts in the top percentile.[12]

[Figure 3 here]

The results for perceived intergenerational disadvantage tell a different story: the change over time in these perceptions did not differ significantly by SES. The deterioration in this outcome was nearly as large for those at the top of the SES spectrum as it was for those at the bottom. Yet, evidence of cohort differences remain: respondents' perceptions of their own financial situations relative to those of their parents at the same age deteriorated more for the late Baby Boomers than for other cohorts (Figure 3).

Subjectively-Measured Disparities Grew More than Expected Based on Objective Criteria

The difference between the 1st and 99th percentiles of relative SES (seen in Figure 3) represents the SES disparity, which we show explicitly in Figure 4. As a result of increased economic distress at the bottom of the SES continuum, coupled with some improvements at the top, the disparities widened. In Figure 4, the green bars show the estimated widening of the

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SES gap adjusted for demographic factors (Model 2): the SES gap increased substantially for current financial strain (by 0.65 SD), current work uncertainty (by 0.56 SD), and future work uncertainty (by 0.51 SD), although there was little change in the SES disparity in perceived intergenerational disadvantage because perceptions deteriorated at all levels of SES.

[Figure 4 here]

In Model 3 (Tables S1 and S2), we added controls for objective measures of economic and employment circumstances. Not surprisingly, these objective measures were important predictors of subjective evaluations. For example, perceived current financial well-being was 0.35 SD lower for those who were neither working nor retired than for those who were currently employed; the corresponding difference in ratings of current work situation was 0.63 SD (Table S2, Model 3). As expected, income and assets were inversely associated with perceived financial strain, as was health insurance: perceived financial well-being and intergenerational advantage were about one-quarter SD higher for those covered by health insurance than for those without coverage.

Model 3, which includes both relative and absolute measures of SES, poses a hypothetical scenario: what might the SES disparity in perceptions look like if individuals at the top and bottom shared similar levels of education, income, assets, employment status, etc.? If perceptions were simply a function of observed financial and employment circumstances, then we would expect the SES gap (and widening of that gap over time) to disappear in the fully adjusted model (Model 3).

Although the increases over time in the SES gap in current financial well-being and ratings of current work situation are reduced somewhat after adjustment for objective measures (shown in red bars in Figure 4), our model accounts for only a small fraction of the increased SES disparity in these perceived measures. As hypothesized in H_2, these results suggest that the disparity in perceived financial well-being and employment uncertainty increased even more than we would have expected based on changes in the objective factors measured here. We tested the sensitivity of this result to various alternative specifications for income and assets and to substituting wage/salary income for the respondent and spouse combined in place of household income (not shown). Regardless of how income and assets are specified, controlling for objective measures of economic conditions accounts for only a modest fraction of the widening of the SES differential in perceived current financial strain and work uncertainty.

Non-Latino Whites Perceive Similar Economic Conditions More Negatively Than Minorities

Based on reference group theory, we hypothesized (H_3) that non-Latino whites would perceive the same circumstances more negatively than minorities. After controlling for objective measures, we found that non-Latino whites reported higher levels of financial strain than minorities, but there was no significant difference in work uncertainty (Figure 5). The racial/ethnic differential was largest for perceived intergenerational disadvantage: given similar economic and employment conditions, non-Latino whites reported levels of intergenerational disadvantage that were 0.15 SD higher than those of minorities. That result may reflect the reality that economic conditions relative to the previous generation improved more for minorities than for non-Latino whites. Even though non-Latino whites remain financially advantaged relative to minorities, the gap may have narrowed since their parents' generation.

[Figure 5 here]

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DISCUSSION

Given the well-established increase in economic inequality over the study period, it is not surprising to find that perceived financial strain and employment uncertainty increased more for those at the lower end of the socioeconomic spectrum than for those at the upper end (i.e., the socioeconomic disparity in perceived economic distress widened considerably since the mid-1990s). This finding is consistent with prior studies based on objective measures. For example, Chetty et al. (2016a) demonstrated that the fraction of people earning more at age 30 than their parents did at the same age declined sharply from 92% for those born in 1940 to 50% for those born in 1984. People *perceive* themselves as worse off because they *are* worse off. Our own analyses of the objective measures of economic distress bear that out: between the mid-1990s and the early 2010s, income and wealth deteriorated at the bottom of the distribution, although wealth improved for those at the top.

More interesting is our finding that, for those with low SES, perceptions have deteriorated even more than we would expect based on changes in objective measures of economic and employment circumstances. The "have nots" feel worse off than standard economic indicators suggest. Thus, either our measures of the relevant objective circumstances are inadequate (e.g., measurement error or omitted variables such as characteristics of jobs) or individuals' perceptions of their financial and employment situations are influenced by factors other than standard economic indicators. Such factors could include characteristics of individuals and their social context that influence their reference level for comparison.

Perceived intergenerational advantage shows a different pattern from the other subjective outcomes in the sense that deterioration occurred at most levels of SES, although it was concentrated among the late Baby Boomer cohort. Among the late Baby Boomers, bivariate analyses (not shown) show that the percentage reporting they were "somewhat" or "a lot" better off than their parents were at the same age declined between 1995-96 and 2011-14, and that decline was as big for those in the highest SES quintile as it was in the lowest quintile. This perceptual deterioration persisted even after adjusting for objective measures.[13] One possible explanation is that the sample was more negatively selected in the 2011-14 wave (i.e., more representative of the less fortunate than the earlier wave), but we find little evidence of that. Among late Baby Boomers, the percentage reporting that they did not complete high school was 8% at M1 versus 7% at R1, while the percentage of college graduates increased from 25% at M1 to 31% at R1. Similarly, the distributions for reported educational attainment of respondents' mothers and fathers among the late Baby Boomer cohort were similar at both waves.

Paradox: Why Would Whites Be More Likely Than Minorities to Succumb to Despair?

If economic woes are the source of the "despair" that has captured so much recent attention, in particular attention on the plight of working class whites, it seems paradoxical that the *deceleration* of mortality decline and increasing deaths of despair appear to have affected non-Latino whites more than blacks or Latinos (Kochanek, Arias, and Bastian 2016, Squires and Blumenthal 2016, Case and Deaton 2017). Despite notable narrowing of the race gap in death rates, US blacks continue to endure much higher mortality than US whites (National Center for Health Statistics 2017). Moreover, the Great Recession hit minorities harder than whites and black-white differentials in wages and wealth have persisted unabated (Kochhar and Fry 2014, Wilson and Rodgers 2016). To explain the paradox, we have examined the possibility that a person's interpretation of his/her current financial condition may not be purely a function of objective circumstances such as income and wealth as viewed by an external observer.

After we adjust for racial/ethnic differences in objective measures of economic and employment conditions, we find that non-Latino whites express *higher* levels of perceived financial strain

than minorities. This racial/ethnic gap in perceptions is widest for intergenerational advantage, which lends credence to Cherlin's hypothesis that differences in the reference group are critical for understanding despair. Cherlin (2016, p. A19) notes that, "many non-college-educated whites are comparing themselves to a generation that had more opportunities than they have, whereas many blacks and Hispanics are comparing themselves to a generation that had fewer opportunities." Among respondents aged 25 to 54 in the General Social Survey, he found that in 2000, whites were more likely than blacks to perceive their standard of living as better than that of their parents, but by 2014 whites were *less* positive than blacks and Latinos (Cherlin 2016). Case and Deaton (2015, p. 15081) hinted at a similar idea: "After the productivity slowdown in the early 1970s, and with widening income inequality, many of the baby-boom generation are the first to find, in midlife, that they will not be better off than were their parents." In later work, Case and Deaton (2017) point out that whites were likely to be more affected than blacks by the declining rates of absolute mobility noted by Chetty et al. (2016a). Although we do not have information about the income level of the respondents' childhood families, the percentage of respondents who reported that their mothers did not complete high school was much higher for minorities than it was for non-Latino whites (53% vs. 34%, respectively, in 1995-96), as was the percentage reporting that they had ever been on welfare during childhood (13% vs. 6% respectively, in 1995-96). The racial gap in childhood disadvantage appears to be wider for the Baby Boomer cohorts compared with earlier generations: among those born between 1920 and 1942, 55% of non-Latino whites vs. 68% of minorities reported that their mother did not complete high school, but the corresponding figures were 31% vs. 55% for early Baby Boomers, and 22% vs. 43% for late Baby Boomers. That gap appears to have narrowed for Generation X (born 1965-79): 14% of non-Latino whites vs. 19% of minorities had a mother who did not complete high school.

