Racial Inequality in the Labor Market

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Griswold Center for Economic Policy Studies
Working Paper No. 343, June 2025

Racial Inequality in the Labor Market Handbook of Labor Economics*

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June 4, 2025

Abstract

In this chapter, we introduce a new framework for studying the evolution of racial inequality in the labor market. The framework encompasses two broad forces – distributional and positional – that affect labor market gaps by racial and ethnic identity over time. We provide long-run results on the evolution of Black-White earnings gaps, including new results for Black and White women, and we review the evidence on historical factors affecting racial gaps. We then provide new results on racial gaps among other groups in the U.S. and discuss the evidence on racial gaps outside the U.S. We then discuss the role of prejudice-based discrimination in driving racial gaps, particularly in the post-civil-rights era, a period when such discrimination has been thought to play a declining role in racial inequality. We describe forces that can amplify existing discrimination, such as monopsony and workers' perceptions of prejudice in the economy, and we discuss recent literature directly measuring discrimination through expanded audit studies and quasi-experimental variation. We conclude with a discussion of existing and new frontiers on race in the labor market, including stratification, reformulations of prejudice, and understanding the way race has shaped purportedly race-neutral institutions throughout the economy.

Keywords: Race, labor markets, inequality
JEL Classification: J15, J31

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1 Introductory Overview

Gaps in labor market outcomes by racial identity are a major feature of post-slavery and post-colonial economies throughout the world. In the case of the United States, the years since at least the civil rights era have witnessed policies intended to redress the effects of the country's racist past. Policy-makers and courts have implemented policies to eradicate the most blatant aspects of racial exclusion and mistreatment. Other initiatives have aimed to narrow the deficits in education, health, housing quality, and other factors bequeathed to Black Americans and other racial minorities by historical forces and policies.[1] Alongside these policy efforts, changes in various types of cross-racial social interaction and in political behavior—notably the election of Barack Obama to the U.S. Presidency—suggest that there have been substantial shifts in how the broader American society engages with racial minorities.

How have these societal changes affected racial minorities? Labor economists have produced a large and active literature studying racial labor market differences, including detailed descriptive analyses of the historical evolution of Black-White gaps. Perhaps the key summary finding from this work is that differences between the labor outcomes of White and Black individuals have narrowed substantially over the past several decades, but significant gaps still stubbornly persist.[2] This pattern of sharp narrowing of mean differences over time that stops well short of full convergence exists for labor market outcomes ranging from representation in skilled professions to wages.

There is broad agreement about these summary patterns, which have been documented by a wide range of scholars across a variety of studies. Some striking unifying characteristics may be noted about the research that has produced this essential descriptive work, especially regarding wages and earnings. A feature common to most of this work is the use of differences in the mean *level* of different outcomes to measure racial gaps. Average differences between racial groups are, of course, immensely informative.

[1] While there were significant policy measures before and afterward, 1960-1980 was an incredibly active period for policies by all three branches of the national government—judicial, legislative, and executive—meant to address the mistreatment and exclusion of racial minorities from labor market activities and to remedy skill deficits. Executive Order 10925 in 1961 introduced Affirmative Action among federal contractors to achieve non-discrimination by race. The Civil Rights Act of 1964 made employment discrimination by race, color, religion, and national origin illegal and established the Equal Employment Opportunity Commission (EEOC) to eliminate employment discrimination. This act also allowed the government to sue schools that remained racially segregated in violation of the Brown v. Board decision. The Griggs v. Duke Power Company Supreme Court decision set the precedent that even actions by firms that are not intentionally discriminatory are illegal if they produce disparate impact by race. The Equal Employment Act of 1972 expanded the authority of the EEOC, allowing the agency to file lawsuits against private employers who were thought to be engaging in employment discrimination.

[2] Examples of work analyzing trends in labor market (typically wage) gaps between Black and White workers include Smith and Welch (1989), Bound and Freeman (1992), and Donohue and Heckman (1991) The slowdown in convergence has been noted by several authors, including Bound and Freeman (1992) and Juhn et al. (1991).

Still, one can conceive of other summary ways to compare the outcomes of racial minorities to those of non-minorities. One such alternative might be to assess how members of the two groups rank over time in some overall distribution of the relevant outcome. It is not a foregone conclusion that this or another alternative summary measure should reveal the same qualitative picture of trends in disparity as the difference in mean levels. Differences across alternative summary indices might reveal nuances about (changes in) how race matters in the labor market that would not be obvious from examining any one summary measure alone.

The traditional emphasis on mean level differences has meant that analyses of differences at other points in the relevant distributions have been rare in previous descriptive work. This is an issue of growing importance as heterogeneity in economic outcomes increases within racial minority populations (Darity Jr, 1990).[3] Whereas there was historically little to distinguish the labor market experience of one Black person from another, the fundamental "sameness" of the economic experience of Black Americans has decreased steadily over time. The average racial gap in economic outcomes may thus increasingly inaccurately reflect either how Black Americans at the top of the relevant distribution are faring relative to their White counterparts, or how Black Americans at the bottom are faring relative to theirs.

Summary work on racial disparities in labor market outcomes has tended disproportionately to focus on men and even more specifically on working men. The justification for such a focus often pointed to women's labor force participation being far lower historically compared to men's. It has been well documented, however, that Black women have historically had higher rates of labor force participation than white women (Goldin, 1977; Boustan et al., 2014). In addition, both groups of women have seen their participation rise appreciably (Goldin, 1995; Goldin and Mitchell, 2017; Juhn and Potter, 2006) while the trend for men has been the opposite. Non-work among prime-aged men has grown dramatically over the past 40 years, and has done so unevenly across racial groups (Charles et al., 2016; Bayer and Charles, 2018; Abraham and Kearney, 2020; Coglianese, 2018). Today Black men and women have comparable participation rates. These factors highlight the need for more analysis of racial differences in the participation margin than has heretofore been the case, and for more focus on the racial differences in women's outcomes more generally.[4]

[3]See also Darity Jr et al. (1998) and Grodsky and Pager (2001) for discussion of growing heterogeneity among Black workers in wages, earnings, and income.

[4]Several papers examine racial differences in labor market outcomes among women, both historically and in the present. In addition to Goldin (1977) and Boustan et al. (2014) on participation differences, a number of papers focus on occupational segregation and mobility, wage and household income differences, household structure, and unemployment. An inexhaustive list includes Bailey and Collins (2006); Moody and Jr. (2018); Sundstrom (2000); Althoff (2023); Sundstrom (1992); and Pettit and Ewert (2009). In addition, recent work examines the role of racial dynamics within the firm and firm evaluation and

Little engagement in the literature with the issue of race in an international context is another characteristic feature of the bulk of the summary work on racial labor market differences. Despite differences in history, national wealth, or political organization, the U.S. shares with many other countries a racially diverse population. Comparing trends in racial labor market disparity in other countries to patterns in the U.S. gives a valuable sense of the scale of racial convergence or divergence in the U.S. and may indicate the extent to which U.S. patterns are unique or influenced by factors that transcend national boundaries. A major focus of the literature on racial gaps has been on Black-White gaps, along with some consideration of gaps between Hispanic Americans and non-Hispanic White Americans. A much smaller literature considers the relative economic status of Asian Americans or Native Americans, often due to limited sample sizes for analysis in census micro-data samples or survey-based data sources. Almost none of the literature considers the long-run evolution of these gaps both because of sample size limitations as well as changes in racial categorization or questions on self-identification with different racial categories.

