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Abstract:

Social scientists have documented vast racial disparities in labor market outcomes such as hiring and firing decisions, compensation, and opportunities for occupational advancement. Yet little is known about the racial patterning of job displacement (permanent involuntary layoffs), a remarkably common labor market outcome. Using data from the Displaced Worker Survey, covering nearly four decades of displacements, 1981-2017, we provide the first systematic analysis of Black/white displacement disparities. We find that Black workers were nearly always more likely to be displaced than whites, but the Black/white disparity has grown over time, with excess Black displacement doubling for women and tripling for men since the 1990s. Additionally, during the 1990s, being Black replaced lacking a college degree as the better predictor of displacement. To evaluate whether these disparities are explained by compositional differences—i.e. whether Black workers were more likely to be employed in displacement-prone jobs than whites—we decompose Black-white displacement disparities by job characteristics including occupation, industry, and public vs. private sector, and indexes reflecting displacement risk and job quality. The results support arguments that the public sector has become less protective for Black workers, but generally provide scant evidence that compositional differences explain the rise of racial disparities in displacement.

Job displacement—permanent layoffs—represents an important dimension of economic insecurity (Gandolfi and Hansson 2011, Hollister 2011, Western et al. 2012, Brand and Thomas 2014, Brand 2015). Displacement is distinct from more commonly studied deleterious labor market outcomes, such as unemployment, in two ways. First, it represents a form of potential downward mobility that may upend individuals’ expectations about their economic trajectories (and potentially lay to waste any investments made on the basis of those expectations, whether job-specific human capital or home ownership). The displaced represent the unluckiest of the lucky: they managed to get a job, but were unable to keep it. In contrast to jobs that are defined from the outset as temporary or contingent, a displaced job is one that was conceived as permanent (or, at least, indefinite) but then lost, for reasons not of individual performance, but of the declining fortunes of a type of job. Following from that, displacement is distinct for a second reason: it is a crucial link between changes in the job structure and negative individual-level outcomes. To the extent that displacement is a major driver of unemployment, therefore, it may bear on debates such as whether low employment and low wages represent a “skills mismatch” between workers and jobs (e.g., Faberman and Mazumder 2012).

Like other labor market outcomes, job displacement may be experienced unequally by workers of different races. Yet whether, and when, this is true is a surprisingly under-studied question (Hollister 2011). In spite of important work by economists, sociologists, and demographers, even the basic racial patterning of job displacement has not received sustained attention. We do know some basic facts: Throughout the 1990s, Black men experienced greater job turnover (voluntary and involuntary transitions between jobs) than white men (Jaeger and Stevens 1999, Neumark et al. 2000); that, across the 1980s and 1990s, nonwhite men and women sometimes (though not always) had higher rates of involuntary job termination than white men and women (Gottschalk and Moffitt 2000); and that job ending was more likely to result in unemployment spells for nonwhite men and women (Gottschalk and Moffitt 2000). During recessions, Black men are more likely than white men to transition from employment to unemployment (Couch and Fairlie 2010) and spend longer out of a job following mass layoffs (Andersson et al. 2018), and Black workers who experienced any type of job loss during the Great Recession were slower to find new employment than white workers (Couch et al. 2018), a pattern also observed following displacements outside of recession contexts (Spalter-Roth and Deitch 1999). And sociologists have shown racial disparities in layoffs in particular occupational

groups, generally professionals or managers (Kalev 2014, McBrier and Wilson 2004, Wilson and McBrier 2005, Wilson and Roscigno 2010), which may depend on firm-level organizational decisions (Kalev 2014). Black workers also perceive themselves as having more employment insecurity than white workers with similar job characteristics, human capital, and job loss histories (Yang and Zheng 2015), although this difference attenuates in recent years (Kuroki 2015). But how displacement is distributed by race, and how that has changed since the Reagan years, remains unknown. These questions seem particularly pressing in the context that, following the Great Recession, unemployment among the recently displaced reached a historic high of 40% (Farber 2015).

This paper seeks to establish the basic patterning of Black and white job displacement in the United States. Using the Displaced Worker Survey (DWS), a supplement of the Current Population Survey (CPS), we offer the first systematic analysis of racial disparities in job displacement during the full DWS series, covering displacements occurring between 1981-2017. Previous research (Farber 2011, 2015) has shown that displacements in the aggregate increased little from 1992-2006, and then sharply in the Great Recession and the years following. Our results show that these aggregate trends mask important changes in how both low and high risk occupations and industries, in 1990s and early 2000s and in the and late 2000s respectively, were distributed by race. We show that Blacks were substantially more likely than whites to be displaced in the 1980s, but that these disparities fell across the 1990s—before rising across the 2000s and remaining high at least until very recently. This pattern contrasts with most other major dimensions of racial stratification in the labor market, most of which have fallen over the last four decades, and offers a distinctive picture of how economic insecurity has been distributed across recent decades in the United States.

Based on broader knowledge of social stratification in labor markets, one might expect a variety of alternative patterns in displacement disparities. First, one might expect cohort movement toward parity, with Black disadvantages in layoffs that decline over time, at a generational remove from the era of explicit segregation in the labor and housing markets. Black/white disparities in poverty, broadly speaking, fit this pattern (Pew Research Center 2013), as do neighborhood characteristics (Firebaugh and Farrell 2016). Alternatively, one might expect that disparities would change little over time, similar to the aggregate pattern in Black/white family income disparities (Bloome 2014, Manduca 2018). Or perhaps, extending elements of the

classic Wilson (e.g., 1987) story into more recent years, one might expect Black disadvantages to be driven by Blacks being confined to high-displacement occupations and industries. In fact, what we find is not very consistent with any of these loose expectations. But it is broadly consistent with expectations derived from a more specific line of research arguing that changes in the public sector have exacerbated disadvantages (e.g., in upward and downward mobility) for public-sector Black managers in particular (Wilson et al. 2013, Wilson and Roscigno 2016). Our results confirm elements of this story and place it in context of the whole economy, while revealing a distinctive temporal pattern for racial disparities among public-sector high-status occupations.

Our goal is to quantify the Black/white disparities in displacement for men and women and how those disparities vary across subpopulations—not to attempt to causally isolate an “effect” of race on displacement net of a large number of control variables. The primary goal is therefore descriptive. We additionally demonstrate that these disparities are not associated with obvious shifts in the occupational and industrial structure of Black and white employment, which effectively rules out certain obvious causal hypotheses, i.e., that increasing disparities in some populations simply reflect changes in Black and white locations along some key economic dimensions. Our results therefore identify a previously unrecognized pattern that is likely to be highly consequential for Black and white economic and psychosocial wellbeing—in particular, as a possible explanation for notably high risk of downward mobility for Blacks (McBrier and Wilson 2004, Landry and Marsh 2011, Chetty et al. 2018, Wilson and Roscigno 2018)—while raising new questions about how those patterns arise.

Racial disparities in job displacement: A surprising unknown

What is known about race and displacement falls broadly into four categories. First, a single article made a major study of racial disparities in men’s displacement using the 1984-1992 DWS survey waves. Fairlie and Kletzer (1998), building on Kletzer (1991), found that Black men were 30 percent more likely than white men to be displaced, and spent longer subsequently unemployed. These 1980s displacement disparities were partially associated with Blacks’ lower educational attainment and overrepresentation in what were then high-displacement occupations. This analysis has never been comprehensively updated to reflect displacements since 1991.

Second, many studies of displacement include race as a control variable and show,

incidentally to their main argument, that displacement is more common for Black workers compared to white workers (e.g., Boisjoly et al. 1998, Hippel 1999, Farber 2015; cf. Fallick 1996, which asserts that displacement rates vary little by race). Third, numerous studies show that displacements can have unequal consequences for workers in different racial groups, without documenting the racial patterning of the displacement rate itself. For example, averaging displaced workers across 1981-2013, non-whites were about 10 percentage points less likely than whites to be employed in a new job following displacement, after controlling for gender, age, education, and tenure in the lost job (Farber 2015). As elaborated in the next section, such studies generally find that economic consequences of displacement are worse for Blacks, but health and other psychosocial consequences may be worse for whites. Fourth, studies document racial disparities in displacement in particular occupational categories, particularly elite jobs (Wilson and McBrier 2005).

What is not known is the basic racial patterning of displacement in the entire U.S. labor market, beyond the 1980s. Are Blacks always more likely to be displaced, across periods and segments of the labor market? How has the degree of Black disadvantage, and its location in the economy, changed over time?

These surprising omissions may reflect that fact that, at least in a stylized picture of disciplinary concerns, settling the facts about unequal experiences of displacement fall into a void between the dominant concerns of economics and sociology. Racial disparities in income and wages (e.g., Kornrich 2009, McCall 2006) or wealth (Oliver and Shapiro 1996, Conley 1999) are the bread-and-butter of much sociological work on stratification (for better or worse [Morris and Western 1999]), but sociologists have generally paid little attention to layoffs despite calls for attention to rising economic insecurity (Kalleberg 2009, 2011; Hollister 2011; Western et al. 2012)—with some notable exceptions, particularly work by Jennie Brand on a variety of consequences of displacement (Brand 2006, 2015; Brand and Burgard 2008; Brand and Thomas 2014). Thus, sociologists have devoted substantial effort to understanding racial disparities but have paid relatively little attention to layoffs, while economists have done quite the reverse.

The relative absence of studies of displacement within sociology is particularly striking because the large-scale loss of jobs in particular industries is at the center of the research that, perhaps more than any other, has framed the sociology of the racial distribution of economic

outcomes in the post-Civil Rights Era: William Julius Wilson’s series of arguments that the movement of good jobs out of cities—alongside the flight of middle-class Blacks facing expanded residential opportunities—created the context for deep poverty and joblessness among urban African-Americans (particularly Wilson 1987, Wilson 1996). The economic restructuring that drives mass layoffs is the backdrop to the “spatial mismatch” between urban Black workers and stable employment. And, indeed, firms moving from cities to suburbs to experience substantial declines in Black, but not white, employment (Miller 2018). Job displacement has thus, at least implicitly, always been at the core of sociological investigations of racial inequality in the recent decades in the United States. Yet there has been nearly no direct examination of Black/white inequalities in layoff experiences in the economy as a whole, or how those are associated with particular industries.

What we do know is that displacement patterns in general have evolved substantially since the early 1980s. In the 1970s and 1980s, at the beginning of a decades-long economic restructuring, displacement was largely confined to blue-collar jobs in industries like manufacturing; in the 1990s, displacement spread widely beyond those occupations, including into white-collar professional jobs (Kletzer 1998, Farber 2001). While displacement was diversifying in this respect, public perception during the 1990s was that jobs generally were becoming less stable (Kletzer 1998), though whether this was, in fact, true has been extensively debated (see Neumark 2000, Hollister 2011, and Kalleberg 2011 for reviews of the conflicting evidence). In general, studies found little evidence of increase in short-term job tenure (Gottschalk and Moffitt 1999, Jaeger and Stevens 1999), which is most associated with involuntary employment changes, but declines over the 1980s and 1990s in long-term tenure (Valetta 1999). This mixed pattern in the 1990s characterized the experience for white workers more than Black workers, who experienced clearer and more consistent declines in job stability (Hollister 2011). As Hollister (2011: 314) notes, more recent research on job instability moved away from examining race-specific trends.

Job instability—voluntary and involuntary turnover—per se is not necessarily negative; it can reflect movement to better jobs. However, there is some evidence of increased economic insecurity for all workers since the 1970s (Western et al. 2012)—even before the Great Recession, in which the incidence and duration of unemployment following displacement was unprecedented (Farber 2015)—and for Black workers in particular. Beginning in the 1980s,

Black workers had increasing inflows into unemployment and decreasing outflows back into employment (Badgett 1994). In general, Black workers are always more likely than white workers to be unemployed, to a degree that varies with the business cycle (and with somewhat different cyclicalities for Blacks compared to whites, likely reflecting industry differences [Hoynes et al. 2012]). This unemployment disparity partly reflects that Blacks are slower to find a replacement job after losing a job, both in and outside of recession contexts (e.g., Spalter-Roth and Deitch 1999). In that sense, the economic consequences of displacement may be greater for Blacks (e.g., Farber 2011, Gould-Werth 2018). However, we have indirect evidence that the sources of disproportionate Black unemployment include unequal exposure to, as well as harms stemming from, displacement, because Black workers' rate of transition from employment to unemployment rises more sharply than whites' during economic downturns (Couch and Fairlie 2010), even for workers with long job tenure (DiPrete 1981). This suggests that Black workers may bear the brunt of layoffs.

To the extent that Blacks are disproportionately displaced, it may reflect the consequences of occupational and industrial segregation confining Black workers to less secure jobs. This hypothesis is plausible in the context that such economic segregation continues to account for a significant degree of Black-white income inequality (Kornrich 2009, Branch 2011). Moreover, Black workers have long been more concentrated in a relatively small number of occupations than white workers—a pattern that has declined since the 1970s but nevertheless persists (Landry and Marsh 2011)—which might make Black workers as a group more prone to large swings in their displacement rate, to the extent that displacements occur more heavily in particular occupations at particular moments.

But displacement disparities might also reflect unequal risk for Black and white workers in broadly the same kinds of jobs, reflecting more fine-grained occupational segregation or different experiences even for workers in the same micro-occupation. McBrier and Wilson (2004) summarize many reasons to expect this pattern in the context of professionals and managers, including that the segregation of social and professional networks makes it harder for Black managers to demonstrate their skills and contributions to white executives. Thus, in a pattern that we might summarize as “Black employees and applicants don’t get the benefit of the doubt,” Black workers have much more formalized and predictable upward mobility paths—generally only achieving high-level jobs after acquiring many formal credentials and working in

just-lower jobs for the same employer, allowing their skills to be evaluated directly (Wilson et al. 1999, Wilson and Maume 2013)—but much less formalized and predictable downward mobility paths, with downward mobility and job dismissal patterns that are much harder to predict from their individual human capital and job characteristics (McBrier and Wilson 2004, Wilson 2005). These differences in how Black and white employees are evaluated might manifest in different within-firm displacement risk once layoffs become imminent.

Displacements, of course, can also reflect direct racial discrimination. For example, in an analysis of discrimination cases verified by the Ohio Civil Rights Commission between 1986 and 2003, Byron (2010) found that private sector employers sometimes used cost-cutting as a rationale for discriminatory firings, while disguising them to workers and the public as displacement; in contrast, documented discrimination in the public sector generally affected promotions, rather than dismissals.

To the extent that Blacks are exposed to displacement, the larger backdrop is a cruel historical irony: through Civil Rights struggle, Black and Hispanic workers gained access to a number of industries just as those industries became less secure. As MacLean (2006: 100) puts it in her recounting of the struggle against discriminatory hiring in the construction trades, “Blacks were being promised employment in an industry that was about to hemorrhage jobs.” These arguments have a modern reflection in arguments that the public sector, long the source of employment stability and upward mobility for Black workers (DiPrete 1987), has ceased to play this role (Wilson et al. 2013, Wilson and Roscigno 2016). Wilson et al. focus on wages, promotions, and downward mobility, and show that, while the 1980s was a period of relative racial parity among public-sector workers, by the mid-2000s, the public sector had developed the greater inequities that long characterized the private sector, particularly as public-sector entities moved relatively closer to organizational decision metrics more traditionally associated with the private sector, such as emphasizing profitability over formalized and constrained (e.g., seniority-based) decisions about who to lay off. These results will prove to be a key point of connection with our own.