Thus, we might expect non-Latino whites to be more sensitive to status anxiety than minorities, particularly during this period of rising inequality. In auxiliary analyses, we added a two-way interaction between race/ethnicity and period to Model 3 to test whether non-Latino whites exhibited a larger increase in perceived economic distress over this period than minorities. Although the interaction was not significant, the direction of the coefficients is consistent with the notion that the increase in financial strain and future work uncertainty was larger for non-Latino whites compared with minorities. Unfortunately, with fewer than 500 minority respondents at each wave, we have limited statistical power to test this interaction.

The Downfall of the "Blue Collar Aristocracy"

Wages (in real terms) among working-class whites peaked for the cohorts that completed high school in the early 1970s; since then, job prospects have steadily deteriorated for successive cohorts with low education (Cherlin 2014, Cherlin 2009, Case and Deaton 2017). Based on qualitative interviews with Tea Party supporters in southwestern Louisiana, Hochschild (2016a) suggests that many older, native-born working- and middle-class whites in America are feeling left behind. Hochschild (2016b, p. 141) points to 1950 as the turning point "when the Dream stopped working for the [bottom] 90 percent" of white American men: "If you were born before 1950, on average, the older you got, the more your income rose. If you were born after 1950, it did not." The downfall of the "blue collar aristocracy" has implications not only for employment, but also for traditional social structure (Case and Deaton 2017). One manifestation of this breakdown is the widening of the education gap in rates of marriage and non-marital childbearing (Cherlin 2014, Case and Deaton 2017). Among those without a four-year college degree, successive birth cohorts (since 1940) of non-Latino whites have been less likely to marry, whereas there has been little cohort change in marriage among college graduates (Case and Deaton 2017, Figure 3.2).

We also see evidence of cohort effects: the late Baby Boomers—born between 1954 and 1964—exhibit the largest increases in perceived financial strain and employment uncertainty, whereas those born in 1950 and earlier show little or no increase in perceived economic distress. Similarly, changes over time in perceptions are modest for cohorts born after 1970. What was unique about the experience of the late Baby Boomers? These cohorts were among the hardest hit by declining rates of absolute income mobility, dubbed by Chetty (2016a) as "the fading American dream". The early Baby Boomers also experienced declining rates of mobility, but started from a higher point such that the percentage earning more than their parents ranged from nearly 90% of the 1943 cohort to more than 70% of the 1953 cohort; in contrast, only 57-70% of the late Baby Boomers were better off than their parents (Chetty et al. 2016a, Figure 1B). By Generation X (1965-79), rates of mobility remained low (≈55-60%), but the steep decline seemed to be leveling off. Our results are consistent with the economics literature documenting the conditions experienced by the Baby Boomers. As Macunovich (1998) explains, cohorts born during the first half of the boom fared much better than the late Baby Boomers because the older cohorts benefited from an expanding economy fueled in part by the expenditures of the baby boomers' parents and later, by the boomers themselves. In contrast, she notes that those born as the boom ebbed were hit hardest because they still represented relatively large cohorts who had to compete in the labor market with early boomers, and, by the time they entered the labor force, economic growth was slowing as a result of their own declining numbers.

Case and Deaton (2017) argue that economic conditions at the time that cohorts enter the labor force are critically important. The late Baby Boomers would have completed high school between 1972 and 1982, which means they experienced economic recessions (1973-75 and 1980-82) characterized by high unemployment during their early working life. In contrast, the early Baby Boomers completed high school during a period of generally low unemployment, while Generation X entered the labor force during a time when economic conditions were improving.

The late Baby Boomers faced the Great Recession (2007-09) during their midlife, when they were likely to own a home with a large mortgage; after the housing market crashed, their debt may have become greater than the market value of the property, making them vulnerable to foreclosure. During this period, the early Baby Boomers were nearing retirement and Generation X was still relatively young (aged 28-42 in 2007). In contrast, as older workers who were not yet old enough to retire, the late Baby Boomers may have had more difficulty finding a new job in the face of unemployment (Coile, Levine, and McKnight 2014).

Feeling Like Others are "Coming from Behind and Cutting in Line"?

The preceding sections focus on how reference levels may differ by race/ethnicity and by cohort. Here we suggest that reference levels within a given subgroup may also change over time depending on social context. As Wilkinson (2016) points out, the psychological effects of economic challenges may be easier to bear in the context of widespread trouble shared by everyone. By contrast, people may have more difficulty accepting their lot when they think others are making better progress. As Hochschild (2016a) describes it, working class whites feel like other people are "coming from behind and cutting in line" (p. 686), thus generating feelings of anxiety, suspicion, and anger.

Decades of increased socioeconomic inequality juxtaposed with social movements (e.g., civil rights, women's rights) that have reduced some of the disparities between demographic

subgroups may have generated conditions that are ripe for status anxiety among Americans who have historically enjoyed greater advantage. As Cherlin (2016) notes, the fact that the median weekly earnings of white men aged 25-54 remains well above the earnings of corresponding black or Latino men may be beside the point. If whites perceive themselves as falling behind, then perception has its own reality. Recent survey data suggest that whites are more likely than blacks to agree that "conditions for black people have improved" (Cherlin 2016) and to say that "blacks and whites are treated about equally in the workplace" (Pew Research Center 2016).

Do Perceptions Really Matter?

An important but unanswered question pertains to the relative impact of subjective versus objective measures of economic distress on social and health outcomes. Objective economic deprivation and employment instability have obvious consequences for those who suffer from them and for the productive potential of society. Yet, perceived economic distress could have more far-reaching social consequences for the population as a whole, potentially contributing to civil unrest, distrust of established institutions, cultural schisms in the fabric of society, and the breakdown of democracy. There is also reason to believe that subjective factors can affect health above and beyond the effects of objective measures. In terms of those health consequences, the salience of perception is perhaps most obvious for mental health outcomes. As the literature on resilience demonstrates, the same life challenge may be internalized very differently depending on the characteristics of the individual and the social context in which s/he is embedded (Pearlin et al. 2005, Bonanno 2012, Pearlin et al. 1981, Pearlin 1989). How a person perceives their reality is intertwined with depression and other forms of mental distress, but perception can also have important consequences for physical health outcomes. Kahn & Pearlin (2006) find that perceived financial strain has long-lasting effects on a variety of health outcomes—including physical impairment, serious chronic conditions, and depressive symptoms—even after controlling for current income.

Limitations and Future Directions

The limitations of this study include issues related to measurement, modeling, and research design. Even the "objective" measures are self-reported and thus subject to problems of measurement error. There are also extensive missing data, particularly with respect to income and assets. Our measures of objective circumstances are not exhaustive. For example, we have limited information about the nature of the individual's job, his/her employer, workplace, and employee benefits that might influence ratings of his/her work situation. Furthermore, our model assumes that the effects of losses and gains in income or assets are symmetric, but the concept of loss aversion (Kahneman and Tversky 1984, Kahneman and Tversky 1992) suggests that an economic loss will be perceived much more negatively than an equivalent gain (i.e., the direction of change matters). In terms of research design, our analysis is based on repeated cross-sectional surveys rather than longitudinal data that would permit us to evaluate within-individual changes over time in economic distress. With two survey waves nearly 20 years apart, a limited age range (25-74) at each wave, and only selected cohorts (1938-70) observed at both waves, it is difficult to separate the effects of age, period, and cohort. The oldest and youngest cohorts were observed at only one survey wave.

Much of the recent attention to the problem of "despair" centers on its consequences for population health and survival. Thus, it is worth exploring whether perceived measures of economic distress (financial strain and employment uncertainty) might illuminate the roots of this despair. For example, does perceived economic distress predict mortality better than objective measures alone? Perhaps the role of economic distress has been under-estimated because

standard economic indicators fail to capture the subjective component. Leininger & Kalil (2014) have suggested that subjective dimensions of economic distress have become more important since the Great Recession. Thus, we might ask whether the predictive abilities of perceived and objective economic distress have changed over time. Invoking the theory of stress proliferation, Kahn & Pearlin (2006) argue that the cumulative effects of financial strain may stem not only from their direct effects, but also from the fact that economic distress perpetuates additional stressors and disruptions in other domains of life. Therefore, it may be fruitful to investigate the links between changes in economic, psychological, and social distress, as well as the strain generated by the interaction between work and family demands.