Even if one is narrowly concerned only with documenting and understanding Black-White patterns within the U.S., the shifting immigrant makeup of Black Americans raises a different important dimension of internationalization. African-descended persons from Africa, the Caribbean, and elsewhere constitute one of the fastest-growing immigrant groups to the U.S. (Hamilton, 2019). How does the summary picture of racial disparity in labor market outcomes change when first- and second-generation Black Americans are added or removed from the analyses? Given the well-known phenomenon of selective migration, there may be important differences between native-born racial minorities and immigrants of the same racial group.[5] Not accounting for the changing prevalence of immigrants within the Black population, as has been common in the literature, may cause analysts summarizing descriptive facts to erroneously attribute relative gains or losses observed for the Black population over time to changes in how race – "Blackness" – is treated in the labor market, rather than being, at least in part, due to the composition of those who are treated as Black.[6]

Whatever the collective empirical approach taken or issues ignored in the existing descriptive literature, there is little disagreement about the basic picture this work shows of a multi-decade period of substantial convergence followed by an ongoing period of substantial persistent disparity. What factors have been important for driving the evolution of these patterns, and which factors will matter for the future relative labor market

promotion policies in driving racial gaps among women (Linos et al., 2024).

[5]See, for example, Butcher (1994) and Mason (2010).

[6]This scant attention paid to international considerations does not extend to work studying relative outcomes for Hispanic Americans, where accounting for immigrant status in any analysis of relative outcomes has long been standard (Antman et al., 2023).

success of racial minorities? There is far from consensus on these questions.

Labor economists have mainly relied on a small set of theoretical models to analyze why race might determine outcomes in competitive markets. The benchmark framework for discussing differences in labor market outcomes between individuals of different racial groups, or indeed any other ascriptive trait, follows the standard neoclassical assumption that agents' treatment in the labor market is determined by their productive capacity–or their "skill." Economists seeking to understand racial gaps have traditionally first asked whether skill differences can explain outcome gaps before turning to alternative accounts.

The main alternative account in the literature is that racial minorities receive worse treatment in the labor market relative to White workers of comparable skill. These models of *labor market discrimination* come in two primary forms. The first is prejudice-based models, which contend that individuals are discriminated against by market actors (employers, customers, or co-workers) who harbor adverse, racially bigoted sentiments against them (Becker, 1957; Lang and Spitzer, 2020). The other historically prominent type of racial discrimination model focuses on the difficulty a decision-maker (who may be entirely free of prejudice) faces in forming an assessment of agents' actual skill levels. In these statistical discrimination models, labor market decision-makers supplement their limited information about any given person with information about the traits of that individual's group. Because of historical differences in skill across racial groups, individual racial minorities are ascribed less skill than their otherwise identical White counterparts and thereby receive worse market rewards (Phelps, 1972; Aigner and Cain, 1977; Arrow, 1973a; Lang and Spitzer, 2020).

Determining the portion of the observed racial disparities in labor market outcomes attributable to productivity or skill (and thus the remaining, unexplained portion that arises from external factors such as any racial discrimination agents face) is an immensely challenging problem because of the empirical difficulty of accounting for skill. A person's level of education is commonly treated by economists as indicating their skill, partly because it is the main vehicle by which people develop their formal knowledge and competencies, and partly because the main data sources used by economists report individual education. Years of schooling completed, often self-reported by respondents, is the education information available in most data sets. Yet, even the number of years a person has attended school, without further information about such things as the quality of the instruction they received or the type of student they were, only imperfectly captures whatever "productive skill" one believes education imparts. Perhaps more importantly, traditional data do not capture other important aspects of an individual's "skill" at all.[7]

[7]Darity Jr and Mason (1998) point out a number of issues with regression-based evidence that skill differences explain the entire racial earnings gap, including sensitivity to the set of included controls and differences in the returns to education in Black versus White samples. Others point out the importance

Some scholars argue that, whereas discrimination was once perhaps the dominant factor affecting Black individuals' labor market outcomes, its impact relative to that of racial skill differences has waned dramatically over the past fifty-plus years and may even have faded into insignificance today. By this view, the sharp closing in Black-White labor market gaps and the persistent disparities that remain are due principally to the dramatic but incomplete closing of the difference in skill between Black and White workers (Neal and Johnson, 1996; Loury, 1998; Fryer Jr, 2011). This position was the focus of the most recent Handbook of Labor Economics Chapter to discuss racial labor market differences. Other scholars have vigorously contested this argument, but various facts suggest its possible validity.

One such supportive fact is that, at the aggregate level, the narrowing of racial gaps in labor market outcomes over the past several decades coincided with the sharp closing of the once-massive racial differences in educational attainment (Margo, 1990; Card and Krueger, 1992).[8] Further, controlling for education in individual-level analyses explains much of the racial gap in wages and other outcomes (Fryer Jr, 2011). Strikingly, the explanatory power of education increases when regressions use other, better-measured indicators of true educational attainment and actual productive capacity than self-reported years of completed schooling (Neal and Johnson, 1996). It is also true that surveys reveal a significant secular decline in reported racial prejudice–something that presumably undergirds (at least one main type of) racial discrimination. A logical inference from these various pieces of evidence is that unexplained gaps might disappear if we could empirically capture all currently unmeasured skills.[9]

Notwithstanding this strongly suggestive evidence, is there reason to suppose that discrimination or other external forces besides skill account for important aspects of unexplained gaps? It should be clear that labor economists seeking to establish definitively that discrimination partly explains racial gaps have historically faced a large, and possibly even insurmountable, burden. Irrespective of how careful their analysis is, the criticism can always be made that there is *some* racial skill difference that standard

of non-cognitive skills as a determinant of earnings and the rising importance of social skills in the labor market (Heckman, 1998; Heckman and Rubinstein, 2001; Deming, 2017).

[8]Another important line of research has documented the causal impact of school integration policies that have help closed–albeit incompletely–racial education and labor market outcome gaps (Johnson, 2011, 2019).

[9]The effect on residual racial wage and earnings gaps of controlling for education and other indicators of knowledge in standard regressions is contested in the literature. Following on work by O'Neill (1990), Neal and Johnson (1996) find that controlling for scores on the Armed Forces Qualification Test (AFQT) sharply reduced the Black-White wage gap in a sample of men, with a residual gap that is statistically insignificant. However, subsequent analyses have found that the age at which education is measured changes this result, with some authors finding that schooling measured at the time of the AFQT–see Rodgers III and Spriggs (1996) and Carneiro et al. (2005)–or as completed schooling later in life (Lang and Manove, 2011) results in the reappearance of significant racial gaps.

regression-based approaches fail to account for well or at all.

One way that scholars have dealt with the difficulty of accounting for differences in skill or other relevant traits in discrimination studies was to conduct audit study analyses in the field.[10] In these studies, analysts send pairs of individuals of different racial groups to the same decision-making entity (a firm, landlord, etc.). Since, by design, each member of this pair had the same qualifications, differences in the treatment received by resumes signaling Black vs. White applicants in the pair, it is argued, reflect racial discrimination. One obvious problem with this approach is the necessarily small scale on which scholars can generally implement such experiments. An even more problematic concern is that subjects, who know the point of the study, might exhibit behaviors in their interactions with decision makers that bias the discrimination finding, also known as experimenter demand effects.[11]

In recent years, a series of highly influential papers have extended and improved upon the audit study method not by sending pairs of actual persons to some firms, but rather by sending to a much larger set of firms identical resumes of applicants, differing only in the racial group that the name of the applicant is meant to signal.[12] The findings from this work of differential treatment for Black (or rather for "Black" resumes) show powerful quasi-experimental evidence of the differential treatment based on race.