This paper aims to clarify the extent and sources of racial disparity in job insecurity by providing the first systematic national-level analysis of the Black/white disparity in job displacement, 1981-2017.

Why study racial stratification in job displacement?

When so much is known about racial stratification in the labor market generally, why study displacement in particular?

First, displacement may be an important mechanism of downward mobility. Most obviously, it can produce unemployment and exits from the labor force among those who were previously employed in permanent jobs. Displacement may also result in subsequent moves to less desirable employment—employment with lower pay, status, or stability—or underemployment (Farber 2000, 2011), particularly for workers who switch industries as a result of displacement (Neal 1995, Morgan and Cha 2010). Displacement results in substantial long-term earnings losses on average, whether because of the loss of job-specific human capital, loss of seniority, replacement of a job that is a high match to workers' skills with one that is a lower match, or other mechanisms (Carrington and Fallick 2015). An initial displacement may also produce a cycle of job instability, if displaced workers remain in an insecure occupation or industry in which they will necessarily be a new hire in their subsequent job (and thus potentially the first to be displaced again), or if displaced workers take insecure or contingent work out of economic necessity. Thus, displacements can have cascading consequences (Stevens 1997, Couch et al. 2018), although early insecurity does not inevitably last (Damaske and Frech 2019). This risk is likely heightened for recent years, since displacements during the Great Recession were unusually likely to be followed by unemployment, and those unemployment spells lasted unusually long (Farber 2015). In the economy as a whole, not until 2015—seven years after the Great Recession—did unemployment return to 2007 levels, suggesting that recent displacements may be especially meaningful. The economic consequences of displacement can be catastrophic, including bankruptcy (Keys 2018).

Downward mobility is a pronounced risk for Black men in particular (McBrier and Wilson 2004, Landry and Marsh 2011, Chetty et al. 2018, Wilson and Roscigno 2018), and displacement patterns may partially produce this risk. Earlier studies (Wilson and Roscigno 2010) have shown that young Black professionals are more likely than young white professionals to have the compound outcome of being laid off and subsequently taking a lower-status job. Such disparities early in professional careers can contribute to career-long differences in trajectories, contributing to economic segregation between races over many decades; work focused on managers and professionals has found that layoffs are an important mechanism in limiting Black employment

in those professions (Wilson and McBrier 2005, Wilson and Rosciglione 2018). But it is not clear to what extent this difference in trajectories reflects disparities in being displaced, and to what extent it reflects differences in what happens afterward. Similarly, in the Great Recession, Black workers who have been displaced were unemployed for longer, and if they got a job, were more likely to take one at a lower wage level than the job they lost, than white displaced workers (Farber 2011), a result that echoes findings from earlier work on high-tech workers (Ong 1991). Since Black workers typically have fewer resources to weather economic shocks, job losses may be pivotal moments in reproducing labor market stratification by race even if displacements are distributed evenly by race (Gould-Werth 2018).

Second, displacement can be highly consequential for individual outcomes more broadly than un- and under-employment. These include negative consequences for psychological well-being, health, and marriages (Gandolfi and Hansson 2011), and even generalized distrust (Laurence 2015) and children's educational attainment and well-being (Brand and Thomas 2014). Some of these consequences may reflect residential mobility associated with displacement (Huttenen et al. 2018). Since being displaced represents being knocked off one's trajectory, it may have different psychological and economic consequences than never having a job (or a job that was designated as stable) in the first place. These consequences include the social-psychological consequences of having one's expectations thwarted, as well as consequences stemming from investments workers may have made in the expectation that a job would continue (e.g., human capital investments, mortgages). In general, displacement consequences, across subpopulations, face a trade-off along the economic and social-psychological dimensions: when displacement is common, such as during a recession or in a high-displacement subpopulation, the economic consequences are magnified but the socio-psychological consequences are lessened, and when displacement is rare, the reverse is true (Brand 2015). Thus, for example, following the Great Recession, stroke deaths associated with unemployment increased for white, but not Black, men (Falconi et al. 2016), and workers with college degrees generally face larger health losses associated with displacement (Pearlman 2015).

Third, displacement may have unique community-level effects. To the extent that some areas are dominated by certain industries, or even certain firms, mass layoffs will sometimes contribute to a concentrated increase in joblessness in a community (Valletta 2000). There are substantial racial differences in the concentration of joblessness, with jobless urban Black men

being far more geographically concentrated than jobless urban white men (Wagmiller 2007). Layoffs, since they are often a collective phenomenon happening simultaneously to many workers, may be a mechanism by which residential and economic segregation produce community-level variation in joblessness and other forms of downward economic trajectories. Moreover, the concentration of layoffs in certain industries, occupations, and places may affect even those who are not themselves displaced, if they live in fear of displacement, or are tied in families and other networks to those who are (Brand 2015).

Finally, displacement represents a distinct form of job loss in that it is not rooted in individual performance. In that sense, it may seem to offer a unique insight into how structural economic forces are producing economic insecurity for some workers: layoffs reflect something collective about the employer and its workers as a whole, not just something about the worker who is displaced. For example, since employment in the federal government has been a crucial path to upward mobility for African-Americans and women (DiPrete 1987), generally greater stability in the public sector (Farber 2009) raises the possibility that the African-American population may have experienced a polarized insecurity experience, characterized both by unstable jobs in the private sector and by stable public sector jobs.

This argument about the distinctive character of displacement, relative to other job loss, should not be over-stated, because the lines between displacement and other forms of job loss are blurry in both directions. Layoffs may in practice reflect individual performance: some employers may have structural reasons for laying off a certain number of workers, but may use individual performance—along with a variety of other subjective evaluations—to determine who to lay off (Boisjoly et al. 1988), and some reported displacements may be a pretext for individual firing (Byron 2010). And while the distinction between displacement and performance-based firing often seems to have normative overtones, this may be unwarranted; for example, if a worker quits, or is fired from, a job because they no longer have a reasonable means of transportation or childcare that allows them to get to work, their job loss might be considered to be fundamentally uncoupled from their skills in a way that is often assumed about layoffs (cf. Gibbons and Katz 1989).

Although layoffs may have a unique social role as a form of job loss culturally understood as blameless, what is really distinctive about them is that they originate with a change in the circumstances of an employer, rather than a worker. The clear centrality of the employer to

displacements extends not only to corporations, but also to the public sector, where displacements directly link governmental decisions to patterns of individual mobility and group disparity (Wilson et al. 2012). In that sense, displacement connects macro-level changes in economic structure and political economy to the cascade of community and individual consequences that can follow in its wake.

Data and Methods

We use as data the Displaced Worker Survey (DWS), a supplement to the Current Population Survey (CPS) in even-numbered years beginning in 1984, with the most recent wave in January 2018. The survey asks retrospectively about displacements over the previous three years (or, until 1992, the previous five years, a complication we address below). To maximize comparability over a change in the survey instrument in 1994, we limit displacements to the “Big 3” reasons (Farber 2015): a displacement is a (permanent) job lost because a plant closed, a position or shift was abolished, or there was insufficient work. Jobs that are structured as contingent, temporary, or seasonal at the outset do not generate displacements when they end.

We operationalize race as non-Hispanic Blacks vs. non-Hispanic whites. We focus on these racial groups because they are large, because their composition is not changing substantially due to immigration during this period, and because the economic marginalization of Blacks and economic dominance of whites are central features of the American class structure. Because micro-occupations are heavily segregated by gender, we present results separately for men and women.

The DWS’s chief virtue over the main survey alternatives, the PSID (e.g., Boisjoly et al. 1998) and the NLSY (e.g., Bernhardt et al. 2000), is that its sample size suffices to simultaneously explore displacement, time, race, gender, and (separately) key demographic and economic dimensions such as public/private status, occupation, or industry. Many recent studies (Jacobsen et al. 1993, Couch and Placzek 2010, Davis and von Wachter 2011, Song and Von Wachter 2014) use administrative data, which is ideal for documenting economic consequences of displacement (Flaen et al. 2015) but less ideal for documenting demographic risk; indeed, none of these studies document risk by race.

Displacement is conceptualized as involuntary job loss for reasons other than individual performance. The DWS endeavors to identify every person aged 20 or older in each survey

household who was displaced during the previous three years.¹ Because the DWS is linked to the full CPS, the DWS allows estimation of nationally-representative rates of displacement for the non-institutionalized population.²

We operationalize time as the year of the survey, reflecting displacements in the three years prior, rather than the year of displacement. This seemingly-counterintuitive choice avoids a potentially significant form of bias in the estimated disparities arising from the fact that only a single displacement is recorded in each survey for each worker, no matter how many times they may have been displaced during the survey observation window. Thus, the seemingly more natural measure of the year of displacement could substantially bias the estimated disparities if some groups of workers are more likely than others to have been displaced multiple times.³ Operationalizing time as the survey year and conceptualizing the outcome as the rate of experiencing at least one displacement in a three-year period avoids this problem. Farber (2011), who also makes this choice, argues that this operationalization does not overly distort the

¹ The DWS likely does not capture all and only the people it should. The main risk of false negatives comes from the survey instrument asking whether respondents lost their job for various prompted reasons (some of which qualify as displacement and some do not) or “some other reason.” Those who select the latter are excluded from the study without further inquiry. This is particularly problematic because the immediately prior question asks whether a job was lost for any of a list of qualifying reasons “or another similar reason,” and there is some concern that the prior reference to other “similar” reasons primes respondents to describe genuine cases of displacement in those terms for some reason or other (Esposito 1999). An additional source of false negatives is respondents’ potentially faulty memories of displacements that occurred several years prior (Evans and Leighton 1995, Song 2007). The main risk of false positives, on the other hand, comes from voluntary job leavers. This risk was likely exacerbated by a wording change in 1996, which made the question determining sample eligibility syntactically simpler at the cost of placing greater emphasis on the possibility of leaving (not losing) a job (Esposito 1999). Comparing trends in the DWS to trends in employment-to-unemployment transitions in the March CPS, Stewart (2000) argues that the DWS do show evidence of a jump in false positives in 1996 compared to earlier years. Nevertheless, the DWS is generally considered to provide good data in an area plagued by measurement and conceptual problems (Farber 1997).

² That the CPS sampling frame is limited to the non-institutionalized is a potentially significant form of bias. This sampling frame excludes those living in prison, military barracks, college dormitories, or residential health care facilities. Given extreme racial disparities in incarceration, this choice of population can generate a significantly distorted view of racial inequality when the non-institutionalized population sampled by the CPS is erroneously assumed to reflect the national population as a whole (Pettit 2012). In the case of displacement, those who are never at risk of displacement because they are incarcerated simply do not enter into the analysis. However, because the measure is retrospective, the exclusion of institutionalized populations can bias results even for the non-institutionalized population. For example, if a non-institutionalized worker is laid off and subsequently is imprisoned, or joins the military, before the DWS layoff reporting window has ended, that worker is not eligible to appear in the sample even though they were displaced as a non-institutionalized worker. If this outcome is more likely to occur for Blacks than whites, the measured displacement disparities will be biased. Here, we simply note that this potential form of bias is conservative for finding racial disparities in displacement.

³ For example, if Black workers were more likely than white workers to be displaced multiple times between 1997 and 1999, the 2000 survey may underreport 1997 displacements for Blacks (who might report a 1999 displacement) more severely than for whites.

dynamics of the business cycle. However, this choice does mean that some displacements are eligible for reporting in two surveys (for example, a displacement in 1999 could be reported in 2000 or in 2002). This means that the displacement risk associated with each survey cannot be combined with other years to estimate a cumulative risk, even at the population level (i.e., even apart from the fact that displacements are not evenly distributed across individuals).

The DWS changed its displacement reporting window from five years to three years in between the 1992 and 1994 surveys. To make the series comparable over time, we estimate three-year windows for the 1984-1992 surveys. DWS respondents are asked when they last worked in the job they were laid off from, so it is possible to restrict these surveys to those workers displaced in the last three years. However, some portion of those who report a displacement from a longer-standing job four or five years ago were also subsequently displaced from a job held more briefly during the previous three years, yet the DWS will capture only one displacement. To deal with this problem, we follow Farber (2003), who—drawing on results from PSID data showing displacements over the life course—estimates that 30% of displacements four years ago, and 27% of displacements five years ago, would be followed by a displacement in the three years prior to the survey. We use this same adjustment factor to create artificial three-year reporting windows for the 1984-1992 surveys, using a procedure described in detail in Rodriguez and Zavodny (2003: 501). Our most striking set of results involves changes between the 1990s and the 2000s/2010s, and as such, is not sensitive to this adjustment.

In order to lose a job, one had to have a job in the first place. Displacement is a clearly negative experience relative to keeping a permanent job, but not clearly negative relative to never having had one in the first place. Thus, racial disparities in displacement will be understated, and displacement will lack a clear interpretation as a negative experience, if they are estimated without regard to who had a job that might have been displaced. However, the CPS lacks a measure of employment over the previous three years. In order to estimate the population at risk of displacement, we use the combined set of two groups: anyone who experienced displacement, regardless of their current employment status, and anyone who is currently employed, regardless of their past displacement status. This operationalization also follows Farber (2011)⁴, and is the standard choice (e.g., Rodriguez and Zavodny 2003).

⁴ This standard measurement strategy will tend to exacerbate business cycle fluctuations when survey years occur during times of unusually high employment following three years of unusually low displacements (resulting in underestimated low displacements), or conversely, when survey years occur during times of unusually low

In some analyses, we analyze displacement conditional on occupation and industry. The CPS records occupations and industries at four levels of detail. We use the broadest levels, since the more detailed levels are too detailed for a sample in which the positive cases per year number only in the thousands. The occupational and industrial codes have changed several times during the survey range of 1984-2018, with the most important changes occurring between 1992 and 1994, and between 2002 and 2004. For this reason, we use occupational and industrial crosswalks developed by IPUMS (their OCC90 and IND90 crosswalks). The crosswalks allow consistent categories over time at the expense of imposing categories that may make less sense for the modern context than the more recent categories do; however, the latter cost is mitigated since we are using the broadest categories, which have changed far less than occupations and industries at a more detailed level of description.

Our main disparity measure is the Black/white displacement ratio, but we also analyze absolute differences in the level of Black and white displacement when we decompose these differences to explore their relationship to economic segregation. Since this is a descriptive analysis, we are not trying to estimate an overall model of displacement risk. However, we use logistic regressions (using a fairly flexible specification designed to control for business cycle fluctuations) merely to verify that the main descriptive results are statistically significant, in order to ensure that our descriptions reflect signal rather than noise.

Disparity decompositions

One basic question about growing Black/white disparities in job displacement is whether Blacks are sorted into more displacement-prone types of jobs, or alternatively, whether Blacks are displaced more frequently than whites from the same types of jobs. We address this question with a series of decompositions. A general constraint on categorical decompositions is the relatively small cell size in the DWS: Black CPS respondents who have experienced a displacement—after adjusting the early surveys down to a three-year reporting window—range across surveys from 111-336 women and 124-424 men (the number of displaced whites surveyed is substantially higher, reflecting larger population size). Accordingly, we decompose Black-

employment following three years of unusually high displacements (resulting in overestimated high displacements). It will tend to understate cyclical effects when high employment follows high displacement (resulting in underestimated high displacement) or vice-versa (resulting in overestimated low displacement).

white disparities in displacement in terms of categorical job characteristics—occupation, industry, and public vs. private sector—at a broad level of description, and use continuous indexes reflecting putative displacement risk and job quality to capture more detailed variation in occupations.