One way to build on the cross-sectional analyses presented here would be to make use of the longitudinal data in MIDUS: three waves conducted approximately ten years apart between the mid-1990s and the mid-2010s. In future work, we plan to investigate whether similar period and cohort effects for perceived economic distress are evident among the original MIDUS cohort as it ages. The longitudinal data will also allow us to examine life course patterns of economic distress based on a retrospective question about financial difficulties during childhood combined with the questions about current financial strain and employment uncertainty that were repeated at each of the three waves. This longitudinal analysis could be further enriched by the availability of questions regarding exposure to the Great Recession in Wave 3 of MIDUS. Thus, we could explore the effects of foreclosure, selling one's home for a loss, having difficulty finding a new job, or taking a job for which one is overqualified. Coile et al. (2014) found that exposure to a recession (i.e., high levels of unemployment) has the counter-intuitive *positive* effect on short-term survival that has been extensively documented in previous literature. In the longer-term, their results demonstrate a *negative* effect on survival for workers who are nearing retirement (in their late 50s). This finding may be particularly salient for the late Baby Boomers who appear hardest hit in our analysis: they were reaching ages 45-55 in 2009, when unemployment surpassed 9% and remained above 7% until late 2013 (U.S. Bureau of Labor Statistics 2017).

Many scholars have pointed to income stagnation and decline as a major explanation for recent health crises, but as Case and Deaton (2017) acknowledged, the income-based explanation by itself does not appear adequate to account for the observed trends. They suggested that we need to look at cumulative lifetime disadvantage across multiple domains (i.e., work, marriage and family, social networks). Link and Phelan (1995) argue that the power of socioeconomic status in affecting health derives from its being a "fundamental cause" that is linked with a broad cluster of inter-related factors, which may not be easily captured by objective measures. The subjective nature of self-reports may represent an advantage in the sense that these responses integrate myriad unobserved factors experienced over a lifetime. Our findings suggest that if we want to understand widening socioeconomic disparities in health and survival, we should look beyond objective measures to consider the role of perceptions. If we want to know how people are doing, perhaps we should ask them.

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NOTES

[1] We use the terms "inequality" and "socioeconomic disparity" interchangeably to refer broadly to the unequal distribution of social and economic resources across the population. Such inequality can take many forms: the unequal distribution of income, wealth, education, employment prospects, job stability, insurance coverage, etc.

[2] Given the high proportion of respondents reporting no net assets or a deficit, we also include in the regression models a dichotomous variable indicating no assets/deficit.

[3] Respondents born before 1943 comprise the Silent Generation (born in 1925-42) as well as the late GI Generation (i.e., the 1995-96 wave of MIDUS included those born in 1920-24, which represents the tail end of the GI cohort born in 1901-24). Those born after 1964 include Generation X (born in 1965-79) and some early Generation Y/Millennials (i.e., the 2011-14 wave included those born in 1980-89).

[4] Among the pooled analysis sample (N=5,632), 39% were missing data for one or more analysis variables. The variables with the highest percentage of missing data were household income (18%), assets (13%), maximum unemployment spell (7%), rating of future work situation (6%), and rating of current work situation (5%).

[5] We used the *lpoly* command in Stata 12.1 (StataCorp 2011) to perform local mean smoothing—also known as the Nadaraya-Watson estimator (Nadaraya 1964, Watson 1964)—in which a locally weighted average is computed for each point in the smoothing grid (in this case, each age) using a kernel (in this case, Epanechnikov) as the weighting function.

[6] Median household income also declined from $47,500 to $43,065 in 1995 dollars (not shown).

[7] At Wave M1 (1995-96), MIDUS surveyed individuals representing the cohorts born in 1920 through 1974 (age 23-76 at the end of 1996). When the same age range was targeted at Wave R1 (2011-14), the sample included cohorts born in 1937 through 1989 (age 25-77 at the end of 2014).

[8] The late Baby Boomer cohort would have completed high school in 1971-82 and would have reached age 40 between 1994 and 2004. By the R1 Wave (2011-14), they would have been age 45-65.

[9] The older cohorts observed at both waves included the early Baby Boomers (born 1943-53) and the late Silent Generation (those born in 1938-42).

[10] The youngest cohorts observed at both waves comprised those born in 1965-70 (i.e., early Gen X), who would have been age 45 and younger in 2011.

[11] We show the 1st and 99th percentiles for simplicity: the main effect for survey wave represents the change over time for those in the 1st percentile (among cohorts born before 1943), while the sum of the main effect and the interaction between survey wave and relative SES denotes the change among their counterparts above the 99th percentile.

[12] Despite limited statistical power, we tested a three-way interaction between cohort, period, and SES, but none of the interaction terms were significant nor did they jointly improve model fit. Thus, we found no evidence that widening of the SES differential varied by cohort.

[13] In models adjusted for demographic factors, perceived intergenerational disadvantage increased by 0.39 SD among late Baby Boomers (Model 1, Table S1); after adjusting for objective measures of economic and employment conditions, the decline was still 0.28 SD (Model 3, Table S1).

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Figure 1. Smoothed bivariate plots of perceived economic distress by relative SES at MIDUS waves M1 (1995-96) and R1 (2011-14)
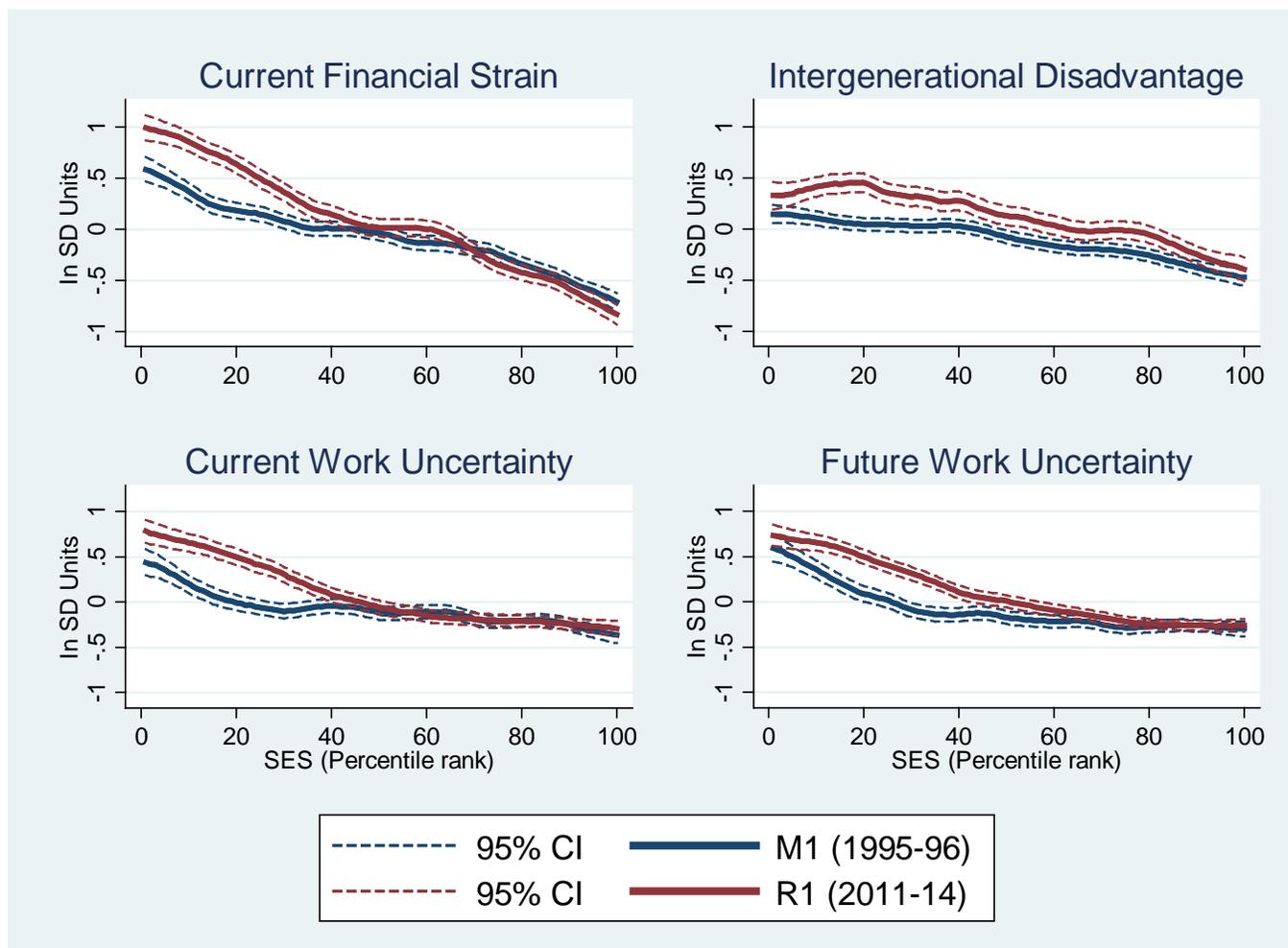
Note: These plots are produced using local mean smoothing (see endnote 5 for details). Variables on the y-axis are scaled in terms of standard deviation units, where higher values indicate more strain/uncertainty. For example, a value of zero on the outcome variable indicates that the smoothed mean for individuals at the specified percentile rank of SES is equal to the overall mean for the pooled sample (both waves combined), whereas a value of 0.5 would indicate a level half a standard deviation higher than the overall mean.