Another important set of empirical papers studies the impact of varying the amount of information available to employers on the labor market outcomes of individuals belonging to different demographic groups. This line of research seeks to test two broad implications of models of statistical discrimination: (i) that employers should rely more on observable attributes of job applicants or workers when information about individual skill or productivity is limited or restricted and (ii) that individuals facing statistical discrimination will be more likely to undertake costly actions to credibly signal more information to the market (and avoid statistical discrimination) whenever this is possible. Collectively, these papers provide a clear pattern of results consistent with the presence of significant labor market discrimination, especially against young Black men

[10] See, for example, the seminal study by Pager (2003) in which pairs of individuals differing in stated criminal history applied for various positions to test for changes in employer callback rates based on criminal records.

[11] Some have criticized audit studies for failing to capture effects of interest, such as those on the marginal vs. average firm (Heckman, 1998). Furthermore, these studies are not equipped to capture equilibrium market effects, including effects of employer discrimination on sorting of workers into firms or on-the-job search behavior of members from the discriminated group.

[12] See, for example, Bertrand and Mullainathan (2004) for a highly influential study. Bertrand and Duflo (2017) comprehensively review the literature of experiments on discrimination. Kline et al. (2022) build on Bertrand and Mullainathan (2004) by expanding the analysis to over 100 large employers. Potential limitations of these types of studies have been raised. In addition to the criticism levied by (Heckman, 1998), others question the signal included in the specific names used or the morality of audit studies and the deception required as part of the experimental design (Fryer Jr and Levitt, 2004; Kessler et al., 2019).

without college degrees seeking employment in the private sector. The strength of this general conclusion is bolstered by the fact that the empirical analyses exploit many distinct sources of variation in information available to employers including: (i) "ban the box" polices that restrict the collection of information on criminal histories (Agan and Starr, 2017; Doleac and Hansen, 2020; Craigie, 2020); (ii) the availability of random drug testing (Wozniak, 2015); (iii) occupational licensing (Blair and Chung, 2017); (iv) college attendance (Arcidiacono et al., 2010); and (v) years of labor market experience (Altonji and Pierret, 2001).

These findings are consistent with more indirect evidence documenting subtle associations between unexplained racial wage gaps, racial segregation in the labor market, and local racist sentiment, phenomena that align with predictions of textbook models of discrimination and that are otherwise difficult to explain (Charles and Guryan, 2008). It is also noteworthy that racial minorities, and Black individuals in particular, consistently report experiencing discriminatory treatment (Alesina et al., 2021). These pieces of evidence point to the continuing importance of race-based discrimination, or some closely related phenomenon.

The difficulty of separating the role of skill differences from discrimination is not all that frustrates scholars' efforts to understand racial differences in the labor market over the past years and into the future. Further complicating matters are various dramatic shifts in the overall structure of the economy, including the spatial re-location of economic activity, innovations in production technology such as skill-biased technical change, deindustrialization and the rise of services, the erosion of labor market institutions governing wages and the employment relationship, and changes in trade policy. These economy-wide changes—putatively autonomous, undirected, and unrelated to racial considerations—may affect the relative labor market realizations of racial groups because their histories differentially expose them to these forces.[13]

The massive literature on racial gaps is too large to review comprehensively in the space available in this Handbook Chapter. Moreover, many excellent reviews already exist in the literature. Instead, having highlighted some of the issues that drive racial labor market differences and identified some open questions in the literature about the magnitude of and explanations for the evolution of racial gaps, we first present below a simple decomposition framework for analyzing group differences that encompasses virtually all of the forces that affect racial labor market differences both now, historically, and in the future.

[13]See analysis by Goldin and Margo (1992) on the "Great Compression" in national wages and the earnings distribution that began in the 1940s and extended to roughly to 1980. Several papers analyze the growing inequality in the national wage and income distributions in decades since, including Katz and Murphy (1992), Piketty and Saez (2003), Katz et al. (2008), and Saez and Zucman (2020).

The decomposition method collapses forces down into two broad bins or sets of considerations. One of these bins consists of race-neutral factors in the sense that a Black and White person at the same location in the national distribution of earnings would be identically affected by that change. We call these forces the distributional component of convergence or divergence. The second set of factors in the framework, which we call positional, consists of race-specific forces, in the sense that they have a different effect on a Black versus a White person at roughly the same position in the national distribution.

One of the key strengths of our framework is its adaptability. It can be used to analyze various aspects of group differences, not just the level difference in outcomes. We demonstrate its versatility by applying it to the growing socioeconomic heterogeneity within the Black population, for example, and to the analyses of the participation margin under specific conditions.

Using this method, we first present an overview of Black-White labor market gaps for the decades from 1940 to 1980, including new results for women. We interpret these results through the positional and distributional forces that have shaped Black relative labor market performance from the Jim Crow to the civil rights period. Institutional barriers erected against Black Americans in employment, education, and politics slowed racial progress after the Civil War. The civil rights era ushered in dramatic reductions in earnings gaps, which signified both the efficacy of policy as well as the importance of race-specific factors for labor market gaps prior to the 1960s. At the same time, labor market institutions such as the minimum wage and unions reduced racial gaps by boosting the relative earnings of low-wage workers, a group that is disproportionately Black.

Next, we consider changes to economic conditions as well as the American social landscape that have either shaped or stalled racial convergence since 1980. Skill-biased technical change and the loss of low and middle income jobs through trade-induced shocks reversed the effects of distributional compression earlier in the 20th century and widened racial disparities. Immigration, mass incarceration, and racially distinct patterns in rising women's and falling men's labor force participation necessitate a broader view of racial inequality beyond Black-White gaps (typically among men) and beyond the U.S. We provide and discuss new results along these lines in this section.

We then review the evidence on how race-specific factors, primarily prejudice against racial minorities, have affected racial gaps in the 20th and 21st century. The role of racial discrimination after the civil rights era is much debated. We discuss how the coexistence of measured reductions in racially prejudicial sentiment alongside evidence of race-specific differential treatment in the labor market will shape a number of empirical and theoretical issues that scholars will grapple with in the future. These include questions such as racial differences in perceptions of discrimination as well as frictions in the labor market that can amplify the effects of even a small amount of discrimination in the economy.

We conclude with a discussion of future directions in the literature on race in the labor market, including alternative approaches to modeling discrimination and a reassessment of the race-neutral nature of a number of our social policies and labor market institutions.

2 Measuring Changes in Inter-group Inequality

In this section, we introduce two empirical approaches that are helpful for understanding the factors driving changes in inter-group inequality over time. The goal of both approaches is to understand changes in the economic well-being of members of different groups as a function of two broad types of economic changes to the economy: positional and distributional convergence (or divergence). Positional convergence (or divergence) refers to changes in inequality due to movement in the relative position of members of each group within the overall economy. Such changes might occur, for example, due to a decline in discrimination against members of certain groups or to a convergence in educational opportunities that better equalizes labor market skills across groups. Distributional convergence, on the other hand, measures changes in inequality due to generic shifts in the economy – i.e., changes that are purportedly neutral in the sense that their impact on individuals does not depend directly on their group affiliation. Such distributional changes can have differential impacts on groups depending on where their members are initially placed in the economy. A recession that hits workers marginally attached to the labor market especially hard, for example, will naturally have an outsized negative impact on groups that are over-represented among these workers.