For the categorical decompositions, we use a standard decomposition (Preston et al. 2001:28) but with the mean displacement in each category (occupation, industry, or sector; hereafter, “occupation” for simplicity) recentered around the economy-wide mean:

$$\begin{aligned} \bar{D}^b(t) - \bar{D}^w(t) = & \sum_i \left(\bar{d}_i^b(t) - \bar{d}_i^w(t) \right) \frac{c_i^b(t) + c_i^w(t)}{2} \\ & + \sum_i \left(c_i^b(t) - c_i^w(t) \right) \left(\frac{\bar{d}_i^b(t) + \bar{d}_i^w(t)}{2} - \frac{\bar{D}^b(t) + \bar{D}^w(t)}{2} \right) \end{aligned}$$

This decomposition breaks the total difference in Black and white displacement in each year t , $\bar{D}^b(t) - \bar{D}^w(t)$, into two components, both summed up over individual occupations i . The first component represents the portion of the displacement difference attributable to the difference in Black and white displacement *within* specific occupations. It is the Black-white difference in displacement inside occupation i , $\bar{d}_i^b(t) - \bar{d}_i^w(t)$, times the (unweighted) average portion of the Black and white populations in occupation i , $\frac{c_i^b(t) + c_i^w(t)}{2}$ (c stands for composition). The second component represents the portion of the displacement difference attributable to the difference in Black and white representation *between* occupations. It is the difference between the portion of the Black and white populations employed in each occupation, $c_i^b(t) - c_i^w(t)$, times the (unweighted) mean Black and white displacement in that occupation, relative to the overall unweighted mean, $\frac{\bar{d}_i^b(t) + \bar{d}_i^w(t)}{2} - \frac{\bar{D}^b(t) + \bar{D}^w(t)}{2}$. In the between-occupation component, the recentering around the mean (unweighted) Black and white displacement in each year has no effect on the total between-occupation (or industry, etc.) component (summed up over all occupations), but changes the sign and magnitude of this component for individual occupations to make them more interpretable. Thus, for example, the displacement level of a high-displacement occupation like laborers will remain a positive number even after recentering

around the mean, while the displacement level of a low-displacement occupation like managers will become negative.⁵

The categorical decompositions analyze the absolute difference in Black-white displacement, rather than the ratio or the logit (as analyzed in the analyses of the displacement disparities in the total population and demographic subgroups), because this allows us to use a decomposition without an interaction term, allowing for a more parsimonious interpretation.

The continuous measures of job characteristics we employ are individual job tenure and a series of measures describing detailed occupations: job routinization and offshorability, median log income in the occupation, and the proportion of workers in an occupation that work in large firms. These measures are described in Appendix 1; all are based on the most detailed occupational categories collected by the CPS. For the decompositions in terms of continuous measures of job characteristics, we use Oaxaca-Blinder decompositions using logistic regression.

Results

1. Black/white disparities in displacement are growing

General trends—Displacement is a common outcome for whites and, even more, for Blacks. Panel A of Figure 1 shows Black (dashed) and white (solid) displacement probabilities over time, for men (Black) and women (blue). Across survey years, reported displacement probabilities (over the previous three years) vary from 4%-9% for white women, 4%-11% for Black women, 5%-12% for white men, and 6%-17% for Black men. Although displacement rates are higher for men than women within each race, white men and Black women generally have similar rates of displacement.

Panel B of Figure 1 shows the ratio of Black to white displacement probabilities. The ratios are generally similar for men and women, although men show a spike in displacement disparities

⁵ If we did not rescale the between-occupation components to be relative to the (unweighted) mean displacement, then the decomposition would implicitly compare each occupation to a displacement rate of 0%. Since all occupations have positive displacement, this would have the consequence the any occupation that is disproportionately white would appear to be reducing the Black/white displacement disparity. Instead of measuring the effect of employment in a particular occupation by imagining a counterfactual of zero displacement, we think it is more natural to imagine the counterfactual that workers experience the average displacement rate across occupations. For example, with this rescaling, the fact that whites are disproportionately employed—and thus, that Blacks are *under-employed*—in the professionals and managers occupational category contributes positively to the overall Black/white disparity because those heavily white occupations have low displacement levels.

during major recessions (captured in the 1984 and 2010 surveys) and women do not. In the median-disparity survey year in the 1990s, Black women and men respectively were 18% and 17% more likely than whites of the same gender to have experienced displacement (down from 19% for women and 27% for men in the 1980s surveys). By the 2000s, this became 24% for women and 26% for men, and by the 2010s, Black women were 27% more likely than white women and Black men were 34% more likely than white men to have been displaced. Over all survey years, the greatest disparities reflected displacements in the years leading up to the Great Recession, with, compared to same-gender counterparts, 37% higher displacement for Black women in the 2006 survey and 54% higher displacement for Black men in the 2008 survey.

In general, ratio measures, such as those that we use here, tend to exaggerate disparities when levels are low. Yet we find relatively low Black/white displacement ratios in the low-disparity 1990s and larger disparities in the 2000s and 2010s, across both high-displacement and relatively lower-displacement years.

Both the Black/white displacement disparity and the rise in the disparity over time are statistically significant for both men and women, as estimated in logistic regressions reported in Table 1. Because our goals are descriptive, we focus attention on the graphs rather than the regression coefficients, but use regressions to verify that our main descriptive results are unlikely to merely reflect sampling variation. Our main baseline specification (the year-race model) and two alternative specifications (the year-year²-race model and the decade-race model) all show a statistically significant increase in racial disparities over time. In the decade-race model, this is specifically an increase in disparities in the 2000s (for both genders) and 2010s (for men only) compared to the 1990s.⁶ All models adjust for business cycle fluctuations.⁷ Year variables are

⁶ The decade-race model treats the 1990s as the baseline decade because it is the low point of displacement disparities, allowing a more straightforward comparison across decades using the regression coefficients.

⁷ The regressions adjust for whether the period covered by the sample year included a major or a minor recession. Major recessions were reflected in the 1984 and 2010 surveys, and minor recessions in 1992, 2002, and 2004. These variously reflect recessions in 1981-1982, 1990-1991, 2001 [captured in two DWS surveys], and 2007-2009. We do not treat 2008 as a recession survey because it reflects only the very beginning of the Great Recession, which began in December 2007.

Both of those indicators, for major and minor recessions, are interacted with race in the baseline (year-race) model. Since the interaction of race with minor recessions is not significant for either gender, we omit it from the subsequent regressions reported below. We include interactions of race with major recessions in all regressions, although this coefficient is statistically significant, and substantial, only for men; we include it for both genders to estimate comparable models for men and women.

While the graphs and the displacement probabilities reported are weighted to be nationally representative, the regressions are unweighted, following Winship and Radbill (1994). The unweighted logistic regression

always centered around 2000.

The increasing racial disparity in displacement contrasts with the patterning of other labor market variables. Figure 2 shows the inequality in displacement (for men and women together) compared to other key outcomes: poverty among those aged 18-64, unemployment, and median individual income (among those with any income).⁸ Inequality is measured as the Black/white ratio for negative outcomes (displacement, poverty, unemployment) and the white/Black ratio for income so that higher numbers always indicate greater Black disadvantage. To make displacement comparable to measures that are reported close to contemporaneously with experience, Figure 2 shifts the year axis for displacement back by 1.5 years, effectively attributing displacements to the middle of the reporting window they fall into, rather than their survey year. The Black/white displacement disparities in Figure 2, aggregated over gender, are attenuated compared to the gender-specific disparities shown in Panel B. This reflects that the white employed population, far more than the Black employed population, is disproportionately male, and men have substantially greater displacement risk than women. Still, Figure 2 shows that, even in this gender imbalanced aggregate, displacement disparities rise across the 2000s and generally stay high. This contrasts with the trend in unemployment and, especially, working-age poverty, which show diminishing disparities over time. Displacement disparities offer a different picture of the trends in Black/white economic stratification than do these other major economic variables.

However, the individual income disparities shown in Figure 2 fall until the 2000s, then hold steady until the Great Recession, when they rise and then stay high through 2017. This is

specification precludes the adjustment to displacement probabilities that we use in the main results to adjust the five-year reporting window of the 1984-1992 surveys to match the three-year reporting window used subsequently; for this reason, we also adjust for whether the survey had a five-year reporting window. We omit race interactions with that indicator because they were not significant in any specification.

⁸ Poverty rates are taken from the Census Bureau table “Poverty Status of People, by Age, Race, and Hispanic Origin: 1959 to 2018,” downloaded from <https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-poverty-people/hstpov3.xls> on October 30, 2019.

Income data are taken from the Census Bureau tables, “Race and Hispanic Origin of People by Median Income and Sex: 1947 to 2018,” downloaded from <https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-income-people/p02.xls> on October 30, 2019. Median incomes are averaged over gender and interpolated over the year 1983, when the observation for non-Hispanic whites was missing. Incomes represent non-Hispanic whites vs. all Blacks.

Unemployment rates are estimated by the authors, for non-Hispanic whites and non-Hispanic Blacks, from CPS monthly data.

broadly similar to the pattern of rising Black/white disparities across the 2000s and 2010s that we find for displacement. Gender-disaggregated results (not shown) show that white/Black income ratios generally fall for men until the Great Recession, then grow rapidly and stay high, whereas for women they rise in the 1980s, fall sharply across most of the 1990s, and then begin a more gradual rise beginning around 2001. These increasing income disparities contrast with the disparities in household income, which have held steady over time (Bloom 2014, Manduca 2018), but are consistent with other very recent research on income disparities for men. Bayer and Charles (2018) find either shrinking and then widening, or constant, Black/white income disparities in the full population of men (not limited to those with a job), depending on the measure used. The rising disparities in displacement that we document, combined with the income disparities shown here and those found by Bayer and Charles, together suggest a general picture of recently increasing Black/white economic inequality that is somewhat at odds with the picture formed by research focused on other economic outcomes, like poverty and unemployment.

But the Bayer and Charles results also suggest an important difference between income and displacement. Where they find shrinking and then widening income disparities, this reflects changes in the overall income dispersion, rather than changes in Black and white sorting into relatively lower and higher incomes: the *ordering* of Black and white workers by income has been largely static, even as the monetary rewards associated with each position have become more similar or dissimilar over time. Thus, they find shrinking and widening disparities when they use a measure that is sensitive to the shape of the overall income distribution, and constant disparities when they use a measure that is not. However, the changing shape of the distribution of income, a continuous outcome, has no clear analogue for the binary outcome of displacement. The widening disparities we find in displacement represent something distinctive: a true increase, over recent decades, in the extent to which Black workers are at the bottom of the economic hierarchy. All these facts together create an overall picture of a fundamental increase in the Black/white disparities in economic risk that is reflected in measures of displacement but hidden in more widely-used outcomes.

Trends by educational status—Over time, being Black has come to predict displacement as much as has lacking a college degree. Figure 3 shows displacement levels for women (Panel A)

and men (Panel B) by race and education. For both women and men, during the 1980s, Blacks with a college degree had lower displacement risk than whites without a college degree. During the 1990s or early 2000s, Blacks with a college degree began to have similar displacement risk as whites without one, a pattern that persists today. Thus, the proportion of surveys in each decade in which Blacks with a college degree reported higher displacement than whites without a college degree was, for women, 0%, 20%, 40%, and 80% from the 1980s to the 2010s, and, for men, 0%, 0%, 80%, and 40%. This pattern is underscored in Table 2, which reports displacement for selected years by race, gender, and college degree status. For example, in the 2018 survey, displacements were reported by 4.5% of Black women with a college degree and 4.9% of white women without one, and by 6.2% of Black men with a college degree and only 5.1% of white men without one.

Logistic regressions reported in Table 3 (the college-year-race model) show that the general increase in racial disparities in displacement persists when controlling for college status, but also show that the protective effect of college wanes over time (in the log scale), though it does so less for Black men than white men. Thus, Black men with a college degree retain substantial advantages over Black men without a degree, even as Black men with a college degree have faced increasing risk relative to white men with no college degree.⁹ This suggests that the protective factor college provides for Black men provides more of a window into the extreme displacement rates faced by Black men without a degree than attenuated risks for those who have a degree. Indeed, displacement for Blacks without a college degree was dramatic, particularly during the Great Recession. Fully 20% of Black men without a college degree reported a displacement in the 2010 survey, capturing displacements between 2007-2009.

Trends by age—Younger workers always have high displacement and high racial disparity; for men especially, changing disparities in displacement are most dramatic among older workers. Figure 4 shows displacement disparities for men and women in five age groups, 20s-60s (ending at age 65 at the time of the survey) respectively.¹⁰ Displacement rates fall sharply with age, likely

⁹ For comparison, the fact that the college/no-college income gap has grown over time for white and, even more so, Black men (Bayer and Charles 2018: 1464). Thus, the aggregate trend in the protection provided by college has the opposite sign for displacement (shrinking) as income (growing), but in both cases, the trend for Blacks compared to whites is for college to be increasingly protective.

¹⁰ Because displacement measures are lagged, 20-year-olds at the time of the survey may have been teenagers at the

reflecting the protective effects of job tenure (analyzed in Appendix 1), industry- or occupation-specific human capital, and perhaps experienced workers sorting into more stable occupations. The greatest disparities occur in the 20s. For both women and men in their 20s, Black workers are more likely to be displaced than white workers in every survey, by amounts ranging from 18%-70% for women and 12%-61% for men.

This Black disadvantage among younger workers contrasts sharply with older workers. Among workers in their 60s, white women report more displacements than Black women in most surveys across the series, and white men report more displacements than Black men in most surveys until the mid-2000s. Beginning in the mid-2000s, however, Black men in their 60s report more displacements, and men in their 50s show a similar racial crossover (from higher white to higher Black displacements) around the same time. The age groups in between form a continuum, with younger ages generally showing larger and more consistent Black disadvantage. (However, even among workers in their 20s and 30s, disparities are smaller in the 1990s and grow substantially in the 2000s.)

The extent to which older white workers faced elevated displacement risk, compared to Black workers, is notable. Before 2000, in the median-disparity year, Black women in their 60s experienced just 55% of the number of displacements of white women in their 60s; for men, Black and white displacements were about equal. Thus, across years for women and in the early years for men, aggregate excess Black displacement was driven higher Black displacement among relatively young workers overcoming higher white displacement among older workers. But by the mid-2000s, Black disadvantage was ubiquitous across age groups for men.

By documenting a white/Black reversal in displacement risk among older workers, these results add an important nuance to earlier studies showing that displacement risk during the 1990s grew among older workers relative to younger workers (Rodriguez and Zavodny 2003). Interestingly, in 2018, Black women in all age groups were less likely than white women to be displaced.