Figure 2. Estimated change between 1995-96 and 2011-14 in perceived economic distress by cohort group
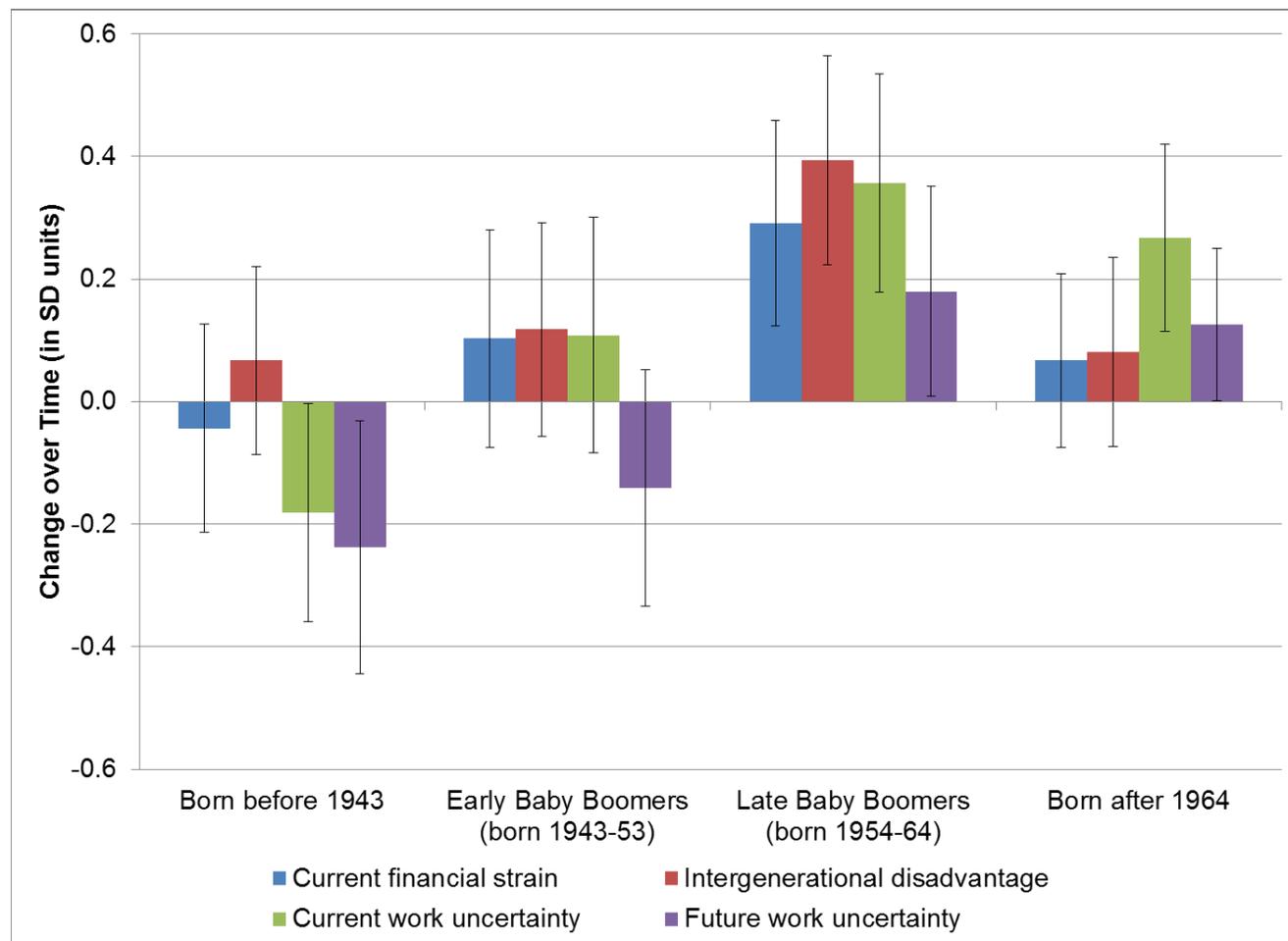
Note: The estimates are based on results from Model 1 (Tables S1 & S2), which adjusts for sex, age, cohort group, race/ethnicity, marital status, survey wave, and wave*cohort group. Estimated change for each cohort group is computed by summing the relevant coefficients (e.g., the estimated change for late Baby Boomers is the sum of the main effect for survey wave and the interaction between wave and the late Baby Boomer cohort group). Outcome measures are coded so that higher values indicate more strain/uncertainty. An estimated change of 0.2 indicates that level of economic distress increased by one-fifth of a SD between 1995-96 and 2011-14. Error bars indicate the 95% confidence interval for each estimate.

Figure 3. Estimated change between 1995-96 and 2011-14 in perceived economic distress by cohort group for a person in 1st and 99th percentile of the SES distribution
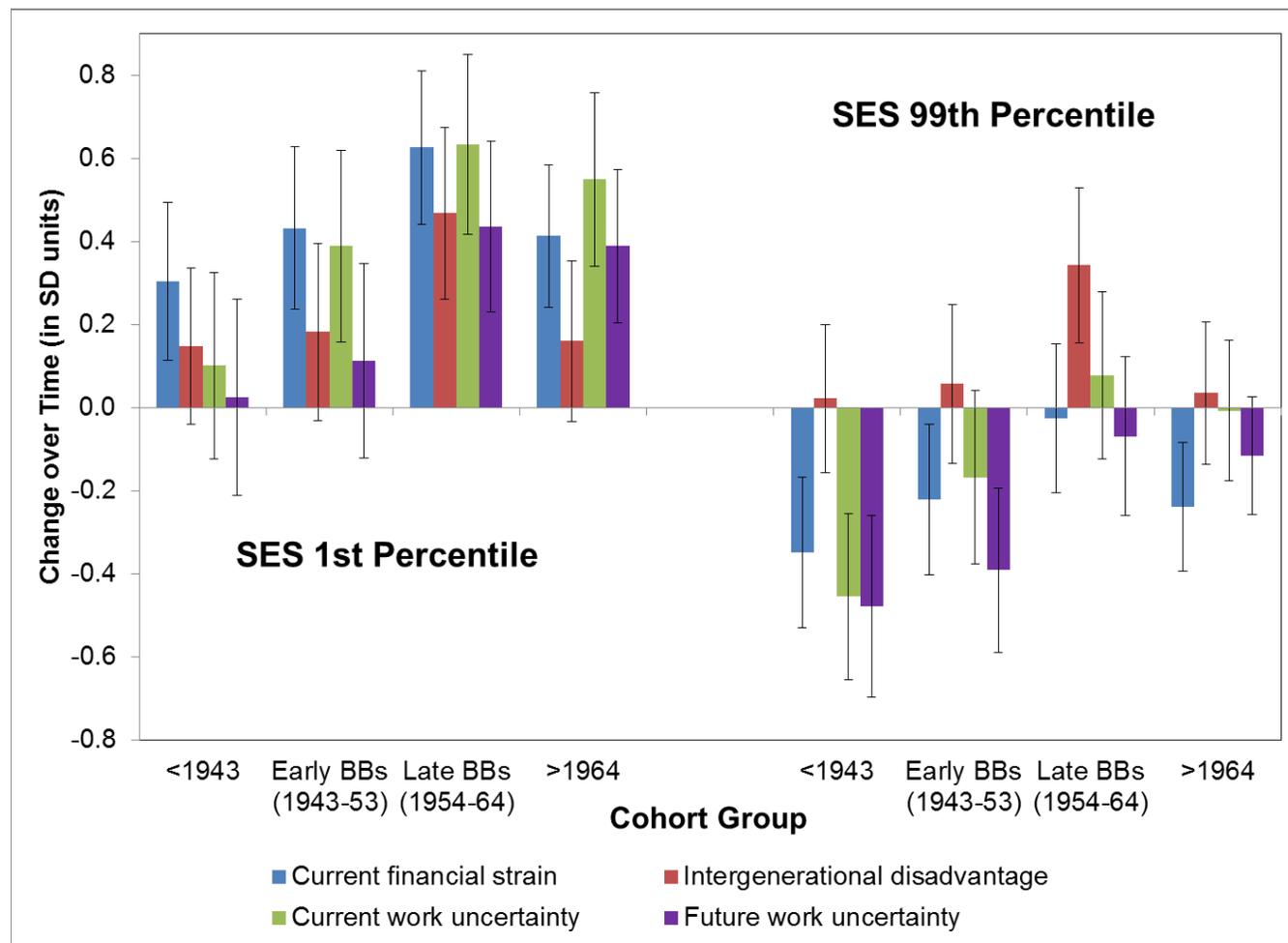
Note: The estimates are based on results from Model 2 (Tables S1 & S2), which adjusts for sex, age, cohort group, race/ethnicity, marital status, survey wave, wave*cohort group, relative SES, and wave*SES. Estimated change for each subgroup is computed by summing the relevant coefficients (e.g., the estimated change for late Baby Boomers in the 99th percentile is the sum of the main effect for survey wave, the interaction between wave and the late Baby Boomer cohort group, and the interaction between wave and relative SES). Error bars indicate the 95% confidence interval for each estimate.