We begin this section by presenting an approach based on quantile regressions that, while remarkably simple, often reveals striking patterns in the data indicative of the roles of distributional and positional change in driving changes in group inequality over time. In particular, this approach examines the movement in both earnings level gaps, which have received much of the attention in the economics literature over the past several decades, and earnings rank gaps, which highlight movement in the relative position of members of different groups in the earnings distribution. Earnings rank gaps, especially when they do not co-move with level gaps, can highlight distinct roles for positional and distributional convergence in driving changes in earnings inequality at particular points in the historical record. This quantile regression approach can also be used to measure level and rank gaps at quantiles throughout the earnings distribution, which can uncover distinct patterns in the evolution of inequality at, for example, the top versus middle of the earnings distribution.

We then present a second approach: a non-parametric decomposition method developed in Bayer and Charles (2018) for dividing changes in group inequality over any

historical time period into components due to distributional and positional change. An attractive feature of this approach is that it can be used to examine changes at any position in the economy – e.g., to study separately how these two types of economic forces affect inequality at the top, middle, and bottom of the earnings distribution. This approach can also be used in some circumstances, which we describe below, not only to study earnings inequality among working individuals, but also to understand how positional and distributional forces shape the employment margin itself. The decomposition method also naturally accommodates any number of dimensions of observable heterogeneity, allowing a rich characterization of the general impact of positional and distributional changes on group inequality over time.

2.1 Estimating Earnings Level and Rank Gaps

Consider members of two groups, a and b. Write the earnings E for the members of these two groups as a function of their perceived skill level, q, as: $f_t^a(q)$ and $f_t^b(q)$, respectively. We use the term "perceived skill" here to capture the notion that labor market outcomes may reflect differences in actual skills but also other factors, such as racial discrimination, which lead to a labor market penalty for members of certain groups. One way to conceptualize this penalty is that employers treat these workers "as if" their skills are lower than they actually are.

Using individuals in group a as the reference group, we can, without loss of generality, normalize the skill distribution for group a in each period to be distributed uniformly on the unit interval. With this normalization, f_t^a maps each percentile q of the skill distribution of group a to the corresponding level of earnings. Now consider a member of group b at the q^{th} percentile of group b's skill distribution. Using their earnings level, this person can be mapped to a corresponding quantile of group a's earnings distribution. We write this mapping as: $q_t^a(q)$. So, for example, the person at the median of group b's earnings distribution might have earnings that place them at the 25^{th} percentile of group a's distribution. In this case, $q_t^a(50) = 25$. Notice that the mapping, $q_t^a(q)$, encompasses two important underlying reasons why a member of group b might sit at a lower point in the earnings distribution of group a: (i) differences in actual skill levels and (ii) differences in skill *as perceived by the market*, due, for example to labor market discrimination or differential access to job opportunities.

Using the above mapping of perceived skill into earnings for each group, we define an earnings level gap between the two groups as follows: $G^q(E) = f_t^b(q) - f_t^a(q) = f_t^a(q_t^a(q)) - f_t^a(q)$. Earnings level gaps, particularly at the median, have long been an object of study in the racial and gender wage gap literature. We suggest scholars supplement earnings level gaps with the use of earnings rank gaps as a complementary tool. The earnings

rank gap is simply defined as follows: $G^q(rank) = q_t^a(q) - q$. It measures where in group a's distribution a member of group b at the q^{th} percentile of their own distribution falls. As we will show, the movements of earnings rank and level gaps during certain historical episodes – especially when they move in opposite directions – can often be used to distinguish important roles for distributional and positional changes directly in the data.

Figure 1

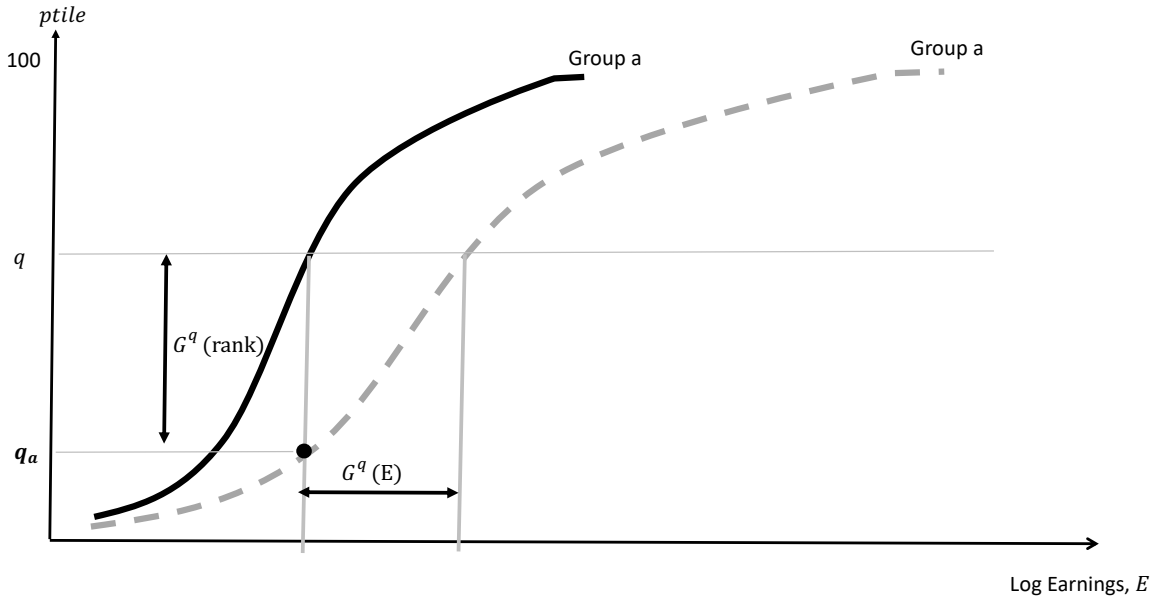


Figure reproduced from Bayer and Charles (2018).
Notes: This figure plots two cumulative distribution functions for the log earnings of Group a and Group b. The horizontal line at percentile, q, serves as an example of an arbitrary percentile. The earnings gap at percentile q is the horizontal difference between the earnings of Group a and Group b at the percentile q, noted as $G^q(E)$. The rank gap in earnings is the vertical difference between Group a's position in the earnings distribution and the position that same earnings level holds in Group b's earnings distribution. The rank gap is defined as $G^q(rank)$.

Earnings level gaps provide a direct measure of differences in the material well-being of the racial or ethnic groups being studied. They can be estimated at any quantile, q, using the quantile regression equation:

$$log(E_{it}) = \alpha_t^l(q) + \beta_t^l(q)r_i + \gamma_t^l(q)X_{it} + \epsilon_{it}^l(q) \tag{1}$$

where r_i is an indicator for individual i's race or ethnicity and X includes a series of controls such as age. $\beta_t^l(q)$ provides an estimate of the earnings level gap (in logs) at quantile q for each race and time period, t. The error term satisfies the conditional quantile restriction: $Q_q(\epsilon_{it}^l | r_i, X_{it}) = 0$.

The earnings rank gap can be estimated with the same dataset by simply transforming the dependent variable to be the individual's percentile in the White earnings distribution, $rank()$. The corresponding regressions are given by:

$$rank(E_{it}) = \alpha_t^r(q) + \beta_t^r(q)r_i + \gamma_t^r(q)X_{it} + \epsilon_{it}^r(q), \tag{2}$$

with $\beta_t^r(q)$ providing an estimate of the rank gap at quantile q for each race and time period, t. The rank gap is an estimate of the difference in rank position in the White earnings distribution of a Black and White individual each at the q^{th} percentile of their own race distribution. Rank gaps characterize the relative position of members of two racial or ethnic groups within the earnings distribution at a given point in time.