Logistic regressions shown in Table 3 (the age-year-race model) adjust for age (centered at age 40), race, and year in a fully-interacted model. They show that the general pattern of lower displacement generally, and lower Black displacement particularly, at older ages compared to

time of displacement. When the minimum age at time of survey is limited to 25+ instead of 20+, results are similar.

younger ages is statistically significant for both women and men. The larger increase over time in displacement for Blacks at older ages, compared to the increasing disparities at younger ages, is not statistically significant in this model. However, the general increase in displacement disparities, adjusting for age, is statistically significant for both women and men.

2. Major occupational characteristics largely do not explain the growth in Black/white displacement disparities.

To understand the economic sources of Black/white disparities in job displacement, we conduct a series of decompositions. Figure 5 summarizes these analyses for women (Panel A) and men (Panel B) by showing the proportion of the Black/white disparity associated with disparities *within* (vs. between) occupation or industry, measured five ways: broad categorical occupation, broad categorical industry, public vs. private sector, degree to which the detailed occupation is routinized (and thus likely to be machine-replaceable), degree to which the detailed occupation is offshorable, median log income of the detailed occupation in the total labor force, and proportion of workers in the detailed occupation employed in firms employing at least 500 workers.¹¹ Each of these measures is described more fully above and in Appendix 1. In Figure 5, the light line at $y=.5$ indicates the point at which the within-occupation (or industry) variation moves from accounting for a minority to a majority of the total Black/white disparity.¹²

To avoid unnecessary, hard-to-interpret interaction terms, we decompose the Black/white difference in displacement rather than the Black/displacement ratio, as explained above in Equation 1. However, while both ratios increase over the series, in difference scale, women's Black-white disparity is fairly constant over time. Thus, the decompositions are most useful for understanding overall sources of differences in Black and white displacement and some sources of increase in men's disparities.

¹¹ We omit the observation for broad occupation for men in 1998 because its inclusion distorts the graph scale. For this observation, the within-occupation component was estimated as .0075289 and the between-component as -.0092021, generating a "proportion" of about 5.5.

¹² Interpreting the decomposition terms in terms of proportion explained is a heuristic that simplifies the data in two ways. First, this interpretation assumes that both components (e.g., between-occupation and within-occupation) increase the Black/white disparity. This is generally, but not always, true—reflected in the "proportions" exceeding 1 for some observations. For example, Black and white differential representation across the public vs. private sector reduces the Black-white disparity, while Black and white displacement rates within the public and private sectors increase the disparity. Second, in the case of continuous characterizations of occupation (routinization, offshorability, median log income, and firm size), the decomposition includes an interaction term that is omitted (from the numerator and denominator) in calculating these proportions.

Figure 5, broadly speaking, tells a consistent story: particularly in recent years, Blacks' elevated displacement risk stems less from being sorted into high-risk jobs than from being high risk even when they are in the same type of jobs as whites, in the senses measured here. Next, we summarize key details emerging from these analyses.

Broad occupation—First, we decompose total Black and white displacement disparities into components associated with racial differences in workers' representation in broad occupational categories and racial disparities in displacement conditional on broad occupation. We use the consistently-coded IPUMS OCC90 occupations, resulting in six occupational categories: Managerial/Professional; Technical/Sales/Administrative; Service; Farm/Forestry/Fishery; Production/Craft/Repairs; and Operatives/Laborers. (We exclude “non-occupational workers,” which includes many members of the armed forces.)

Figure 6 shows results from this decomposition for women and men. Panels A and B show the within-occupation (solid lines) and between-occupation (dashed lines) contributions to the Black/white disparities for women and men, respectively. They show that the between-occupation contribution declined from relatively high levels during the late 1980s to become only a small contributor to the total disparity, while the within-occupation component grew roughly around 2000. For men, the within-occupation component spiked dramatically during the Great Recession—accounting for nearly 4 percentage points greater displacement for Blacks in the full male population—but it was also notably high and growing before the recession.

The majority of the total disparity was associated with the between-occupation component in the 1980s for women, and was associated with the within-component in virtually all years afterward. For men, neither component was consistently larger until 2004; beginning with that survey, the racial disparity within occupations accounted for substantially more of the total disparity than did sorting between these broad occupations in every year through the end of the series. At this broad occupational level, it is greater Black risk inside specific occupations—not segregation into higher-risk occupations—that accounts for high recent disparities.

The between-occupation and within-occupation components mask a more complex story in which some occupations increase the Black/white disparity and others reduce it, at least some of the time. Panels C and D show the between-occupation components for key specific occupations for women and men respectively, and Panels E and F do the same for within-occupation

components. For both genders, we show the lowest-displacement occupation, professionals and managers, and the highest-displacement occupation, laborers and operatives; for women, we also show service, and for men, production, craft, and repairs. The distinction between production, craft, and repairs on the one hand and operatives and laborers on the other roughly tracks the distinction between skilled and unskilled blue-collar labor.

Panels C and D show that, for both men and women, Black/white displacement disparities are driven in part by the lowest-displacement occupations, professionals and managers, being disproportionately white, and the highest-displacement occupations, operatives and laborers, being disproportionately Black. Indeed, for most of the series, professional jobs were the most common occupation among white men, and laborer jobs were the most common among Black men. Meanwhile, women's disparities were also notably diminished by Black women's heavy representation in low-displacement service jobs.¹³ However, the contribution of each of those occupational components declines over time, reflecting some partial convergence of Black and white employment (for operatives and laborers) and some partial convergence of displacement levels across occupations (for professionals and managers and—for women but not for men—service). These changes are largest between the 1980s and 1990s, which, for professional and managerial occupations, makes sense: displacement extended to these white-collar jobs in large number for the first time in the 1990s, at a time when they were still overwhelmingly held by whites.

This pattern of occupational segregation, whose consequences are depicted in Panels C and D, appears as at least an equal driver of displacement disparities in the 1980s and early 1990s. But the contribution of occupational segregation declined just as disparities inside these broad occupations began to grow. The consequences of those within-occupation disparities are shown in Panels E and F. There is a particularly interesting pattern among the most desirable jobs: professionals/managers (for both genders) and crafts/production/repairs (for men), which are skilled blue-collar jobs. During the 1990s (and also, for women, the 1980s), professionals and managers who were white were generally similarly or more likely than those who were Black to

¹³ Like Black women compared to white women, Black men are heavily overrepresented in service compared to white men. However, this occupation makes a smaller difference in reducing racial disparities for men because fewer men are employed in service occupations, and the racial disparity in service employment is correspondingly smaller in absolute terms. In service jobs, Black men are consistently at elevated risk of displacement, but because the overall displacement risk is low, this disparity has limited effect on overall displacement disparities for men.

be displaced; this pattern reversed beginning with the 2004 survey. Similarly, among craft workers, white men were more likely than Black men to be displaced in every survey 1988-1998; then Black men reported substantially higher displacement 2000-2010; and since then, white men have again typically had higher displacement. Thus, for both women and men, some of the 1990s/2000s contrast between low and high racial disparities in total reflects displacements inside the most desirable jobs initially favoring Blacks, and then favoring whites.

Previous research (e.g., McBrier and Wilson 2004, Wilson and McBrier 2005) gives many reasons that Black professional and managerial workers in particular may be particularly vulnerable to displacement, but it is not obvious from these hypothesized mechanisms—such as Black managers having little *de facto* authority over white workers and little opportunity to demonstrate their value in terms widely understood by executives—why these disparities would have begun only in the mid-2000s, as our results demonstrate.

A more attenuated version of this pattern also appears at the other end of the occupational hierarchy, with Black disadvantage appearing late in the series. Thus, Black and white men who were operatives and laborers had similar displacement rates until the 2008 survey; since then, Black displacement in that occupation has been consistently higher. And in service occupations, white women had consistently higher displacement than Black women throughout the 1990s, but consistently lower displacement in the 1980s, 2000s, and 2010s. The overall pattern of low Black disadvantage in the 1990s and high Black disadvantage in the 2000s extends to the most- and least-well rewarded individual occupational categories, for both women and men.

Taken together, these results suggest that the main drivers of population-level Black/white displacement disparities over the last roughly two decades have been inside of broad occupational categories rather than between them, and that Black insecurity has grown relative to white insecurity inside some of those occupations. Because these occupational categories are quite broad, these disparities within them might reflect either disparities within detailed occupational groups or racially differential representation in detailed occupations within these broad categories. Unfortunately, the number of displacements does not allow a more detailed look at categorical occupations. But we carry out several strategies for representing detailed occupations along dimensions of continuous variation in Appendix 1.

Industry—For both women and men, Blacks are somewhat less likely than whites to be in

high-displacement industries, but Blacks are also usually more likely to be displaced within every industry. Figure 7 shows within- and between-industry decomposition components for women (Panel A, excluding construction, in which women's employment is small) and men (Panel B). In general, the protective effect of industrial segregation for Blacks is small, although it is meaningful during the Great Recession (2010 survey), reducing Black women's displacement by half of one percentage point relative to white women, and Black men's by more than three-quarters of a percentage point relative to white men. This reflects whites' overrepresentation in two industries hit especially hard: manufacturing and, for men, construction. Across the series, for both men and women, Blacks and whites are equally likely to be employed in the lowest-displacement industry, professional and related services, which grows over the series from about 13% to about 19% of men's employment and from about 33% to about 45% of women's. Yet disparities within that industry are high, with, at the median-disparity year, Black women 30% more likely than white women, and Black men 21% more likely than white men, to be displaced. Here again, employment in a relatively safe job is safer for whites than for Blacks.

Other dimensions of job characteristics—These occupational and industrial measures are broad characterizations of job characteristics, because the DWS sample sizes do not allow analyses of more fine-grained categorical variables. However, it could be that displacement disparities are closely associated with differences in Black and white employment at a more detailed level than we can examine directly (e.g., in very specific occupations within these broad categories). As an alternative, we also examine continuous features of the detailed occupations—their routinization, a proxy for their ability to be replaced by machine; offshorability; typical income; and tendency to be located in large firms—as well as the individuals' tenure in the job. As we showed above in Figure 5, however, none of these dimensions do well in accounting for displacement disparities. We give the detailed results from these analyses in Appendix 1. The overall picture that emerges is that, in terms of the dimensions of variation in jobs that we analyze, Black-white disparities, and their increase over the past two decades, are primarily located within, not between, types of jobs.

3. Changes in the public sector do help to account for rising disparities.

Public vs. private sector overall—Public/private sectoral employment is a substantial predictor of displacement, and changes in Blacks’ and whites’ sectoral employment help to account for rising disparities among women. Figure 8 shows Black and white displacement by public and private sector for women (Panel A) and men (Panel B), and between- and within-public/private sector components of the total Black/white disparity for men and women (Panel C). Black men’s and women’s initial heavy representation in the public sector reduced the displacement disparity by about half a percentage point in the 1980s through mid-1990s surveys; this advantage diminished beginning in the late 1990s.

Primarily, Blacks’ disproportionate public-sector employment reduces the overall Black-white displacement disparity because (as Figure 8 underscores) public-sector displacement is substantially lower than private sector displacement: public-sector displacement ranges across years from less than 1%-3%, while private-sector displacement ranges from 5%-12%.¹⁴ For women, public-sector employment also initially reduces Black-white disparities because those disparities are generally lower in the public sector until the 2006 survey; but from 2006-2018, women’s disparities are larger in the public sector. (Men’s public-sector disparities are noisy, reflecting men’s smaller employment numbers in this sector.)

Blacks’ disproportionate employment in public-sector jobs substantially declined over this period, to the point that the between-sector decomposition factor is nearly irrelevant in the most recent surveys. Over this series, displacement-eligible Black women’s public-sector employment declined from 27% in 1984 to 21% in 2018, while white women’s held roughly steady at around 18%. This is an important contributor to the increase in women’s displacement disparity since the 1998 survey (with dips in 2008 and 2018). The pattern for men is qualitatively similar but attenuated: the portion of displacement-eligible Black men employed in the public sector declined from 20% to 15% while white men’s hovers around 12%. Thus, a declining Black advantage in labor market location for both genders is combined with an increasing disadvantage in displacement, given location, for women only.

Public-sector managers and professionals—A prediction arising from recent literature (Wilson et al. 2013, Wilson and Roscigno 2016) is that racial disparities may have risen

¹⁴ The maximum-displacement survey in the private sector is 2010, reflecting the Great Recession; in the public sector, it is 2012, reflecting the Great Recession’s continued consequences for public-sector budgets.

specifically among managers and professionals in the public sector. Figure 9 shows displacement rates by race for managers and professionals vs. other occupations, divided by panel into the public vs. private sectors for women and men. Our results are consistent with the Wilson et al. argument that changes inside the public sector have exacerbated racial inequalities there. Figure 9 reveals several unique details in how that story extends to job displacements.

In the private sector, among non-professional and managerial occupations (the blue lines), Black displacement always exceeds same-gender white displacement, though these disparities are substantially narrowed in the 1990s compared to other decades. For private-sector managers and professionals (the Black lines), women (Panel A) show no clear racial disparity at all (though the data are noisy), and men (Panel C) have a similar pattern of disparity as other private-sector occupations, albeit at a lower level of displacement. Private-sector male managers and professionals (the Black lines) show large Black disadvantages in displacement in the 1980s and early 2000s, and no consistent Black disadvantage in the 1990s.

The public sector is different. For occupations other than professionals and managers (the blue lines), women (Panel B) and men (Panel D) show fairly consistent, but small, Black disadvantages in displacement. For managers and professionals (the Black lines), our data reveal an emerging Black disadvantage only in the mid-2000s, for both genders. These disparities are particularly stark in the Great Recession and the years immediately following it (the 2010 and 2012 surveys).

These results support the idea that the public sector was, at one time, protective for Black upward mobility in a way that has more recently been erased. However, the similarity of the racial patterning of displacements for public-sector professionals and managers to that of private-sector male professionals and managers suggests that the extension of “privatization logic” into the public sector only partially accounts for these trends (since the private sector, which was already ‘privatized,’ shows the same general pattern over time). The pattern for public-sector professionals and managers echoes the trend we see for many disparate occupations, industries, and age groups, where displacement disparities were negligible or favored Blacks in the 1990s, only to reverse in the 2000s.

Discussion

Growing disparities in consequential economic risk

Taken together, the results shown here suggest that, during the period 1981-2017, the racial patterning of displacement changed in important ways. During this period, Blacks were nearly always at elevated displacement risk relative to whites, for both men and women. But the extent of that disparity was at a historic low during the 1990s and has since risen considerably, with excess Black displacement doubling for women and tripling for men.

Over this period, the predictors of excess Black displacement also changed. In the 1980s, being Black did not predict displacement as well as lacking a college degree did, and much of the racial disparity in displacement was driven by Blacks' greater concentration in occupations that are more heavily at risk. In the intervening decades, however, these facts changed. Being Black emerged as a stronger predictor of displacement than lacking a college degree—Black men and women with a college degree came to be at higher risk than white men and women, respectively, without a college degree—and Black men's and women's elevated displacement came to be associated more with elevated risk inside broad occupational groups than with differential representation in those groups. Indeed, no other economic variable that we explored, such as industry, job routinization, or offshorability, could account for most of the Black/white disparities in displacement.

In the aggregate and in many subpopulations of women and, especially, men, Black disadvantages in displacement showed an unexpected pattern over time, falling to relatively low levels in the 1990s—or even reversing, to higher white displacement—before rising across the 2000s and much of the 2010s. These increasing disparities were particularly pronounced among (though not limited to), demographically, less advantaged workers (those without a college degree), but occupationally, desirable occupations (professionals and managers, skilled blue-collar workers). These results offer historical context to other work showing notable racial gaps in downward mobility for older professionals and managers in particular (Wilson and Roscigno 2018).