Figure 4. Estimated increase between 1995-96 and 2011-14 in the SES disparity (1st - 99th percentile) in perceived economic distress before and after adjustment for objectively-measured economic and employment circumstances
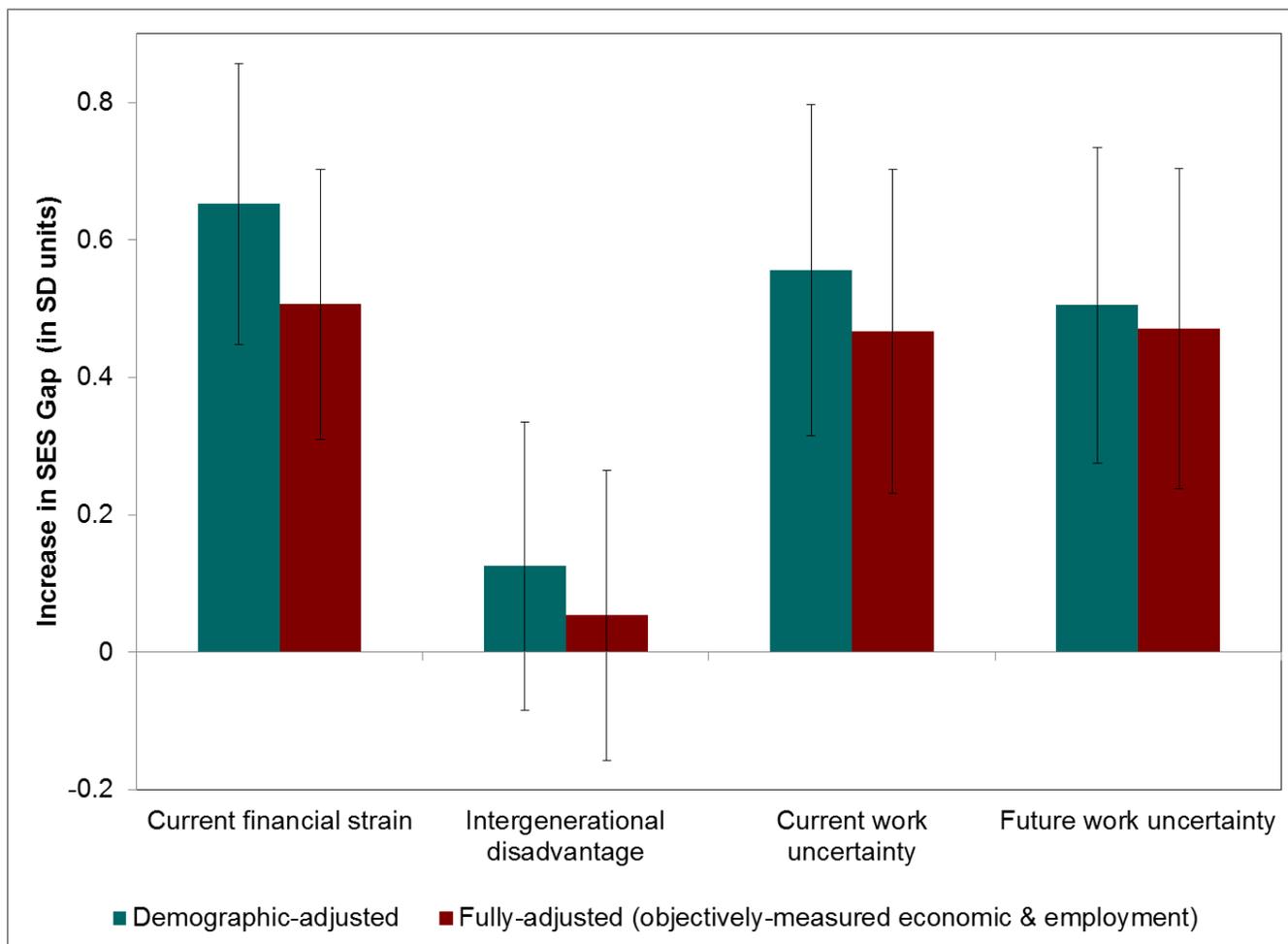
Note: Based on the coefficient for the interaction between survey wave and relative SES from Model 2, which adjusts for demographic factors, and Model 3, which adjusts for objective measures of economic and employment circumstances (Tables S1 & S2). Error bars indicate the 95% confidence interval for each estimate.