The empirical requirements for estimating earnings level and rank gaps include large, representative microdata on earnings with information on demographic characteristics. For the purposes of racial gaps, information on racial group is required while additional information, such as age, gender, and education can be used as controls or for decomposing gaps by gender or education group. In the U.S., such microdata on earnings are most widely available through the U.S. Census, starting in 1940. However, the information needed to explore racial earnings gaps in other countries is becoming increasingly available, and we discuss evidence from other contexts as well as future directions for work on race outside the U.S. later in this chapter.

2.2 Decomposing Changes in Inter-Group Inequality

We now introduce a non-parametric decomposition method that we apply later in the chapter to quantify the role of distributional vs. positional forces in the 20th century dynamics of earnings gaps between Black and White men in the U.S. Of particular interest is the role of these forces on the employment margin, which we show under certain circumstances and assumptions, can be readily incorporated into this framework. Our decomposition extends the method developed in Bayer and Charles (2018) and as such follows the setup and notation used there quite closely. We discuss generalizations of the framework, as well as some limitations, in the subsections below.

Using the structure described above, we can write the change in the earnings gap at quantile q from period 0 to period t as:

$$\Big(f_t^a(q_t^a(q)) - f_t^a(q)\Big) - \Big(f_0^a(q_0^a(q)) - f_0^a(q)\Big) \tag{3}$$

Adding and subtracting terms yields a decomposition into distributional and positional

components:

$$\Big[(f_t^a(q_0^a(q)) - f_0^a(q_0^a(q))) - (f_t^a(q) - f_0^a(q))\Big] + \Big[f_t^a(q_t^a(q)) - f_t^a(q_0^a(q))\Big] \tag{4}$$

The first bracketed term measures distributional convergence or divergence. It captures how generic changes to the overall earnings distribution differentially affect members of groups a and b. Such changes can have an substantial impact on group inequality when (i) members of groups a and b are initially located at different positions in the earnings distribution and (ii) these generic changes to the economy disproportionately benefit or harm individuals at various positions in the distribution.

The second bracketed term in equation 4 captures positional convergence or divergence. It measures changes in how the labor market rewards individuals of groups a and b in the same initial quantiles of their respective group's earnings distribution due to shifts in relative position. A reduction in inequality might come about due to positional change if, for example, convergence in educational opportunities reduces differences in actual skill levels between members of groups a and b or due to a decline in labor market discrimination or occupational exclusion that had caused members of one of the groups to face a substantial earnings penalty.[14]

To calculate the distributional component of the change in the earnings gap we conduct a simple counterfactual simulation that measures how the gap at quantile q would have changed if the members of groups a and b had held their positions in the overall earnings distribution at those observed at time 0, but the earnings associated with each point in the overall earnings distribution were updated to reflect the earnings distribution in period t. In essence, this simulation applies the new earnings distribution, with all of its changes in structure and shape, as if there had been no change in position. The positional component of the decomposition is then simply the difference between the actual and simulated gaps in period t. This change naturally picks up the change in earnings inequality from 0 to t due to movements of members of groups a and b relative to one another within the distribution.[15]

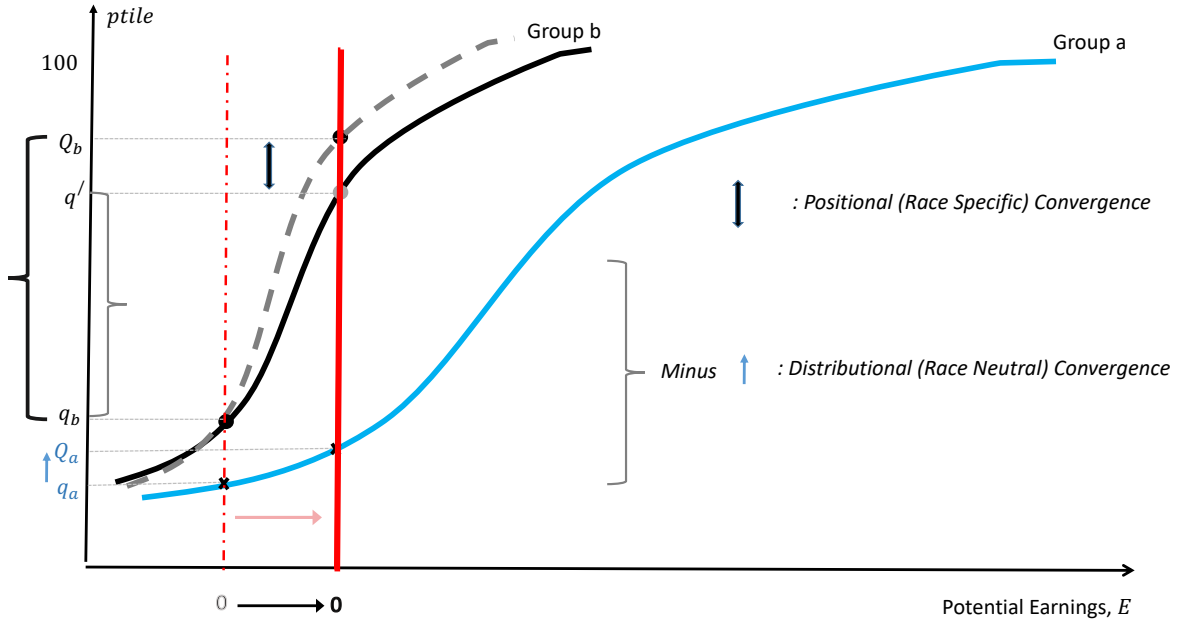
We extend this decompositional approach to examine changes in the employment margin. Figure 2 uses vertical lines to indicate the fraction of members of each group in each period with zero earnings – i.e., not working. The figure illustrates an example in which employment rates are decreasing for both groups between 0 and t. The actual change in the employment gap for this example is given by the change in the vertical

[14]Notice that equation 4 is fully unconditional – i.e., does not include any observable measures of education or skill. We discuss extensions of this framework to incorporate multiple dimensions of skill in Appendix A.

[15]Additional practical details for estimating the components of the decomposition can be found in Bayer and Charles (2018).

distance from $q_b q_a$ to $Q_b Q_a$. Notice that this change corresponds to a shift of the members of group b in the lowest percentiles of the earnings distribution with positive earnings at time 0 – i.e., those in the $q_b Q_b$ range – out of employment by period t. To calculate the distributional component of the employment gap from 0 to t, then, we measure the fraction of members of group a who had earnings at time 0 corresponding to the same range of earnings distribution that shifted into non-employment for group a. This provides a measure of the predicted change in employment for members of group b based solely on distributional economic forces and is given by the vertical segment $Q_a q'$ in the figure. The distributional component of the change in the employment gap is measured as the difference in vertical distance from $q_a Q_b$ to $q_b q'$, while the positional component is given by the vertical distance of segment $q' Q_b$.

Figure 2



Notes: This figure illustrates the decomposition of changes in unemployment (the percentile of each group with 0 potential earnings) differences between demographic groups a and b into components of distributional and positional convergence. The solid black line is the CDF in period 0 for Group b, and the dotted gray line is the CDF in period t for Group b. Group a is assumed to experience no change in the distribution of earnings from time 0 to t, with the same solid blue line for both periods. The dashed and solid vertical red lines intersect the percentiles of the distributions up to which individuals are unemployed at times 0 and t, respectively.

As is indicated by the positions of the zero earnings lines in periods 0 and t in the figure, our approach assumes that workers moving into unemployment come from the lowest quantiles of the reference earnings distribution. We believe this is a reasonable assumption to make when applying this decomposition approach to increases in unemployment. Further, in some datasets, this assumption can be tested empirically – for

example, when one can observe the prior earnings positions of workers who move from employment to unemployment. By contrast, during periods of increases in employment, it is far more difficult to predict which members of each group (previously not working at time 0) would be drawn into the labor market at time t, particularly as we do not observe earnings for this group. As a result, a limitation of the decomposition developed here is not well suited to understanding the forces driving movement into employment.