Racial disparities in job displacement are likely to be consequential for individuals and for broader patterns of labor market stratification. The distinctive age patterning of these disparities offers a lens through which to consider possible consequences of both the disparities that persist over time and the more recent increase in disparity.

Persistent disparities are concentrated among young workers, alongside high levels of displacement over all. The same is true for low-tenure workers (as shown in Appendix 1), a

category in which most young workers fall. In general, then, displacements are high and are substantially higher for Blacks among workers who may have only recently found a toehold in the permanent labor force. The consistency of the pattern for young workers suggests that, even when displacement was relatively equally distributed for Blacks and whites during the 1990s, job displacement was a potentially important mechanism establishing different economic trajectories for Blacks and whites at the beginning of their careers. Displacements among young workers carry large earnings losses, not because of lower replacement wages but because of forgone wage gains accruing to non-displaced young workers early in their job histories (Kletzer and Fairlie 1999). These consistent racial disparities in young workers may help to account for the differences in employment and wages that drive low rates of upward mobility and high rates of downward mobility for Black men compared to white men (Chetty et al. 2018). They suggest that even getting a good job early on may offer limited protection to Black workers who may not be able to keep it.

The growth in disparities in the 2000s and 2010s compared to the 1990s, however, is not confined to young workers; indeed, it seems to be driven by middle-aged workers. While displacements early in the life course can establish a less-desirable trajectory over a whole career, displacements at older ages carry their own particular harms. Workers at these ages may have made a substantial investment in a particular career (e.g., in amassing occupation-specific human capital), may have greater family responsibilities to younger and older generations than younger workers, have less time to recover an economic foundation for retirement, and may face age-related discrimination in finding new work compared to younger workers (Wilson and Roscigno 2018). They also may experience unique distress following displacement (Lassus et al. 2015).

Given a particularly high level of displacement for workers in their first three years in a job (shown in Appendix 1 and in Farber 2015), the increased disparities in displacement also raise the specter of cascading consequences, as workers who are displaced once are then at risk for subsequent displacement (Stevens 1997, Couch et al. 2018). Unequal displacement might turn out to be a key mechanism in reproducing inequalities in other consequential labor market outcomes, such as wages, unemployment, foreclosure, and bankruptcy.

What can we conclude about the potential causes of rising disparities?

Our decompositions have partially helped to locate the source of rising disparities. Some of the increase in disparity is explained by Blacks losing what were certain advantages in being insulated from displacement relative to same-gender whites in the same broad types of jobs. In particular, Blacks' disproportionate employment in the public sector was protective against displacement throughout the 1980s, but is essentially no longer protective today. This change amounts to increasing Black-white disparities, in the absolute scale, by about **1 percentage point (CHECK — 3/4 of one?)** from the 1980s until today. Similarly, Black women's overrepresentation in service occupations used to be protective against displacement and no longer is, as those occupations have ceased to be ones with notably low displacement risk.

Mostly, though, our results have shown that racial disparities in displacement—and their recent increase—are primarily located within, not between, major economic categories. What was once something of a polarized displacement experience—with Blacks at disproportionately high risk in many areas of the economy but also largely protected from displacement by overrepresentation in the public sector and key industries—has given way to something closer to a pattern of uniformly higher Black than white risk. That leaves the source of these disparities unclear. These results have a certain affinity for others showing that, among older workers, Black downward mobility is less well predicted by labor market characteristics than white downward mobility is (Wilson and Roscigno 2018), and for those showing that disparities between non-white and white unemployment rates cannot be attributed to occupational and industrial segregation (Michaelides and Mueser 2013).

Why might these disparities have persisted and increased? One obvious possibility is that employers discriminate when choosing who to lay off, as suggested by some detailed explorations of layoffs in particular employment contexts (Byron 2010). This is not the only possibility. Another is that Black workers are located in less secure parts of the economy—increasingly so over the 2000s—in ways not captured by the measures explored here. For example, it may be that Blacks and whites in similar occupations and industries are hired in segmented firms or locations, e.g., retail outlets that hire Black workers and managers in stores that serve Black customers and likewise for whites. If layoffs increasingly are concentrated in disproportionately Black segments, that might account for rising disparities. Similarly, among professionals and managers, Black workers may disproportionately work in “diversity-track” jobs such as human resources (Collins 1993), and changing patterns of layoffs in that sector may

affect Blacks in particular. Indeed, other research shows that managerial layoffs generally reduce managerial diversity (Kalev 2014), and that Blacks have lost managerial wages in the public sector in particular in the era of public sector “reform” movements (Wilson and Roscigno 2015).

Firm size is another important dimension of variation not captured in the DWS. Black workers are substantially more likely than white workers to work at large companies, which may have been relatively more immune to layoffs in the 1990s but a major source of them in the 2000s. We were able to analyze this at the occupational level and determine that displacement disparities are not associated with Black workers being disproportionately employed in occupations that tend to occur in large firms. But the available data cannot answer whether, within the same detailed occupations, Black workers face heightened risk because they are employed in different kinds of companies.

Ultimately, layoffs are a firm-level phenomenon, and individual-level data can tell us only so much about the causes—rather than the consequences—of firm-level decisions. An important avenue for addressing this question in future research is looking at decisions made by individual firms, both when they select individuals to lay off and when they select whole plants or stores to close. As a consequential economic stratifier arising directly from the decisions of individual firms, displacements would seem a prime explanatory target for “bringing the firms back in” (Baron and Bielby 1980).

Conclusion

In a broader perspective, these results fit with others that challenge the view of the long “neoliberal era” as a unitary stratification regime (e.g. Peck 2010, Collier 2012, Peck and Theodore 2012), calling attention instead to the ways that the major predictors of risk changed during those decades. Thus, in the period we examined, lack of a college degree begins as a much more salient predictor of being displaced than race, but the two converge over our series.

Our Figure 2 showed that Black/white disparities in job displacement have had a different trajectory than disparities in most other major economic cleavages and outcomes. Displacement is a distinctive harm—losing a position one has managed to gain—that is intimately tied to downward mobility, and may not operate through the same mechanisms as barriers to entry that prevent upward mobility. The invisibility to social scientists of racial inequality in who gets laid off—even as layoffs are a common experience for workers—presents us with a distorted view of

how racial inequality in labor market outcomes is evolving in the contemporary United States. Even after acquiring a permanent job, Black workers remain substantially more likely than white workers to lose that job in the context of larger shifts in the economy. Unequal job displacement may help to explain the persistence of racial inequality in economic outcomes generally, decades after the Civil Rights Movement.

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TABLES

	Year -Race		Decade-Race		Year-Year Squared-Race	
	Female	Male	Female	Male	Female	Male
Black	0.2052*** (0.0216)	0.2054*** (0.0218)	0.1646*** (0.0325)	0.1285*** (0.0334)	0.2348*** (0.0322)	0.2125*** (0.0330)
Year	-0.0120*** (0.0011)	-0.0073*** (0.0010)			-0.0101*** (0.0013)	-0.0063*** (0.0011)
Black X Year	0.0067*** (0.0017)	0.0072*** (0.0017)			0.0069*** (0.0017)	0.0072*** (0.0017)
Major Recession	0.3148*** (0.0188)	0.3997*** (0.0156)	0.3213*** (0.0206)	0.3583*** (0.0169)	0.3353*** (0.0207)	0.4133*** (0.0174)
Black X Major Recession	0.0754 (0.0514)	0.2524*** (0.0474)	0.0578 (0.0560)	0.2354*** (0.0518)	0.0898 (0.0536)	0.2535*** (0.0498)
Minor Recession	0.1855*** (0.0165)	0.1991*** (0.0143)	0.2809*** (0.0180)	0.3275*** (0.0160)	0.1706*** (0.0178)	0.1893*** (0.0155)
Black X Minor Recession	0.0538 (0.0452)	0.0212 (0.0463)			0.0324 (0.0483)	0.0160 (0.0496)
Five Year Reporting	0.0836*** (0.0229)	0.2536*** (0.0206)	0.0550* (0.0242)	0.1459*** (0.0218)	0.1284*** (0.0276)	0.2778*** (0.0242)
1980			0.1036*** (0.0219)	0.1536*** (0.0183)		
2000			-0.2613*** (0.0251)	-0.2926*** (0.0227)		
2010			-0.1880*** (0.0246)	-0.0939*** (0.0219)		
Black X 1980			-0.0487 (0.0545)	-0.0078 (0.0531)		
Black X 2000			0.1177* (0.0477)	0.1791*** (0.0494)		
Black X 2010			0.1173* (0.0503)	0.1386** (0.0505)		
Year-Squared					-0.0002* (0.0001)	-0.0001 (0.0001)
Black X Year-Squared					-0.0003 (0.0002)	-0.0001 (0.0002)
Intercept	-2.7280*** (0.0121)	-2.6039*** (0.0109)	-2.6369*** (0.0196)	-2.5091*** (0.0178)	-2.7213*** (0.0131)	-2.5981*** (0.0117)
N	428677	471699	428677	471699	428677	471699

	College-Year-Race		Age-Year-Race	
	Female	Male	Female	Male
Black	0.1908*** (0.0264)	0.1783*** (0.0248)	0.1927*** (0.0198)	0.1665*** (0.0200)
Year	-0.0160*** (0.0014)	-0.0119*** (0.0012)	-0.0120*** (0.0012)	-0.0056*** (0.0010)
Black X Year	0.0077** (0.0025)	0.0119*** (0.0022)	0.0092*** (0.0018)	0.0085*** (0.0017)
Major Recession	0.3020*** (0.0189)	0.3886*** (0.0156)	0.3109*** (0.0192)	0.4036*** (0.0158)
Black X Major Recession	0.0685 (0.0505)	0.2562*** (0.0463)	0.0657 (0.0510)	0.2590*** (0.0468)
Minor Recession	0.2032*** (0.0154)	0.2107*** (0.0137)	0.2015*** (0.0156)	0.2091*** (0.0138)
College	-0.2698*** (0.0136)	-0.2888*** (0.0115)		
Black X College	0.0074 (0.0364)	0.0009 (0.0362)		
College X Year	0.0103*** (0.0013)	0.0109*** (0.0011)		
Black X College X Year	-0.0009 (0.0035)	-0.0074* (0.0034)		
Five Year Reporting	0.0546* (0.0232)	0.2324*** (0.0207)	0.0584* (0.0234)	0.2423*** (0.0209)
Age			-0.0056*** (0.0006)	-0.0118*** (0.0005)
Black X Age			-0.0130*** (0.0016)	-0.0077*** (0.0016)
Age X Year			0.0003*** (0.0001)	0.0004*** (0.0000)
Black X Age X Year			0.0002	0.0000

			(0.0001)	(0.0001)
Intercept	-2.5730***	-2.4435***	-2.7287***	-2.5868***
	(0.0145)	(0.0126)	(0.0122)	(0.0110)
N	428677	471699	413620	452614

FIGURES

Black/White Displacement Disparities Fell and then Rose

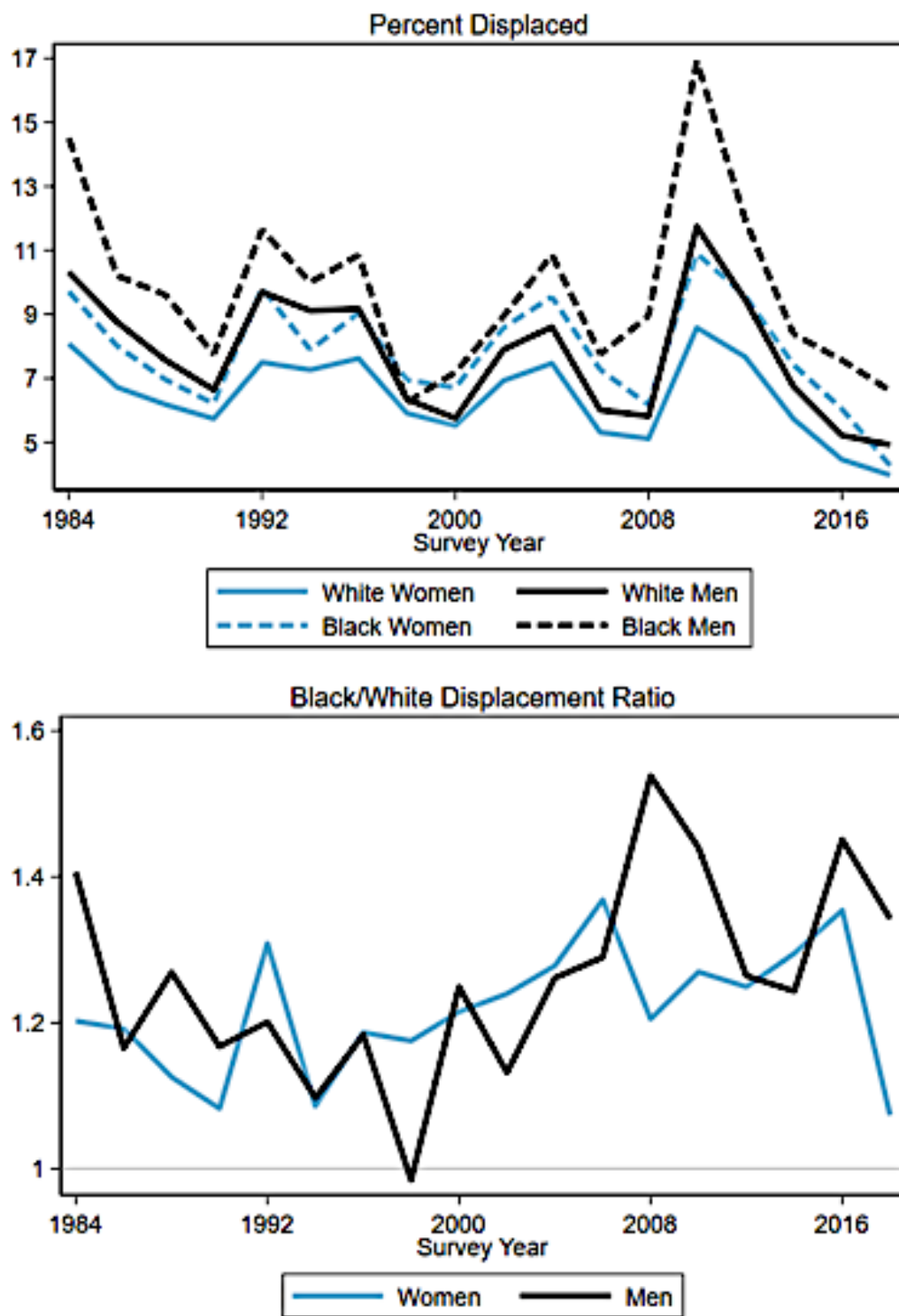


Figure 1. Black and white percent displaced (Panel A) and black/white displacement ratio (Panel B)