Figure 5. Estimated racial/ethnic differential (non-Latino whites relative to others) in perceived economic distress before and after adjustment for objectively-measured economic and employment circumstances
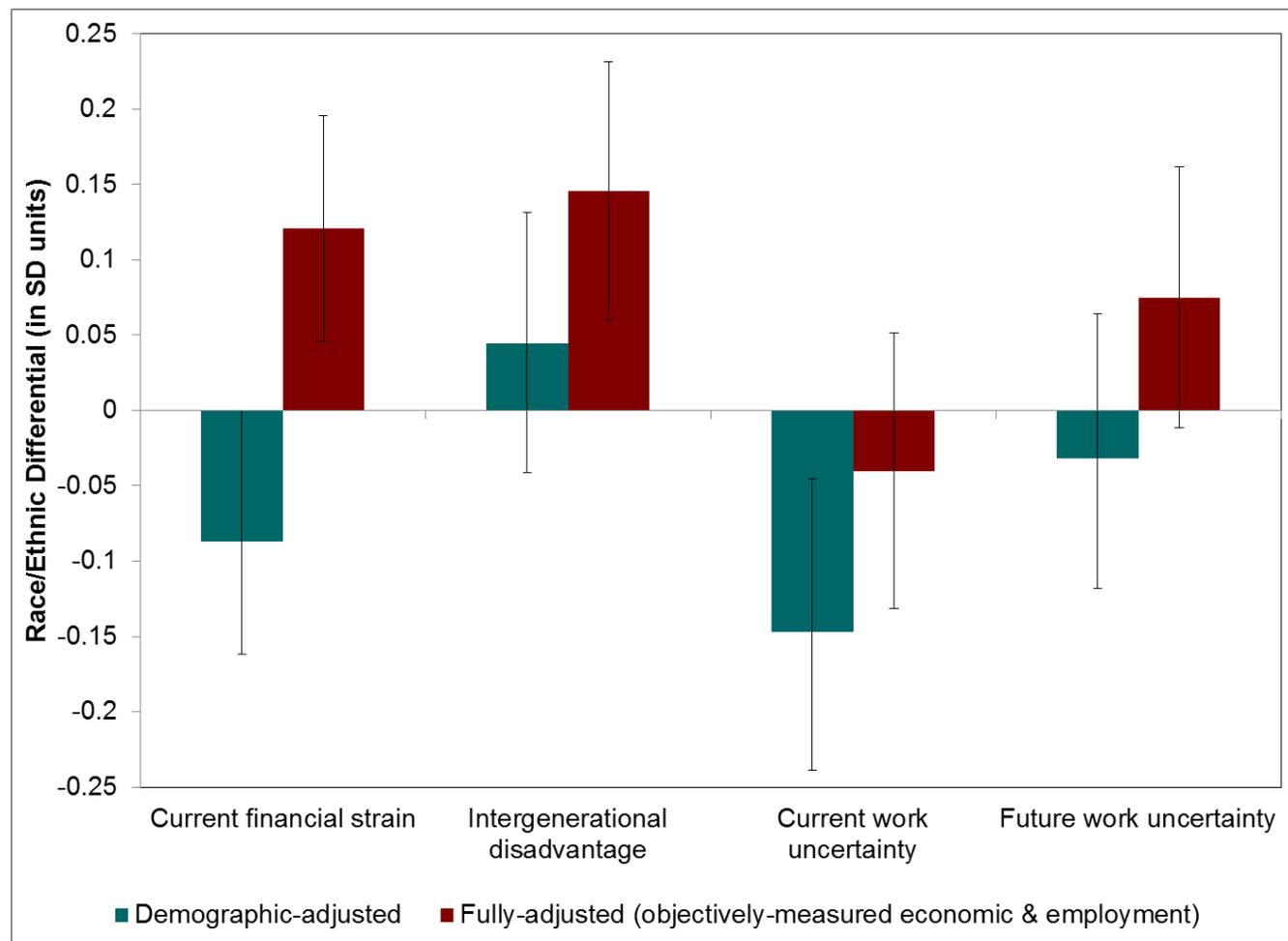
Note: Based on the coefficient for race/ethnicity from Model 1, which adjusts for demographic factors, and Model 3, which adjusts for objective measures of economic and employment circumstances (Tables S1 & S2). A positive value means that non-Latino whites report higher levels of economic distress than minorities. Error bars indicate the 95% confidence interval for each estimate.

Table 1. Descriptive statistics for analysis variables, weighted

	Pooled Waves M1 & R1 (*N*=5632)	Wave M1 1995-96 (*N*=3034)	Wave R1 2011-14 (*N*=2598)
Demographic characteristics			
Male, %	47.8	47.7	48.0
Age (20-76), mean (SD)	47.1 (13.6)	45.5 (13.5)	49.0 (13.6)
Cohort group			
Born before 1943,[a] %	19.9	31.2	6.7
Early Baby Boomers (1943-53), %	23.3	26.1	20.0
Late Baby Boomers (1954-64), %	29.5	30.2	28.7
Born after 1964,[b] %	27.3	12.5	44.7
Non-Latino white, %	81.2	81.6	80.7
Married or living with a partner, %	70.8	72.2	69.1
Objective economic/employment measures			
Educational degree (1-12), mean (SD)	6.6 (2.5)	6.3 (2.4)	7.0 (2.5)
Current/previous occupation			
Never employed,[c] %	0.8	0.9	0.7
Farming/labor/military, %	23.9	27.1	20.2
Service/sales/administrative, %	37.3	38.0	36.5
Management/business/financial, %	16.2	15.9	16.7
Professional, %	21.7	18.2	25.8
Household income (0-833),[d] mean (SD)	62.0 (65.8)	69.5 (73.9)	53.3 (53.6)
Wage/salary income (0-698),[d] mean (SD)	41.1 (46.2)	41.3 (41.1)	40.9 (51.5)
Net assets (0-1820),[d] mean (SD)	121.3 (281.6)	105.8 (275.3)	139.4 (287.8)
No assets or a deficit, %	40.3	36.1	45.2
Spouses' educational degree (1-12),[e] mean (SD)	6.9 (2.5)	6.5 (2.4)	7.4 (2.5)
Spouses' current/previous occupation [e]			
Never employed,[f] %	0.9	1.1	0.5
Farming/labor/military, %	24.5	27.1	21.3
Service/sales/administrative, %	35.9	38.5	32.7
Management/business/financial, %	17.4	14.9	20.3
Professional/, %	21.4	18.3	25.2
Covered by health insurance, %	86.8	87.5	86.0
Current employment status			
Working, %	68.3	71.3	64.8
Neither working nor retired, %	17.5	15.9	19.4
Retired, %	14.2	12.8	15.9
Maximum unemployment spell			
Never unemployed,[c] %	44.4	39.0	50.8
<6 months, %	16.9	22.9	10.0
6 months to <2 years, %	16.4	16.8	15.9
2+ years, %	23.3	21.4	23.4
Spouses' current employment status[e]			
Working, %	69.0	68.7	69.5
Neither working nor retired, %	16.4	18.4	14.0
Retired, %	14.5	12.9	16.6
Perceived financial strain			
Index of current financial strain (-1.98 to 2.9), mean (SD)	0.0 (1.0)	-0.1 (0.9)	0.1 (1.1)
Current financial situation (0-10=worst), mean (SD)	4.2 (2.4)	4.1 (2.2)	4.3 (2.5)
Future financial situation (0-10=worst), mean (SD)	2.9 (2.2)	2.6 (2.0)	3.2 (2.4)
Control over financial situation (0-10=no control), mean (SD)	3.7 (2.6)	3.4 (2.5)	4.0 (2.7)
Money to meet needs (0-2=not enough), mean (SD)	1.2 (0.7)	1.2 (0.6)	1.2 (0.7)

	Pooled Waves M1 & R1 (*N*=5632)	Wave M1 1995-96 (*N*=3034)	Wave R1 2011-14 (*N*=2598)
Difficulty paying monthly bills (0-3=very difficult), mean (SD)	1.3 (0.9)	1.3 (0.9)	1.3 (1.0)
Intergenerational financial disadvantage (0-6=a lot worse off), mean (SD)	2.8 (1.9)	2.6 (1.8)	3.0 (1.9)
Perceived employment uncertainty			
Current work situation (0-10=worst), mean (SD)	3.0 (2.6)	2.8 (2.4)	3.3 (2.8)
Expected future work situation (0-10=worst), mean (SD)	2.6 (2.6)	2.4 (2.5)	2.9 (2.7)

[a] Includes the Silent Generation (1925-1942, although only those born in 1938 or later were observed at both waves) and, in the M1 wave, the late GI Generation (i.e., those born in 1920-24, who represent the tail end of the GI Gen born in 1901-24).

[b] Includes Gen X (1965-79, although only those born in 1970 or earlier were observed at both waves) and in R1 wave, some of the early Millennial cohorts (i.e., those born in 1980-89).

[c] A small number of respondents (*N*=22 at M1, *N*=11 at R1) had never been employed. For the purposes of modeling, these respondents are coded to the reference group for occupation (farming/labor). The questions about unemployment spells were skipped if the respondent had never been employed for six or more months (*N*=137 at M1, *N*=54 at R1); we coded those respondents as never having been unemployed.

[d] Expressed in thousands of 1995 dollars.

[e] Among those who were married or living with a partner (*N*=2087 at M1, *N*=1812 at R1). For the purposes of modeling, spouse's education is coded as high school graduate and spouse's occupation is coded to the reference group (farming/labor) for those who were not married/partnered (*N*=947 at M1, *N*=786 at R1).

[f] If the respondent's spouse/partner had never been employed (*N*=23 at M1, *N*=8 at R1), spouses' occupation was coded to the reference group (farming/labor) for modeling purposes.

SUPPLEMENTARY MATERIAL

Data Sources

For M1, the post-stratification weights and supplemental data on income sources were obtained directly from MIDUS. All other data came from the public-use database (https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/2760; https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/36532).