These caveats are relevant for understanding changes in racial gaps among men vs. women during the 20th century. In the case of Black vs. White gaps among women in the U.S., for example, Black women have historically demonstrated higher levels of labor force participation than White women (Goldin, 1977; Boustan et al., 2014). Increases in racial gaps among women over time may therefore stem from increased participation by White women with high earnings potential who were previously not engaged in market work due to different norms around Black vs. White women's working. For men, by contrast, historically a group with extremely high rates of labor market participation, movements out of employment typically come from the bottom of the earnings distribution.

In the next section, we examine changes in Black-White earnings gaps historically in the U.S. focusing on men – both working and non-working – as well as women. For the latter, given the selection into employment, we focus on working women only and discuss potential changes in the composition of working women and their implications for interpreting changes in earnings gaps among women.

3 Looking Back: Black-White Earnings Gaps From Mid-Century Through the Civil Rights Era

In this section, we present results on earning gaps from 1940 – when large, nationally representative microdata on labor income becomes available through the Census – through the year 1980. This time period spans World War II and the post-war national economic boom. The early part of this four-decade window overlaps with Jim Crow, the system of racial discrimination and exclusion that followed the Civil War and which ended in the late 1960s. The latter part of this four-decade window witnessed the activism and protests in support of racial justice that launched the civil rights struggle, and by 1980, the overwhelming majority of laws, policies, and programs that were the product of those efforts had been in place for years. This period also coincides with major reductions in inequality – i.e., the Great Compression from 1940-1950 – and expansive social policy – i.e., increases in the minimum wage as well as other Great Society programs enacted in the 1960s.

This part of our analysis covers labor market differences between U.S.-born, non-

Hispanic Black and White men – the contrast traditionally studied in the literature on labor market racial inequality in the U.S., especially before 1980 – as well as results on labor market differences between Black and White women, the focus of a much smaller literature covering this time period. The results in this section are based on samples drawn from the decennial Census in 1940, 1950, 1960, 1970, 1980. We restrict attention to adults aged 25-54 to avoid issues related to schooling and retirement. We include analyses of racial differences for other racial groups in the U.S., including some estimates new to the literature, later in the Chapter.

We first present employment rates for Black vs. White men and Black vs. White women over this time period in Figure 3. Both Black and White men had employment rates greater than 75% throughout this period, consistent with strong labor demand during WWII and the post-war era, with some declines by 1980. By contrast, women had far lower employment rates, due to lower participation in the labor market (labor force participation rates for women are also shown on the figure). Notably, Black women had higher rates of participation than White women throughout this period. These results highlight one of the key nuances in studying racial gaps in labor market outcomes among women. To abstract from the fact that non-participating women do not necessarily come from the bottom of the potential earnings distribution, we instead focus on women who are already working.[16]

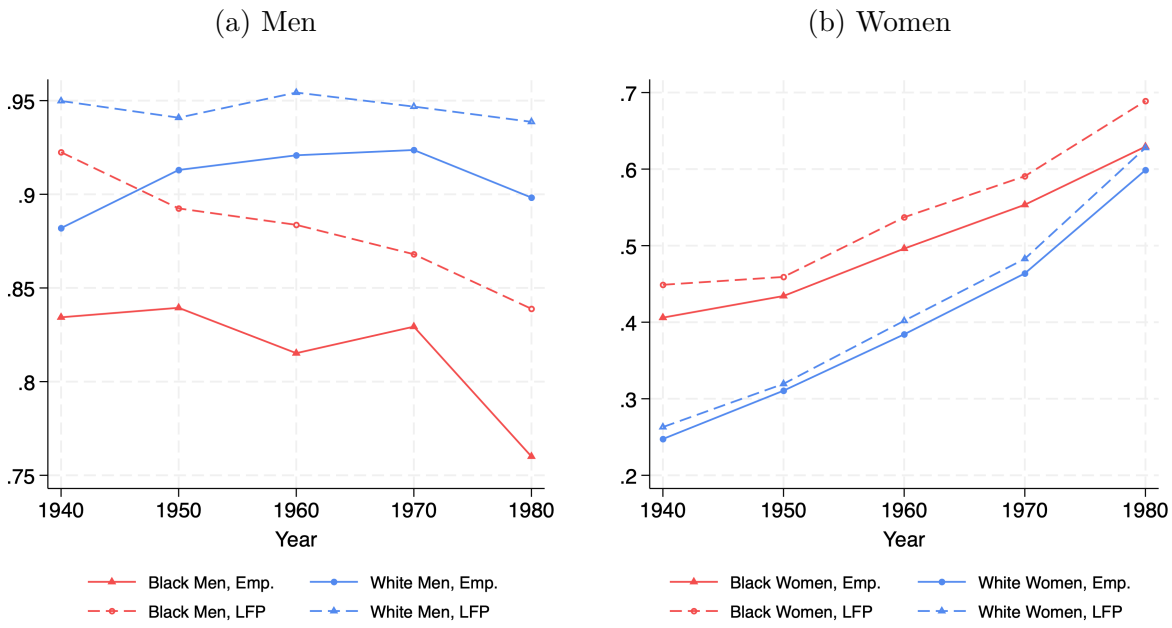
We next present results on the earnings level and rank gaps based on estimating equations 1 and 2, conditioning only on age.[17] Panels (a) and (b) of Figure 4 show estimates of the Black-White earnings level gaps for men and women at the 50th and 90th percentiles for the 1940-1980 time period. Panels (a) and (b) of Figure 5 show estimates of the Black-White earnings rank gaps for both groups. Focusing first on the level gaps, it is immediately obvious that this time period was one of rapidly increasing racial earnings equality in the United States. For men, the median level gap fell almost in half, from 100 log points in 1940 to just over 50 in 1970 and 1980. Convergence among working women was even stronger – the median gap fell from nearly 100 log points to less than 3 by 1980. Similarly, the gap at the 90th percentile for men closed by over half over this time period, from 80 to 37 log points. For working women at the 90th percentile, the gap fell dramatically between 1940 and 1950 – from nearly 80 to around 30 log points – and continued to converge through 1980.[18]

[16]Our sample mirrors the sample selection choices of Bailey and Collins (2006), who focus on wage and salary earners. Additional details on the sample construction are available in Appendix B.

[17]We construct six age bins: 25-29, 30-34, 35-39, 40-44, 45-49, 50-54.