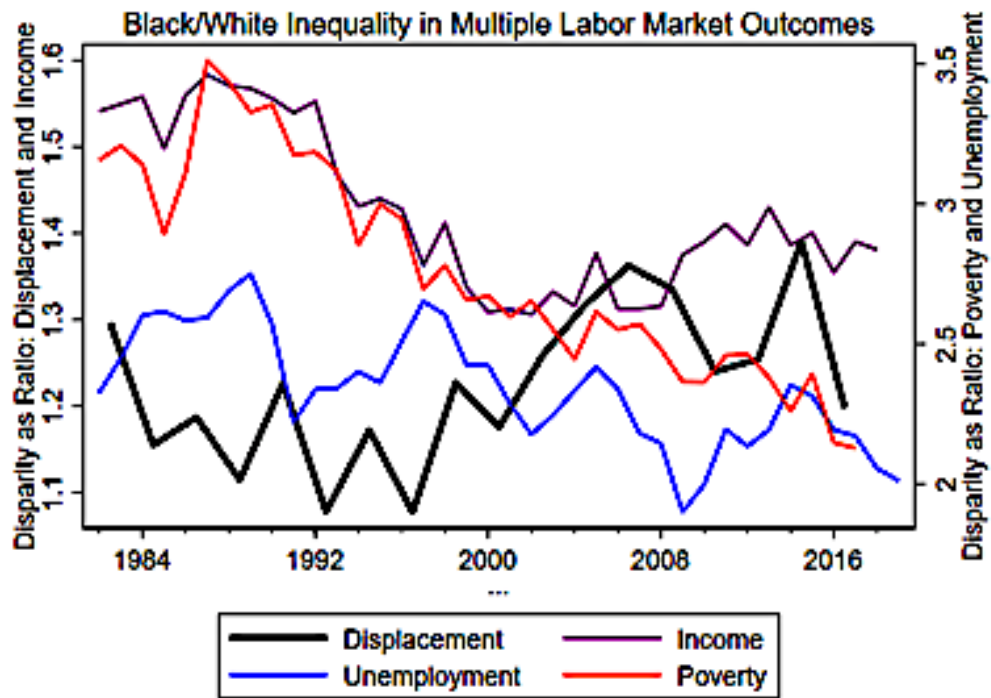


Figure 3. Black/white disparities in displacement compared to other labor market outcomes

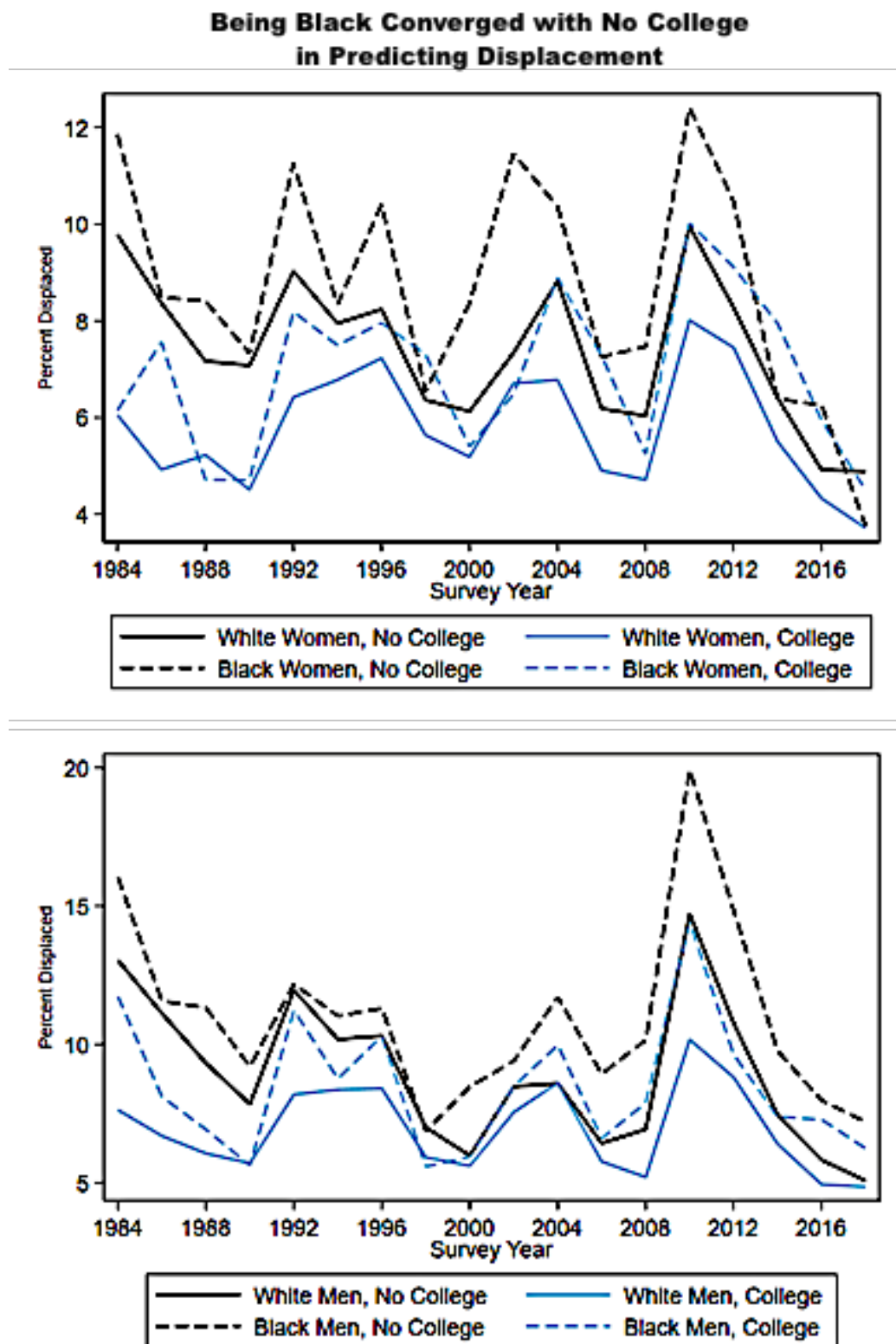


Figure 4. Black and white percent displaced by college, for women (Panel A) and men (Panel B)

**Young Workers have Ubiquitous Black Disadvantage;
Old Workers have Recent Black Disadvantage**

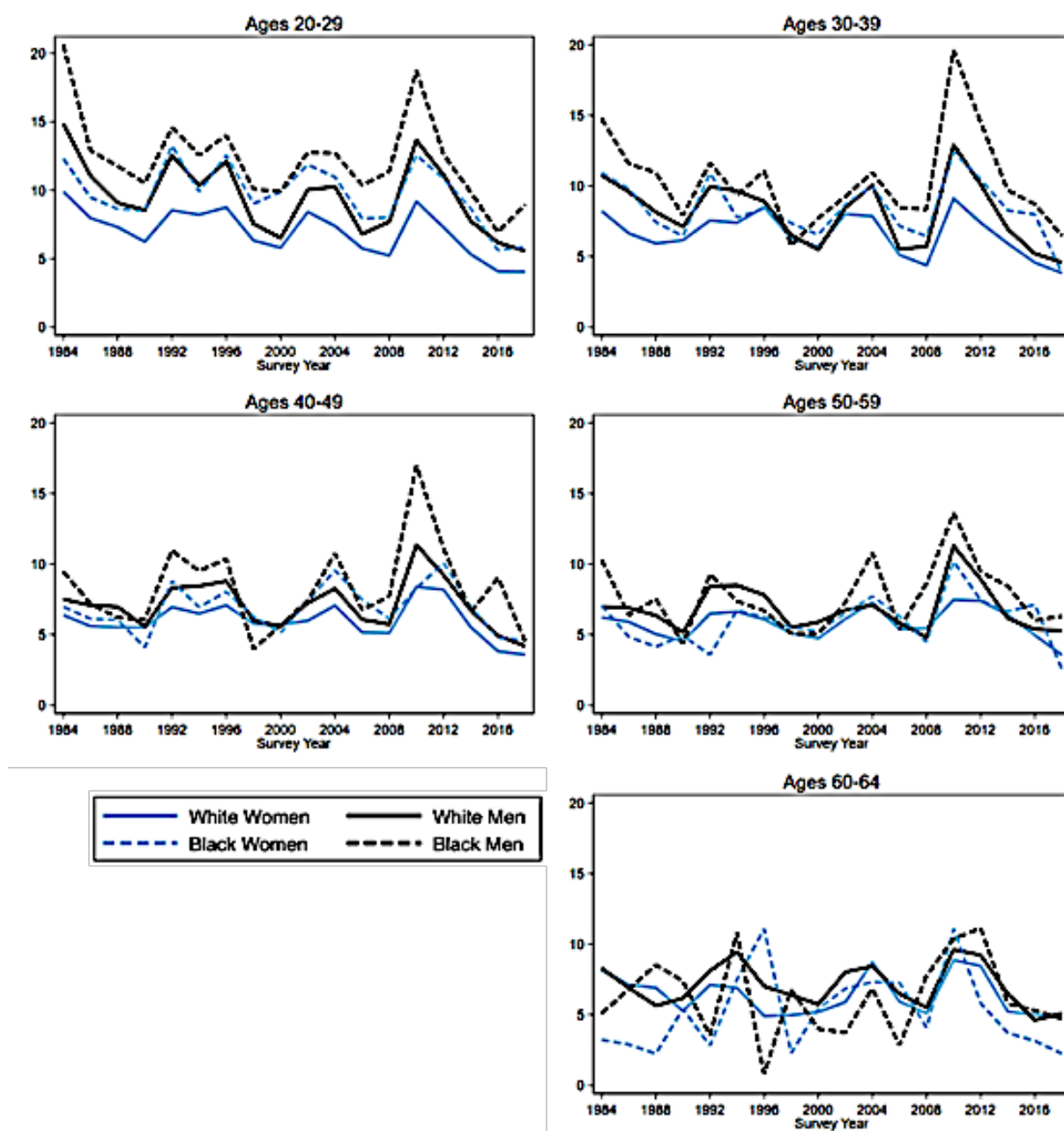


Figure 5. Displacement by race, sex, and age over time

**Most displacement disparity is within,
not between, economic locations**

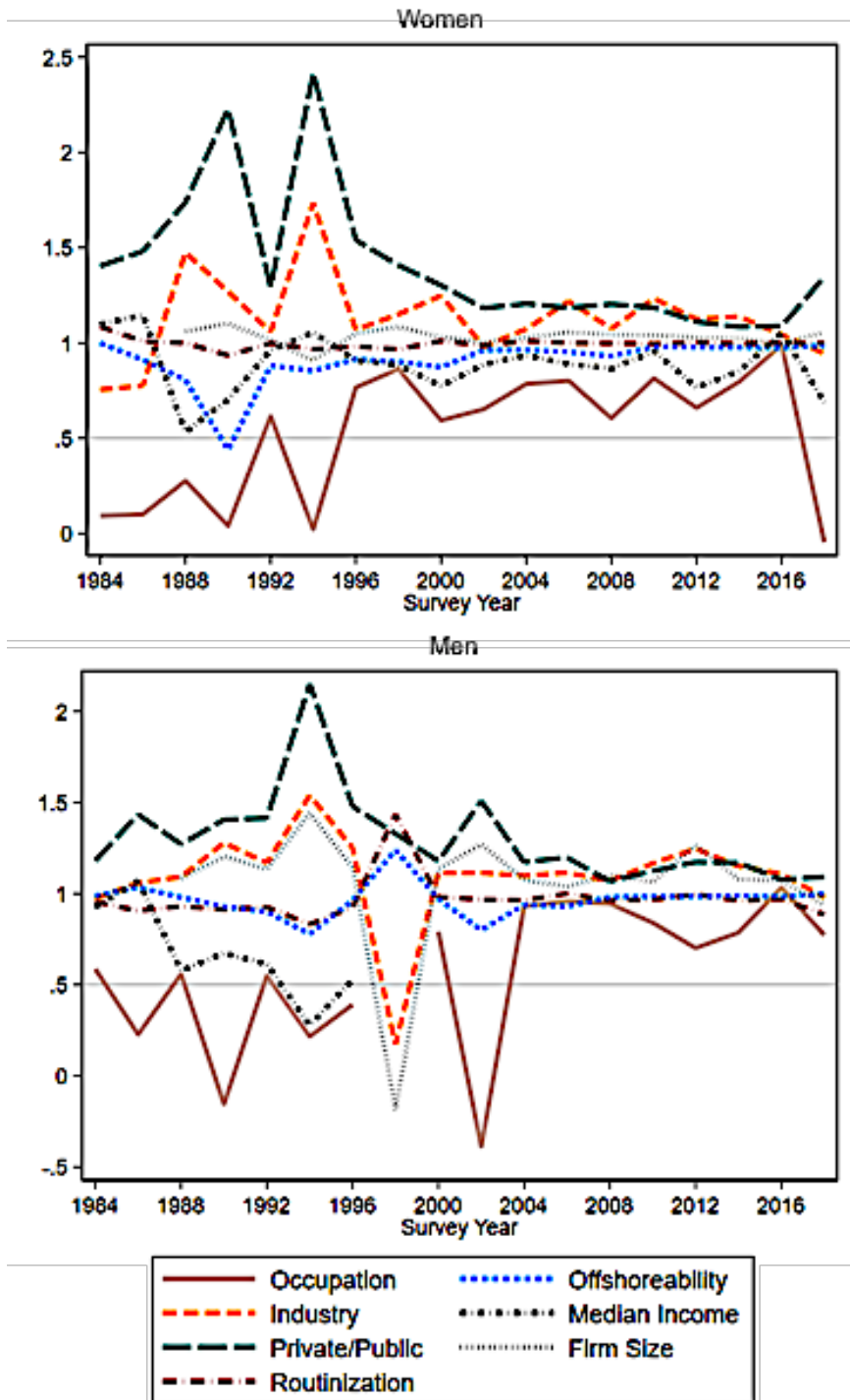


Figure 6. Proportion of total black-white displacement difference explained by differences within economic locations (e.g., occupations). When this proportion is above .5, most disparity is within-group disparity. Men in 1998 are omitted for some variables because outliers distort the graph scale.