Construction of Relative Socioeconomic Status

Our measure of relative socioeconomic status (SES) is based on six components: respondent's (and spouse's) education, respondent's (and spouse's) occupation, annual household income, and current net assets of the respondent and spouse. Education of the respondent and his/her spouse/partner (if applicable) are measured in terms of degree completion, with 12 categories ranging from less than 8th grade (=1) to completion of a professional degree (e.g., PhD, MD, JD, etc.) (=12). We categorize the current or most recent occupation of the respondent and his/her spouse/partner (if applicable) into four categories: Farming/Construction/Maintenance/Production/Transportation/Military (=1); Service/Sales/Admin/Office (=2); Management/Business/Financial (=3); Professional (=4). Measures of economic deprivation include annual household income (for the respondent, spouse/partner if applicable, and all other family members living in the household) and total net assets (for the respondent and spouse/partner combined).

At both waves, income from each source (i.e., wages/salary, social security, government assistance, and all other sources such as pensions, investments, child support, or alimony) is reported in categories. We code income from each source to the mid-point of the range within each category and then sum across all sources to compute total income. At M1 (1995-96), income from each source is top-coded at \$200,000 (except government assistance, which is top-coded at \$50,000); 1.3% of respondents have top-coded income from one or more sources. At R1 (2011-14), income is top-coded at \$300,000; 0.8% of respondents have top-coded income from at least one source. Top-coded values are recoded to the harmonic mean of a Pareto distribution (von Hippel, Scarpino, and Holas 2016). As suggested by von Hippel (2016), we compute the harmonic mean of a Pareto distribution with α equal to the maximum of one or $\frac{\ln(n_{B-1}+n_B)-\ln(n_B)}{\ln(l_B)-\ln(l_{B-1})}$, where n_B is the number of cases in the top category; n_{B-1} is the number of cases in the penultimate category; l_B is the lower bound of the top category; and l_{B-1} is the lower bound of the penultimate category. Restricting alpha to a minimum of one ensures that the value of the top category is no greater than twice the lower bound of that category. We are unable to make an equivalence adjustment based on household size and composition because MIDUS did not collect that information at wave 1

Assets are also reported in categories at M1 and coded to the mid-point of each range. At R1, the dollar amount of assets is recorded. Total net assets are coded to zero if the respondent reports no assets or a deficit. At both waves, assets are top-coded at \$1,000,000 (2.3% of the sample at M1 and 8.2% at R1) and are recoded to the harmonic mean of a Pareto distribution as described above for income.

To adjust for inflation, we convert income and assets to 1995 dollars using the Consumer Price Index (CPI) provided by the Bureau of Labor Statistics (https://data.bls.gov/cgi-bin/cpicalc.pl). For each respondent, we determine the multiplier for income/assets based on the year in which s/he completed the phone interview and the CPI multiplier for the median month for MIDUS interviews conducted during that year (using April 1995 as the reference, which is the median month among interviews completed in 1995). Thus, the multipliers for each survey year (based on the median month for interviews in that year) are: 1995 (April)=1.0; 1996 (July)=0.97; 2011 (December)=0.67; 2012 (May)=0.66; 2013 (August)=0.65; 2014 (March)=0.64.

Both income and assets are strongly and positively skewed. Therefore, we apply a square root transformation to those items. Within each cross-sectional survey wave, we standardize the six items and then compute an SES index as the average across relevant items (e.g., six items if married/partnered and both respondent and spouse/partner have ever been employed; three items if not married/partnered and respondent has never been employed; Cronbach's α=0.75). We convert the resulting SES score to a percentile rank (1-100) based on the

weighted distribution within each survey wave. Finally, we rescale the percentile rank to range from 0 (1st percentile) to 1 (99th percentile), so that a one-unit change represents the difference between a person in the bottom versus the top percentile of the SES continuum.

REFERENCES

von Hippel, Paul T., Samuel V. Scarpino and Igor Holas. 2016. "Robust estimation of inequality from binned incomes," *Sociological Methodology* 46(1): 212-251.

Figure S1. Smoothed bivariate plots of perceived economic distress by birth cohort at MIDUS waves M1 (1995-96) and R1 (2011-14)
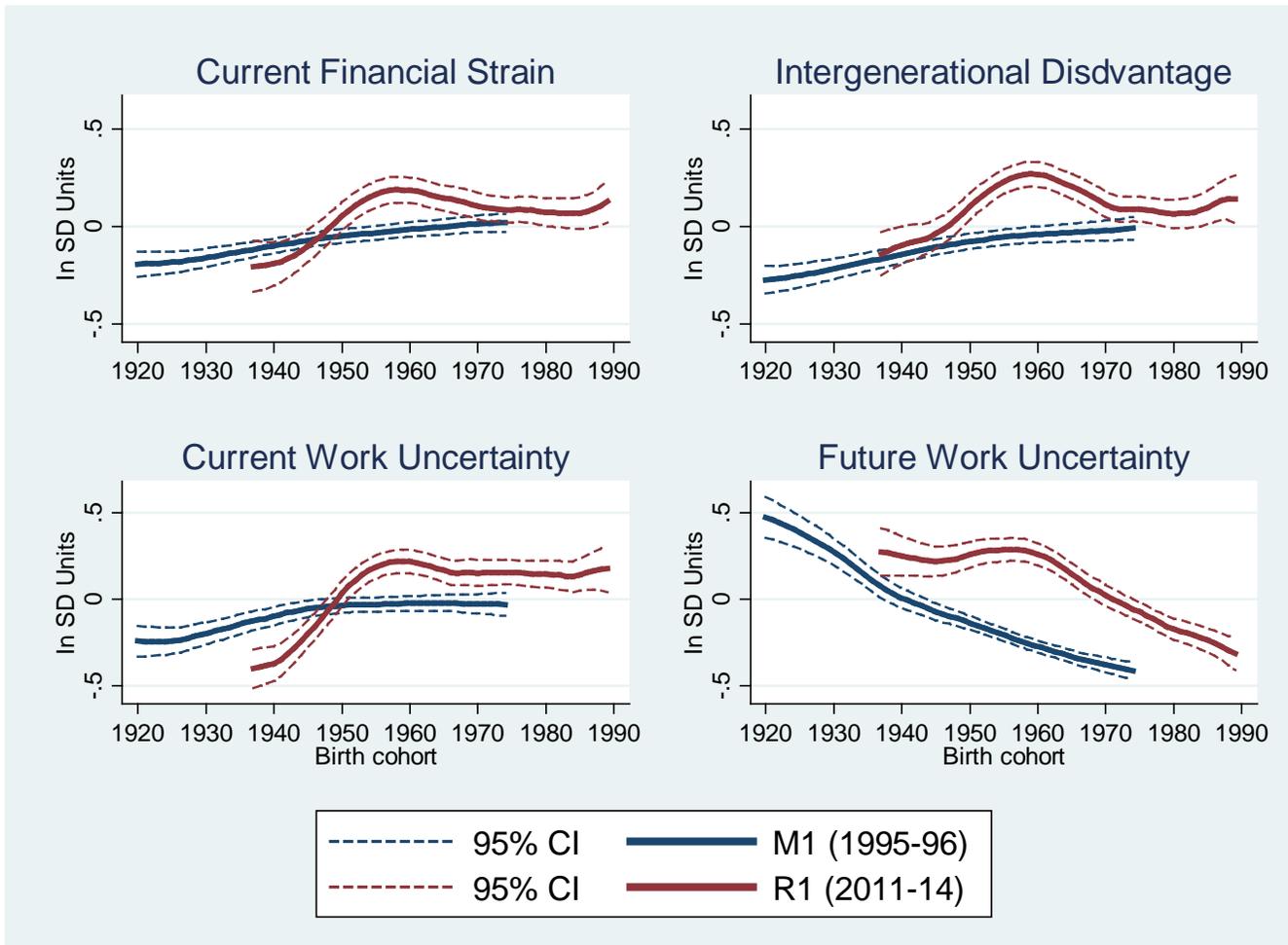
Note: These plots are produced using local mean smoothing (see endnote 5 for details). Variables on the y-axis are scaled in terms of standard deviation units, where higher values indicate more strain/uncertainty. For example, a value of zero on the outcome variable indicates that the smoothed mean for individuals in the specified birth cohort is equal to the overall mean for the pooled sample (both waves combined), whereas a value of 0.5 would indicate a level half a standard deviation higher than the overall mean. At Wave M1 (1995-96), most of the respondents came from cohorts born between 1920 and 1970, but there were two respondents from the 1971 cohort and one respondent from the 1974 cohort. The sample at Wave R1 (2011-14) came predominantly from cohorts born between 1937 and 1986, although there were six respondents from the 1987 cohort, two from the 1988 cohort, and one from the 1989 cohort.