[18]Most of the literature on Black vs. White women's labor market gaps during this period focuses on participation and employment gaps, occupational segregation, the ratio of Black-to-White working women's earnings, or mean differences in earnings. Bailey and Collins (2006) also includes analysis of gaps along the distribution of weekly earnings for Black and White working women. They find that Black working women at the 50th percentile of the weekly earnings distribution fell at the 10th percentile of

Figure 3: Black-White Employment Rates, 1940-80

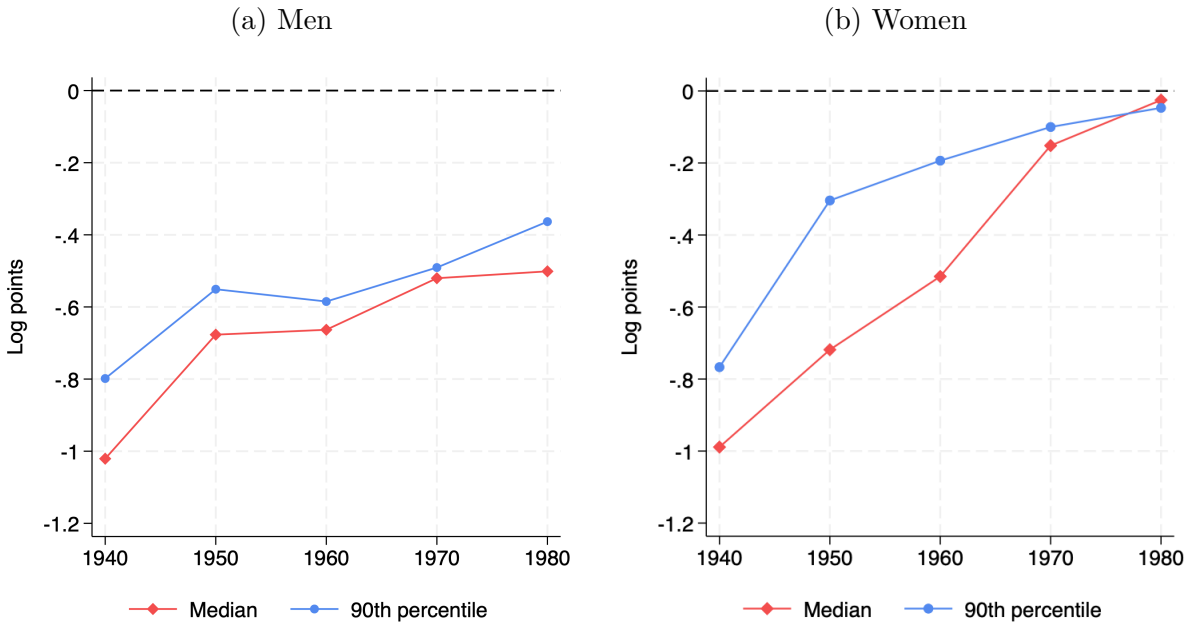


Notes: This figure plots employment rates across racial and gender groups from 1940-1980. Panel (a) shows the employment rate among White and Black men, and panel (b) shows the same for women. The sample is restricted to adults between the ages of 25 to 54 at the time of each census. Dashed lines display the labor force participation rate (LFP) and solid lines display the employment rate (Emp). Data sources: Decennial Census 1940, 1950, 1960, 1970, 1980.

Strikingly for men, changes in rank gaps do not mirror changes in level gaps during this time period. The Black-White rank gap at the median for men, for example, actually increased substantially from 27 to 32 percentile points between 1940 and 1960, a time period during which the median level gap closed by about a third. The movements in opposite directions of these two measures of inequality signal the importance of broader distributional changes in the U.S. economy during this time period. In particular, there was a dramatic compression of the earnings distribution from 1940 to 1960 that brought the earnings of workers in the lowest quartile of the distribution much closer to the median, and those in the middle much closer to the top. Thus, despite losing *position* in the earnings distribution relative to White men, the median Black man actually significantly closed the level gap with the median White man during this time period because of the power of these distributional changes.

the White women's distribution in 1940, climbing to the 15th percentile by 1950. For the 90th percentile of Black women, they find that they fall at the 50th percentile of the White women's distribution and climb to the 65th percentile by 1950. We focus, by contrast, on total annual wage and salary income for this sample of working women, thus incorporating potential changes in the number of weeks worked by both groups.

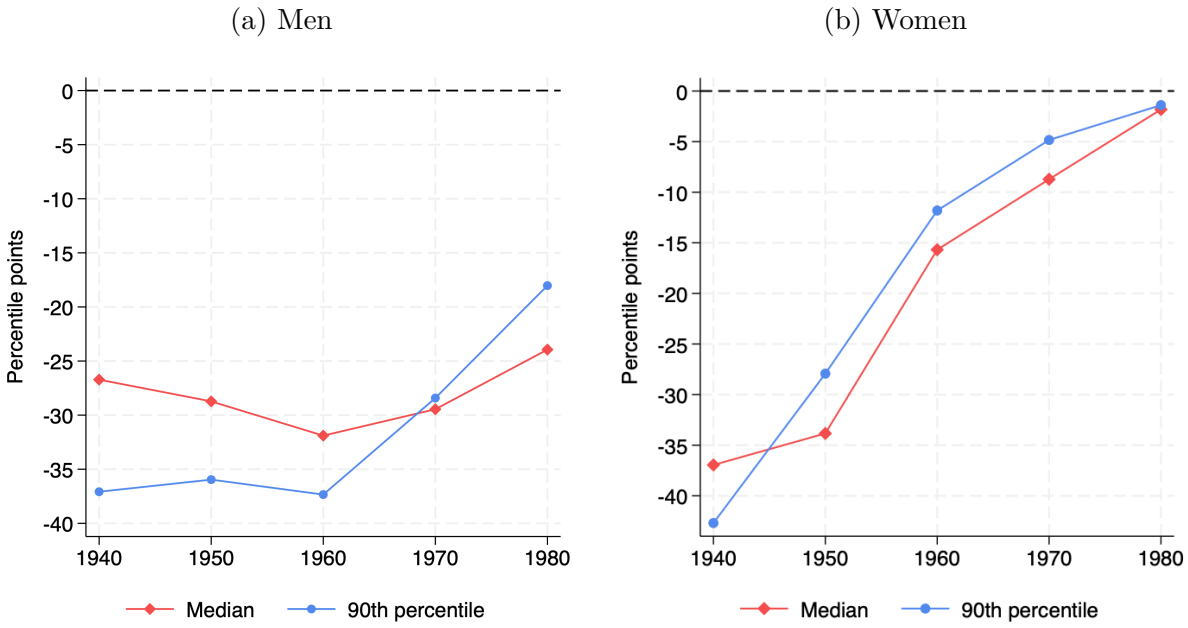
Figure 4: Black-White Earnings Level Gaps, 1940-80



Notes: This figure illustrates the racial earnings gaps from 1940 to 1980. Each point measures the difference in log earnings between Black and White adults in each decade, with the red lines tracing differences between the median log earnings in each racial group and blue lines tracing differences in log earnings of those at the 90th percentile in each racial group. Panel (a) provides estimates of the racial earnings gaps for working-aged Men, and panel (b) provides estimates of the racial earnings gap for working women. In panel (a), the sample is restricted to non-Hispanic Black and White men aged 25 to 54 at the time of each census. We include all men in this age group regardless of working status. In panel (b), the sample is women aged 25-54, but restricted to working women following the sample restrictions in Bailey and Collins (2006). More details on these sample restrictions are available in Appendix B. Data sources: Decennial Census 1940, 1950, 1960, 1970, 1980.

In contrast to the 1940-60 period, the years between 1960 and 1980, which marked the height of civil rights activity, were characterized by a sharp improvement in the relative position of Black men in the earnings distribution, especially near the top. The 90th percentile Black man, for example, moved from about the 53rd percentile of the White distribution in 1960 to the 72nd percentile by 1980. While not as large a movement, the median Black man also increased position over this time period, moving from about the 18th percentile of the White distribution in 1960 to the 26th in 1980. The picture for working women, by contrast, shows steady reductions in rank gaps at both the median and the 90th percentile over this whole period. Rank gaps at the median for working women fell from 37 to 34 log points between 1940 and 1950 and then witnessed even more dramatic convergence, falling to less than 2 percentile points by 1980. At the 90th percentile, rank gaps fell dramatically almost every decade between 1940 and 1980,

Figure 5: Black-White Earnings Rank Gaps, 1940-80



Notes: This figure plots Black-White earnings rank gaps for men in panel (a) and women in panel (b) from 1940 to 1980. The median (90th percentile) earnings rank gap is defined as the difference in percentile points between the rank in the Black distribution that a Black person with median (90th percentile) earnings has and the rank they would have in the White distribution, given their current level of income. In panel (a), the sample is restricted to non-Hispanic Black and White men aged 25 to 54 at the time of each census. We include all men in this age group regardless of working status. In panel (b), the sample is women aged 25-54, but restricted to working women following the sample restrictions in Bailey and Collins (2006). More details on these sample restrictions are available in Appendix B.
Data sources: Decennial Census 1940, 1950, 1960, 1970, 1980.

converging from a gap of 43 percentiles to about 1 percentile point.