**Displacement disparity from broad occupation segregation declined,
while disparity within occupations increased, especially for men**

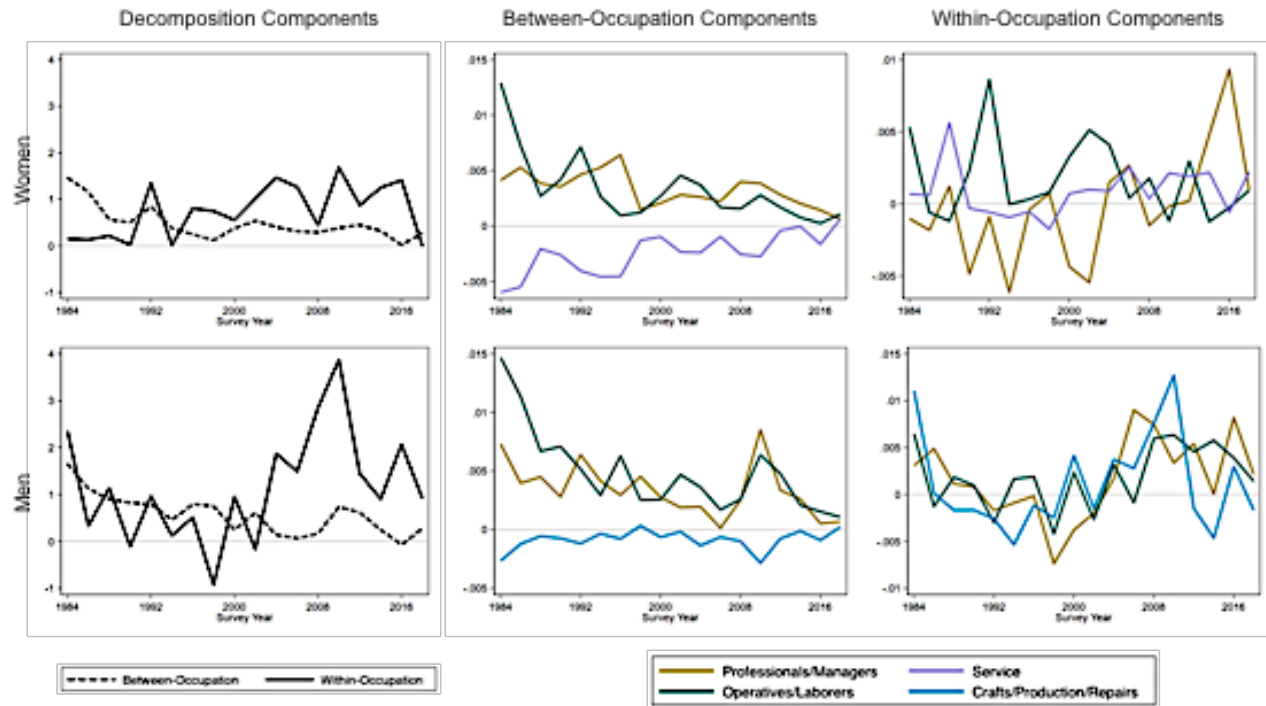


Figure 7. Results from decomposing the black-white displacement difference into between- and within-occupation components. Only key occupations are shown in the second and third columns.

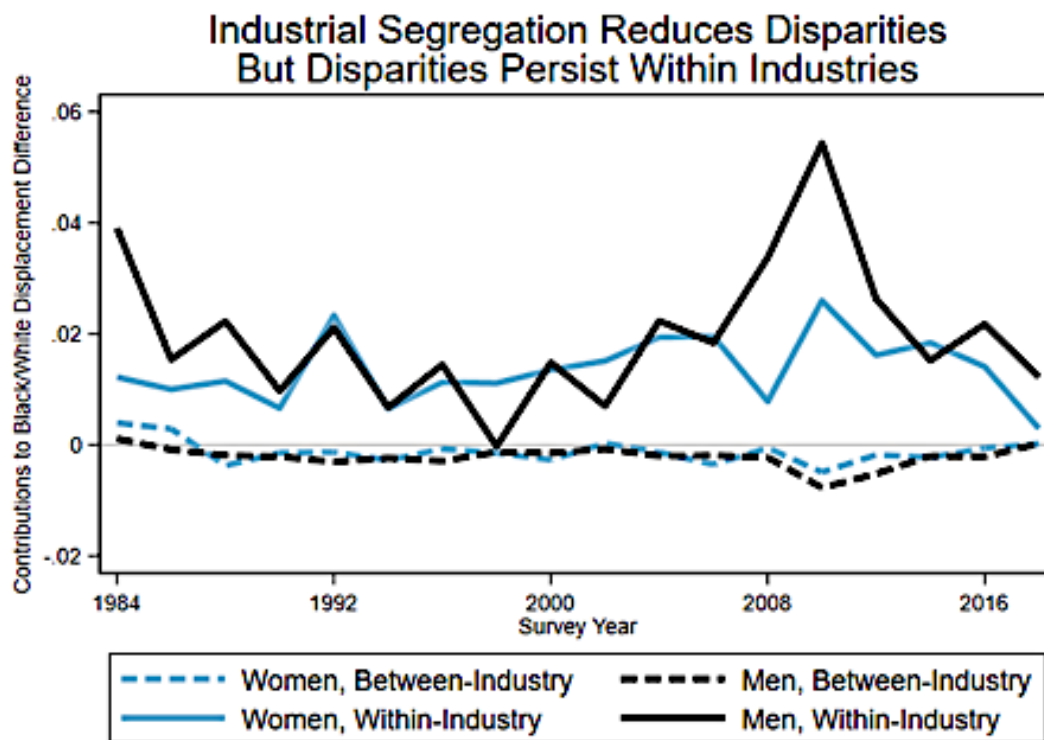


Figure 8. Results from decomposing the black-white displacement difference into between- and within-industry components.

Disproportionate public-sector employment initially reduced black/white disparities but no longer does; most disparity is within-sector

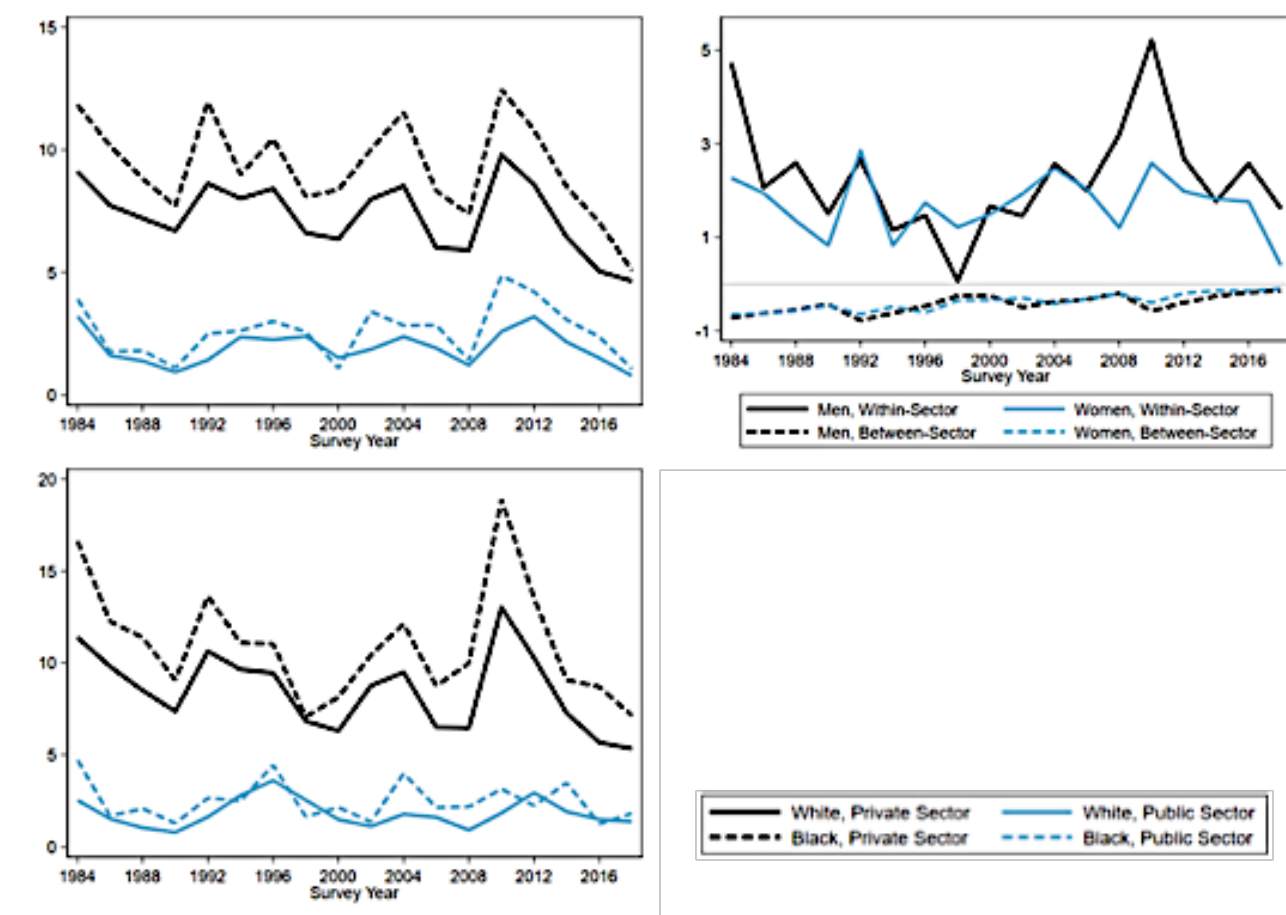


Figure 9. Displacement probabilities by race and public and private sector for women (Panel A) and men (Panel B); results from decomposing the black-white displacement difference into between- and within-sector components (Panel C).

Black/white displacement disparities for public-sector professionals and managers emerged in the mid-2000s

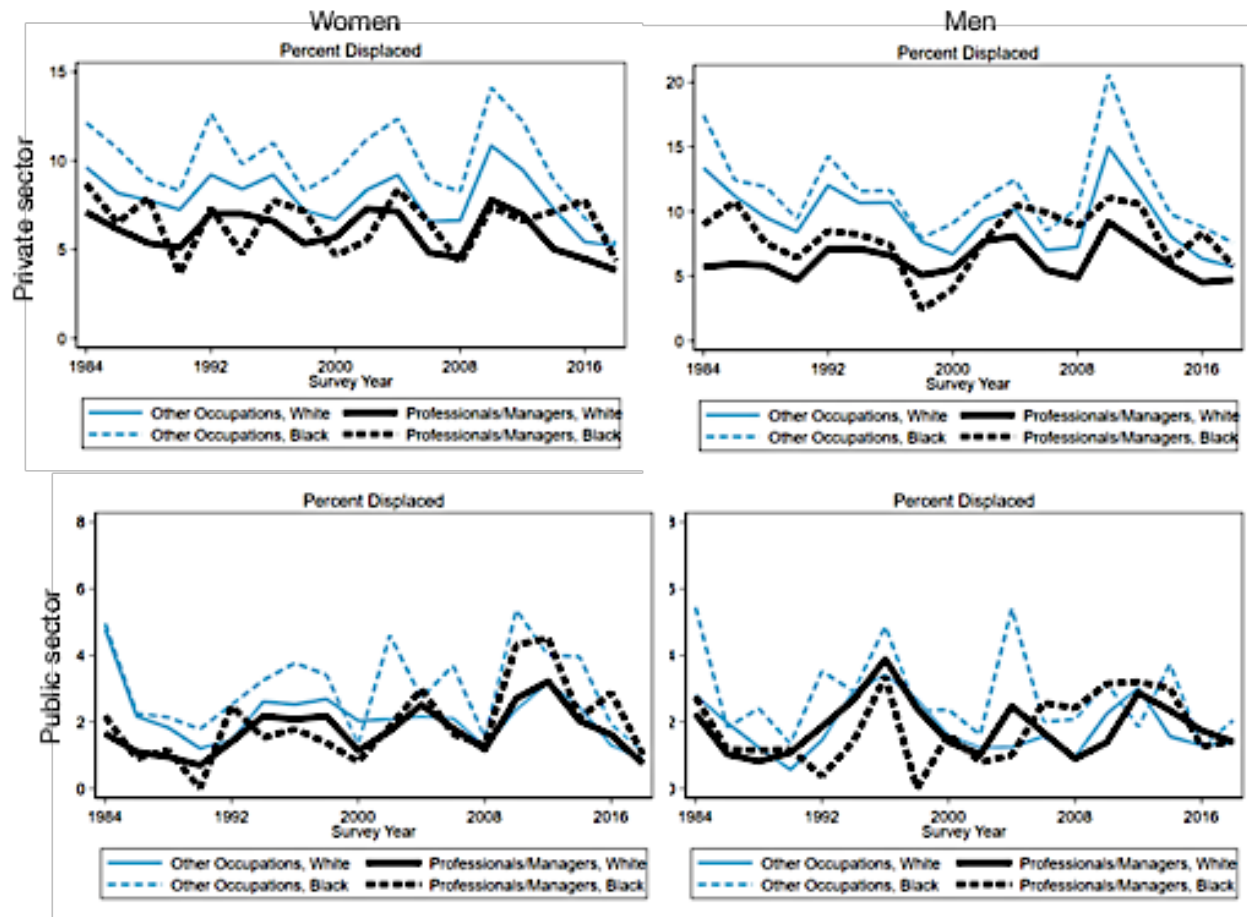


Figure 9. Displacement probabilities by race and professional and manager vs. other occupation, for women in the private sector (Panel A) and public sector (Panel B) and men in the private sector (Panel C) and public sector (Panel D).

SUPPLEMENTARY APPENDIX 1: ADDITIONAL MEASURES OF OCCUPATIONAL CHARACTERISTICS

In this appendix, we consider whether racial disparities in job displacement are accounted for by racial differences in the public vs. private sector status, routinization, offshorability, and average log income of jobs held by Black and white workers; by occupational concentration in large firms; and by differences in Black and white workers' tenure in those jobs. As suggested by Figure 6 in the main paper, we find that these dimensions of occupational sorting account for some excess Black displacement, but not for the recent rise in Black/white displacement disparities.

Job Routinization and Offshorability

One question we explore is whether racial disparities in displacement are accounted for by racial differences in the degree to which jobs can be replaced by machine—occupational *routinization*—or by workers abroad—occupational *offshorability*. We take measures of both constructs from Acemoglu and Autor (2011).

Underlying the concept of occupational routinization, as developed by Autor and colleagues, is the idea that occupations contain varying intensities of three kinds of tasks: abstract, manual, and routine. Abstract tasks are those that involve planning and other cognitive skills, such as math. Manual tasks are those that involve coordinating eyes, hands, and feet. Routine tasks are those that involve conforming to a uniform standard of production and/or high levels of finger dexterity. A job is “routinized” to the extent that it is intense in routine tasks and not intense in abstract or manual tasks. The key point is that routine tasks are those that are easily replaced by machine or computer, while both abstract and manual tasks are difficult to mechanize. This reflects in part that “manual” has a different meaning, in this task schema, than in common parlance. Common occupations intense in “manual” tasks include serving food or driving a truck: these occupations are difficult to mechanize because they involve moving through physical space in unpredictable (that is, non-routine) ways. Conversely, one occupation that is highly routinized is accountant.

Thus, importantly, routine is not synonymous with low-skilled (nor are non-routine jobs always skilled one). Indeed, Autor and Dorn (2013) argue that routine jobs tend to fall in the

middle of the skill distribution (whether skill is conceptualized as the human capital requirements or the compensation in wages of an occupation), and so the loss of routine jobs contributes to the polarization of skill demand and wages.

To the extent that routinization does capture the risk of replacement by machine, it would seem to capture an important dimension of displacement risk. Yet there are other dimensions of displacement risk besides the risk of replacement by machine. We might think of routinization as one end of a spectrum of displacement risk. At the other end might be jobs in which there is a high degree of turnover among firms. In this case, the total number of jobs might be stable or growing, but they would regularly shift from one firm to another, perhaps resulting in high levels of displacement and high levels of reemployment. In between these two poles might be jobs that can be replaced by geographically disparate workers who are cheaper to employ (whether in a different region of the United States, such as the South, or abroad)—jobs that neither fully continue (as “the same” jobs) nor fully cease to exist (replaced by machine). These different forms of displacement, in turn, might have different consequences for the value of occupation-specific human capital accumulated by displaced workers. Thus, routinization might capture one extreme of the spectrum of displacement risk, in which jobs can be expected to disappear entirely, potentially dramatically depreciating the value of their former workers’ human capital and harming their future employment prospects.