Table S1. Coefficients from models predicting perceived financial strain, pooled data from MIDUS Waves M1 (1995-96) and R1 (2011-14), *N*=5632

	Index of Current Financial Strain[a]			Intergenerational Financial Disadvantage[a]		
	(1)	(2)	(3)	(1)	(2)	(3)
Male	-0.062*	-0.061*	0.046	-0.109***	-0.106***	-0.044
Age - 40	-0.004	-0.004	0.006*	-0.003	-0.003	0.005
Cohort group						
Born before 1943	-0.071	-0.097	-0.138	-0.136	-0.140	-0.173
Early Baby Boomers born 1943-53)	-0.017	0.040	-0.016	-0.002	0.033	-0.028
(Late Baby Boomers, 1954-64)	--	--	--	--	--	--
Born after 1964	-0.000	-0.026	-0.019	0.036	0.018	0.037
Non-Latino white	-0.087	0.008	0.121**	0.045	0.092*	0.145***
Not married/partnered	0.334***	0.126***	0.069	0.375***	0.280***	0.188**
2011-14 *(Late Baby Boomers)*	0.291***	0.626***	0.374***	0.394***	0.468***	0.277**
2011-14 x Born before 1943	-0.334***	-0.322***	-0.142	-0.327***	-0.321***	-0.136
2011-14 x Early Baby Boomers	-0.188*	-0.194*	-0.105	-0.276**	-0.286***	-0.175*
2011-14 x Born after 1964	-0.224*	-0.213*	-0.183*	-0.314**	-0.307**	-0.275**
Relative SES[b]	--	-1.061***	-0.710***	--	-0.578***	-0.378*
2011-14 x Relative SES	--	-0.652***	-0.506***	--	-0.126	-0.054
Education[a]	--	--	0.064**	--	--	0.092***
Current employment status						
(Working)	--	--	--	--	--	--
Neither working nor retired	--	--	0.347***	--	--	0.082
Retired	--	--	-0.028	--	--	-0.149**
Maximum unemployment spell						
(Never)[c]	--	--	--	--	--	--
<6 months	--	--	0.052	--	--	-0.070
6 months to <2 years	--	--	0.138***	--	--	0.081
2+ years	--	--	0.106**	--	--	0.102*
Occupation						
(Farming/labor/military)[d]	--	--	--	--	--	--
Service/sales/administrative	--	--	0.122**	--	--	0.074
Management/business/financial	--	--	0.183**	--	--	0.021
Professional	--	--	0.223***	--	--	0.021
Income[a,e]	--	--	-0.138***	--	--	-0.114***
Net assets[a,e]	--	--	-0.182***	--	--	-0.102***
No assets or deficit	--	--	0.256***	--	--	0.054
Covered by health insurance	--	--	-0.233***	--	--	-0.247***
Spouses' education[a,f]	--	--	-0.004	--	--	0.033
Spouses' employment status						
(Working)[f]	--	--	--	--	--	--
Not working or retired	--	--	0.084	--	--	0.037
Retired	--	--	-0.151**	--	--	-0.196***
Spouses' occupation						
(Farming/labor/military)[f]	--	--	--	--	--	--
Service/sales/administrative	--	--	0.166***	--	--	0.103
Management/business/financial	--	--	0.123*	--	--	-0.020
Professional	--	--	0.266***	--	--	0.015
Constant	-0.010	0.499***	-0.028	-0.140*	0.134	0.127

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

[a] All outcome variables and continuous predictors are standardized based on the pooled distribution (so that effects can be compared across time and across outcomes).

[b] Relative SES is scaled from 0 (1st percentile) to 1 (99th percentile); thus, the main effect represents the difference between a person in the bottom 1% and the top 1% of the SES continuum at M1 (1995-96).

[c] Includes those never employed for six or more months (*N*=191).

[d] Includes those never employed (*N*=33).

[e] Square root transformed.

[f] For those who are not currently married or living with a partner (*N*=1733), indicated by a dummy variable in the model, spouses' education is coded to the modal category (high school graduate) while spouses' employment status and occupation are coded to the reference group.

Table S2. Coefficients from models predicting perceived employment uncertainty, pooled data from MIDUS Waves M1 (1995-96) and R1 (2011-14), *N*=5632

	Current Work Uncertainty[a]			Future Work Uncertainty[a]		
	(1)	(2)	(3)	(1)	(2)	(3)
Male	0.081*	0.080*	0.146***	0.045	0.045	0.040
Age - 40	-0.007	-0.007	0.001	0.023***	0.023***	0.027***
Cohort group						
Born before 1943	0.017	-0.007	-0.065	-0.111	-0.132	-0.121
Early Baby Boomers born 1943-53)	0.014	0.037	-0.027	-0.059	-0.025	-0.052
(Late Baby Boomers, 1954-64)	--	--	--	--	--	--
Born after 1964	-0.139*	-0.147*	-0.123	0.011	-0.003	0.015
Non-Latino white	-0.147**	-0.095	-0.040	-0.032	0.031	0.075
Not married/partnered	0.287***	0.166***	0.179**	0.214***	0.073*	0.170**
2011-14 *(Late Baby Boomers)*	0.357***	0.633***	0.432***	0.180*	0.436***	0.333**
2011-14 x Born before 1943	-0.538***	-0.532***	-0.339***	-0.418***	-0.410***	-0.296**
2011-14 x Early Baby Boomers	-0.248**	-0.245**	-0.154	-0.321***	-0.323***	-0.229**
2011-14 x Born after 1964	-0.089	-0.084	-0.032	-0.054	-0.048	-0.039
Relative SES[b]	--	-0.524***	-0.547**	--	-0.679***	-1.045***
2011-14 x Relative SES	--	-0.556***	-0.467***	--	-0.505***	-0.471***
Education[a]	--	--	0.067*	--	--	0.027
Current employment status						
(Working)	--	--	--	--	--	--
Neither working nor retired	--	--	0.629***	--	--	0.356***
Retired	--	--	0.028	--	--	0.079
Maximum unemployment spell						
(Never)[c]	--	--	--	--	--	--
<6 months	--	--	0.111**	--	--	-0.018
6 months to <2 years	--	--	0.206***	--	--	-0.053
2+ years	--	--	0.075	--	--	-0.038
Occupation						
(Farming/labor/military)[d]	--	--	--	--	--	--
Service/sales/administrative	--	--	-0.036	--	--	-0.043
Management/business/financial	--	--	0.023	--	--	0.055
Professional	--	--	0.058	--	--	0.193**
Income[a,e]	--	--	-0.021	--	--	0.045
Net assets[a,e]	--	--	-0.020	--	--	-0.046*
No assets or deficit	--	--	0.123**	--	--	0.027
Covered by health insurance	--	--	-0.183**	--	--	-0.040
Spouses' education[a,†]	--	--	-0.003	--	--	0.005
Spouses' employment status						
(Working)[†]	--	--	--	--	--	--
Not working or retired	--	--	-0.033	--	--	0.024
Retired	--	--	-0.205**	--	--	-0.273***
Spouses' occupation						
(Farming/labor/military)[†]	--	--	--	--	--	--
Service/sales/administrative	--	--	0.155**	--	--	0.149**
Management/business/financial	--	--	0.121	--	--	0.227***
Professional	--	--	0.195**	--	--	0.333***
Constant	-0.029	0.225**	0.035	-0.215***	0.111	0.076

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

[a] All outcome variables and continuous predictors are standardized based on the pooled distribution (so that effects can be compared across time and across outcomes). Outcome variables are coded so that higher values indicate worse evaluations (i.e., more uncertainty).

[b] Relative SES is scaled from 0 (1st percentile) to 1 (99th percentile); thus, the main effect represents the difference between a person in the bottom 1% and the top 1% of the SES continuum at M1 (1995-96).

[c] Includes those never employed for six or more months (*N*=191).

[d] Includes those never employed (*N*=33).

[e] Square root transformed.

[f] For those who are not currently married or living with a partner (*N*=1733), indicated by a dummy variable in the model, spouses' education is coded to the modal category (high school graduate) while spouses' employment status and occupation are coded to the reference group.