In the middle of this spectrum are jobs with tasks that can be accomplished by non-local workers. Occupational offshoring or outsourcing characterizes jobs that are not bound by face-to-face interaction or on-site physical presence. Offshorability represents a separate dimension of job replaceability than routinization because many low-routinized occupations are highly offshorable and many high-routinized occupations are at low risk of offshorability (Autor and Dorn, 2013). For instance, production jobs, and blue-collar jobs more generally, while high on routinization, are relatively low in offshorability when compared to white-collar occupations (Acemoglu and Autor 2011:1080).

Routinization, offshorability, and median income results

A seemingly plausible hypothesis is that Blacks might be displaced more often than whites because they are in jobs that are more easily replaced by machine or by workers abroad. We

explore this hypothesis by decomposing Black/white displacement disparities on measures of job routinization (reflecting how easily a job is replaced by machine) and offshorability.

Routinization in particular has a *prima facie* appeal as an explanation for racial disparities because, across the series, Blacks are in more routinized jobs than whites are on average. Yet routinization turns out to account for very little of the racial disparities in displacement, because it turns out to be a surprisingly poor predictor of displacement.

Panels A and B of Figure A1.1 show the results of decompositions by routinization and offshoring, respectively. Both show that disparities are driven almost exclusively by Black/white differences within shared occupational values of routinization and offshorability, not by Black/white differences in sorting along these dimensions.

As a final alternative strategy for finding a continuous scale, along which detailed occupations vary, that might account for Black/white displacement disparities, we sort occupations by their logged median income. Panel C of Figure A1.1 shows the results. Here, too, the disparities, and their growth for men, reflect differences within economic locations, rather than between them.

Firm size

Black workers disproportionately work in larger firms. For example, from 1988 to 2018, about 55% of Black workers were employed at firms with more than 500 workers, while the percent of white workers employed in such large firms rose from about 40% to about 45%.¹⁵ Historically, this reflected in part that early adoption of affirmative action was typically motivated by the desire to secure federal government contracts, a goal generally limited to large firms in specific industries; affirmative action policies tended to persist long after securing such a contract (Kurtulis 2015). The rise of human resources and corporate diversity initiatives is also typically a large-firm phenomenon.

Given the disproportionate employment of Black workers in very large firms, and of white workers in very small firms, displacement disparities could reflect a changing distribution of displacements over firms of various sizes. Since 2000, layoffs have been disproportionately

¹⁵ Firm size distributions by race were generated from ASEC, which we downloaded from IPUMS-CPS. Overall, Black workers are disproportionately employed in very large firms, and white workers in very small firms.

concentrated in larger firms but smaller establishments (Oslund 2019), suggesting that, for example, employees at small outposts of large companies are at particular risk of displacement.

We consider this explanation by calculating the share of workers within each detailed occupation category employed by large firms using data from the Annual Social and Economic (ASEC) supplement to the CPS, and then use this continuous share index to estimate an additional set of Oaxaca-Blinder decompositions. Firm size is reported in ASEC beginning in 1988. We classify occupations first by their concentration in firms employing 500 or more workers, and then in firms employing 1,000 or more workers. In short, this analysis tests whether the Black/white displacement disparity might be explained by differential levels of displacement risk based on firm size.

Firm size results

Figure A1.2 shows the results of a Oaxaca-Blinder decomposition of the Black-white displacement disparity, for women and men, in terms of the proportion of workers' detailed occupation that is employed in large firms. In Panel A, "large firms" are firms employing at least 500 workers; in Panel B, firms employing at least 1,000 workers. The results show that virtually the entirety of the disparity, for both women and men, reflects disparities within occupations' concentration in large firms, rather than Blacks and whites being employed in occupations with different concentration in large firms. There is a small protective effect associated with being in occupations concentrated in large firms during the Great Recession, which reduces Black/white disparities slightly in the 2010 survey. But on the whole, firm size, as measured here, appears to be essentially irrelevant to Black/white displacement disparities.

Job tenure

We also analyze displacement as a function of tenure at one's job. Job tenure is highly relevant in the context that firms sometimes lay off in reverse seniority order, a procedure that is sometimes enshrined in union contracts. The job tenure of displaced workers in the job from which they were displaced is collected beginning in 1996; the tenure of currently-employed workers is collected in the Job Tenure and Occupational Mobility supplement collected in the same months

as the Displaced Worker supplement. As a comparison sample, the tenure distribution of currently-employed workers is imperfect since low-tenure currently-employed workers (who were not displaced) may have been working in a different job throughout much of the survey window; yet there is no clear alternative to this standard analytical strategy (Farber 2015: 10-11).

Tenure is top-coded at varying levels in different years and in the two supplements. We impose the same top-coding for displaced and non-displaced workers but allow it to vary across years; a sensitivity analysis using identical top-coding across years (at 24 years on the job) produces nearly identical results as those we report here.

Job tenure results

Displacement risk is much higher in the first few years on a job than in subsequent years. This reflects that layoffs frequently occur in seniority order within a firm, even in non-union firms (Abraham and Medoff 1984), and also that job churning due to poor worker/job matches or stable worker traits may sometimes occur through layoff mechanisms rather than firings or quits (Farber 2015: 11). In our analysis, for all race/gender groups, displacement risk peaks at 1-2 years of job tenure and falls sharply afterward, then falls only very gradually following four years' tenure. (In most years, displacement risk peaks for Black men in their second year on the job, and for other race/gender groups in their third year.) Panel A of Figure A1.3 summarizes this pattern, showing the displacement probabilities of Black and white men and women over their job tenure, averaged across all years when tenure information was collected (1996-2018).¹⁶ The decline in displacement risk after the first several years of employment is dramatic. For white women, displacement in the fifth year on a job falls to half of what it was in the third year; for Black women and Black and white men, it falls to about one-third. Averaging across years and demographic groups, the majority of displacements occur during the first three years on the job, while one quarter of workers are in their first three years. This pattern of displacement risk in relation to job tenure matters for racial disparities because for men and, to a lesser and less consistent extent, for women, Black workers are disproportionately likely to be in their first year

¹⁶ The shape of Black and white displacement risk over job tenure is not an artifact of this aggregation; when we group surveys into four sets of three, to maximize cell sizes, we find the same pattern in each set of years (not shown).

on the job.

But Panel A of Figure A1.3 also shows substantial racial disparities between workers who are all in these early high-tenure years, although the extent of these disparities varies across survey years.¹⁷ Given the shape of displacement risk over the tenure distribution, we decompose the Black-white displacement difference into a component reflecting the differences in Blacks' and whites' composition of workers with less than three years on the job, and the differences in Blacks' and whites' displacement given less than three years or at least three years on the job. Panel B of Figure A1.3 shows the results from this decomposition. For women, disparities reflect differences within tenure groups, rather than between them. For men, the two components are roughly equal in magnitude (except during the Great Recession, when within-tenure disparities spike) and, although the measures are somewhat noisy, both seem to grow modestly over the series. The main story still appears to be within, not between, economic categories.

Displacement was dramatic during the Great Recession, captured in the 2010 survey. Panel C of Figure A1.3 shows displacement by race, gender, and tenure during the 2010 and 2012 surveys, showing the Great Recession and its immediate aftermath. Fully one-third of Black men in their second year on a job reported a displacement from it during this period, although this and other rates shown in Panel C are likely overstated by 2009 displacements being eligible for both the 2010 and 2012 surveys. In the third year of employment, 28% of Black men, 22% of white men, 21% of Black women, and 16% of white women reported a displacement.

¹⁷ Because Black men's displacement risk peaks a year earlier than white men's in the tenure distribution, white men generally have higher risk in the third year, while Black men have higher risk in the surrounding years.

SUPPLEMENTAL FIGURES

Job routinization, offshorability, and median income are essentially irrelevant to racial disparities in displacement

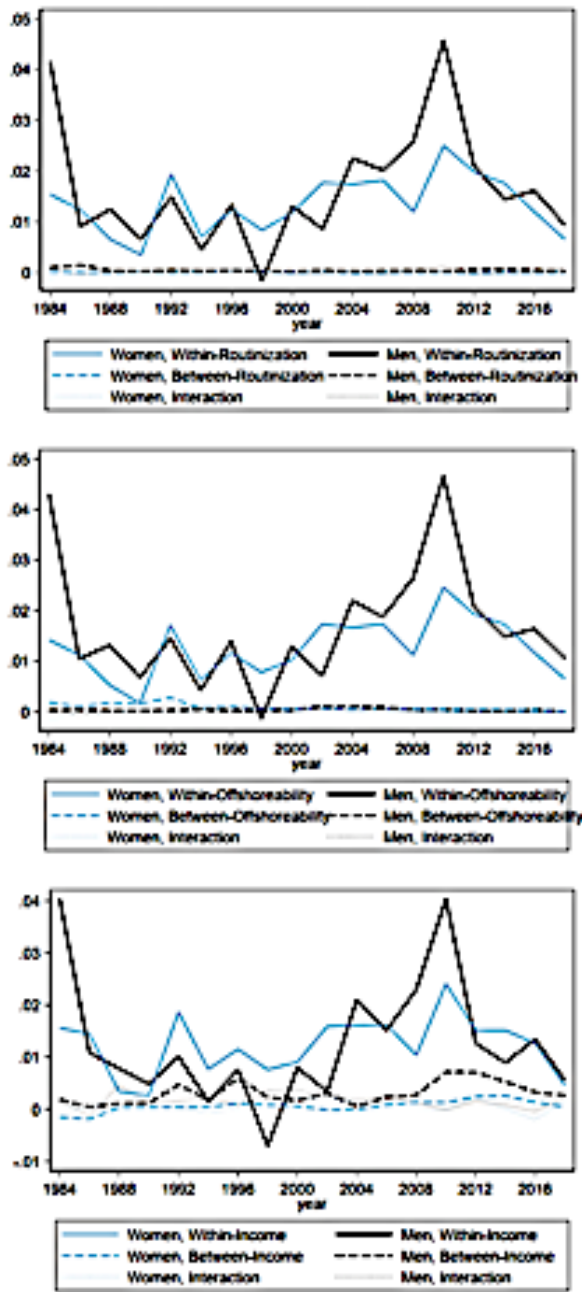


Figure A1.1. Results of Oaxaca-Blinder decompositions of the black/white disparity in job displacement, separately for women and men, by characteristics of detailed occupations: routinization (Panel A), offshorability (Panel B), and log median income (Panel C).

Occupational concentration in large firms is essentially irrelevant to the black-white displacement disparity

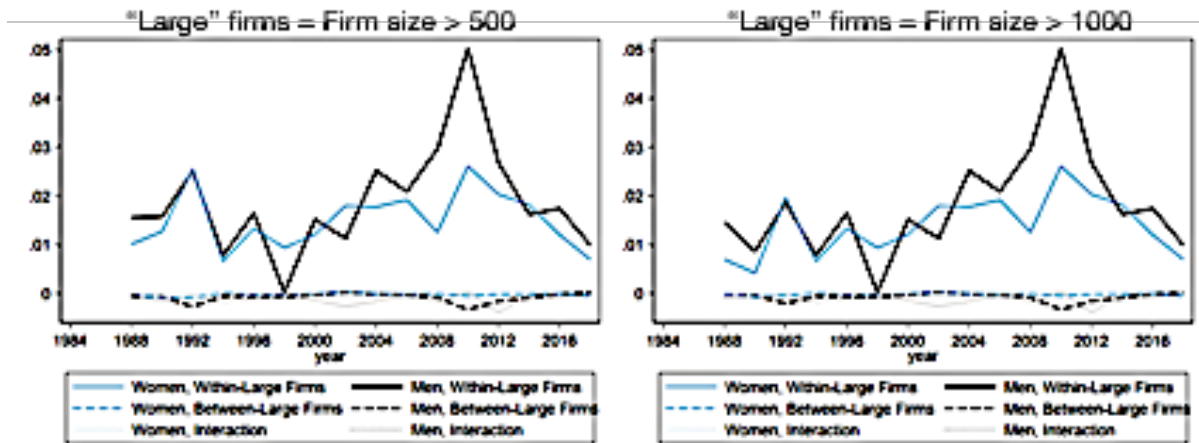


Figure A1.2. Results of decompositions of the black/white disparity in job displacement, separately for women and men, by the proportion of the detailed occupation in large firms.

Job tenure is an important predictor of displacement, but explains relatively little racial disparity

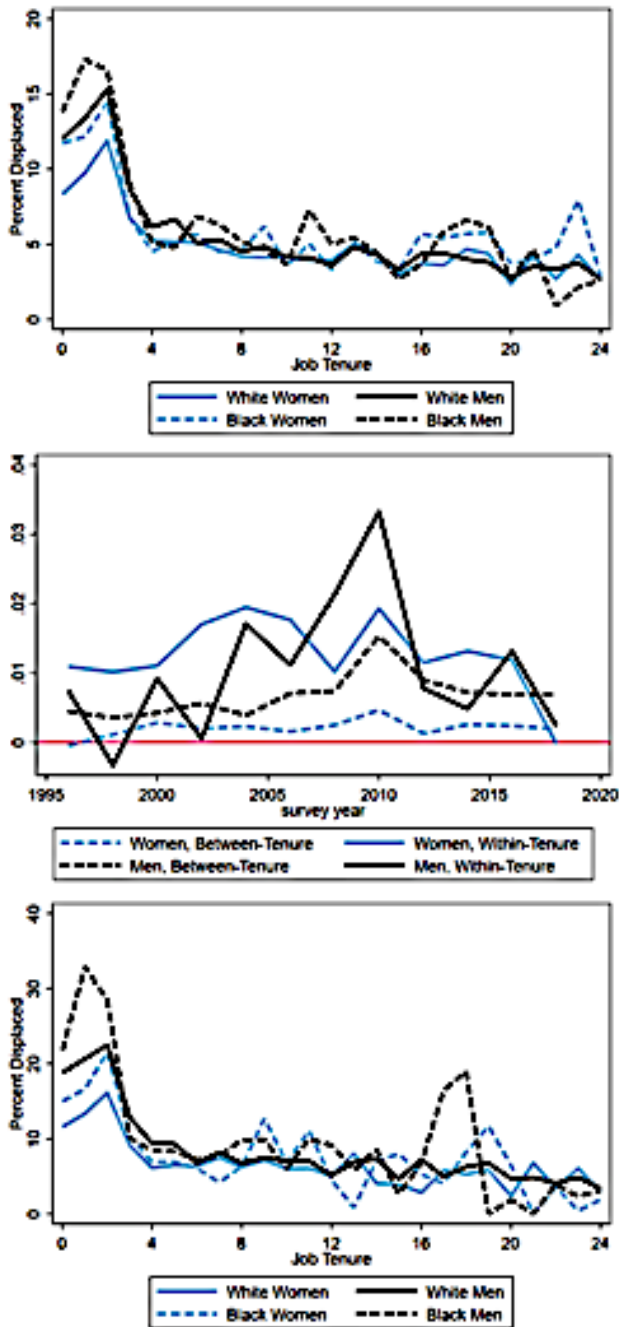


Figure A3. Displacement by job tenure (Panel A); Results from decomposing the black-white displacement difference into between- and within-group components for job tenure of under 3 years (Panel B); Displacement by job tenure during and immediately following the Great Recession.