For the 1940-80 period as a whole, for men, the earnings rank gap at the median closed only 3 percentile points, but this coincided with a reduction of almost half the earnings level gap over the same period. Thus, at the median, the results suggest that while both types of forces mattered for earnings gains by Black men, the overwhelming driver of reduced racial inequality from 1940 to 1980 were distributional forces that saw the broadening of the middle class and a sharp increase in wages for workers in the bottom half of the earnings distribution, regardless of race. In contrast, positional factors, presumably reflecting the impact of changes like the opening of universities and professions to all races, and the outlawing of overt labor market discrimination, were a more significant driver of gains experienced by the highest-earning Black men.

For working women at the median, distributional forces may be a more important driver of convergence between 1940 and 1950, but from 1950 onwards, both types of convergence are rapid and striking. For working women at the top, both types of convergence have been strong over the full period.

Why does the degree of convergence differ so much for men vs. women over this period? It is important to highlight that the results for men are based on *all* men, regardless of whether they work while those for women restrict to working women. Thus our results for men include shifts in the employment margin. To interpret the movement in the resulting earnings gaps as reflecting meaningful changes in relative earnings potential or opportunities requires the additional assumption that men with zero earnings (for whatever reason) would have earnings opportunities that would place them at (or near) the bottom of the earnings distribution should they have participated in the labor market. In our view, this is not an unreasonable assumption when comparing Black and White men for the period studied in this Chapter.

For women, however, there is a steady rise of women's labor force participation for both groups, and the gap in labor force participation between Black and White women also closes significantly over this period. Because of the very different nature of selection into or out of the labor force, especially among women who have high earnings potential, interpreting changes in racial earnings and level gaps among women remains a challenge, one that we hope future work will tackle in greater detail.[19] Later in the chapter, we explore post-1980 patterns of employment by racial group, gender, and education level. These results will highlight that movement into the labor force may come from low potential earnings women, whose counterparts among men saw their employment rates declining. These opposite shifts in labor force participation constrain what we can conclude from comparable analyses between men and women, but such analyses remain an important site for future work.

The above being said, the period of 1940-1980 saw clear improvements in the relative position of Black men and women. What positional and distributional factors drove changes in Black men and women's relative labor market outcomes during this period that spans both major dynamics in overall inequality as well as the dismantling of Jim Crow after the legislative successes of the civil rights movement? We briefly discuss some

[19] Althoff (2023) handles this challenge by focusing on household income of women and by studying married and single women separately for the period from 1950-2019. This work highlights the role of changing marital status and availability of spousal income in the racial household income gap among women. The paper shows that household income convergence between single and married Black and White women follows a similar trajectory as that among Black and White men, but notably without a worsening in differences that occurs for men at the median during the Great Recession. Presumably, these results reflect Black women's different employment patterns during the Great Recession as well as the reduced exposure of their household income to Black men's unemployment due to much lower marriage rates compared to previous decades.

examples below.

3.1 Some Positional Factors from Jim Crow through the Civil Rights Era

From the end of the Civil War until the civil rights revolution in the mid-1960s, Black Americans faced discriminatory legal, economic, political, and social institutions – commonly labeled the Jim Crow system – that adversely affected their outcomes in the labor market and in virtually every aspect of life. This race-specific mistreatment, exclusion, and discrimination revived the injustices Black Americans experienced under slavery from which the period of Reconstruction offered a brief but turbulent departure.[20]

One especially important example of race-specific mistreatment during this period was the inferior education and training provided to Black Americans. Margo (1990) documents the impact of separate and unequal schooling on Black educational attainment and the follow-on effects of inferior education throughout Jim Crow society. Compounding the direct effects of lower-quality education was the intergenerational persistence in educational outcomes – the children of parents with lower levels of education tend to have lower schooling as well. Although eventually and despite these odds, Black children over successive cohorts obtained more education, it took major shocks such as World War II and the civil rights movement that opened up new occupations to educated Black Americans to catalyze positional convergence.

Other race-specific forces from the Jim Crow period, whose effects partly determined Black economic status at the start of our study period in 1940, operated directly in the labor market. An interesting example is provided by Aneja and Xu (2022), who study the segregation of the federal civil service under President Woodrow Wilson. In 1913, Wilson began encouraging the segregation of the federal civil service. The practice quickly spread and entailed the demotion of Black federal civil servants from white collar positions to laborer positions within the service. Two cases that illustrate the policy are that of John A. Davis, a Black civil servant, and Willard A. Pollard, a White civil servant, both working as clerks and earning the exact same salary prior to Wilson's presidency.[21] After the segregation of the service, Davis was demoted to a skilled laborer position, eventually

[20]Scholars have documented the lasting impact slavery had on the economic positions of Black Americans. Althoff and Reichardt (2024) showed that among Black Americans, gaps between descendants of those enslaved until the Civil War versus those free before the Civil War persist to the present, including in income, education, and wealth. The main mechanism for persistence was the greater exposure of descendants of the enslaved to Jim Crow laws due to their greater propensity to be located in the South as a result of slavery. Laws segregating the education system and establishing separate schools for Black children likely contributed significantly to the effect of Jim Crow on reduced outcomes for Black Americans.

[21]See Appendix Figure A.IX in Aneja and Xu (2022).

climbing to a messenger position at half his former salary. Pollard retained his position and even saw his salary increase with his tenure in the service. Government positions were coveted by Black Americans because of the opportunity they represented against a backdrop of rampant and codified discrimination in the Jim Crow South. John Davis's occupation would have placed him high in the distribution of Black income. He was also at parity with Pollard before Wilson's policy. After demotion, Davis falls dramatically relative to Pollard, his White counterpart. This stark episode summarizes the impact of legalized employment segregation on the relative position of Black men before the Civil Rights struggle in the U.S.

Some of the gains Black workers experienced during these years were the result of the expansion of labor market opportunities occasioned by changes in racist policies that were made because of the exigencies of wartime production needs. Collins (2001) documents the role of the Fair Employment Practices Commission in combating discrimination against Black workers in defense production during the war. Aizer et al. (2020) show that movement of Black workers into semi-skilled occupations due to exceptional demand during World War II had a persistent effect on Black relative occupational standing. They propose a mechanism of employer learning whereby employers previously statistically discriminating against Black workers updated positively regarding Black workers' productivity during the war. Ferrara (2022) finds similar mechanisms explaining persistent occupational upgrading among Black workers induced by labor shortages during the war.

The passage and implementation of the Civil Rights Acts of the mid- to late-1960s represented perhaps the main obvious positional forces working to improve Black workers' relative labor market performance in these years. Civil rights legislation outlawed discrimination and unequal treatment on the basis of race in the labor market, and in various other spheres including education, housing, and healthcare. Reduced discrimination in each of these different sectors might reasonably have been expected to not only affect the relative outcomes of Black Americans, but the overall positional effect of these forces may been magnified by their interaction. For example, the opening up of occupations from which Black workers had been previously barred would be accelerated by concurrent improvements in the quality and quantity of education obtained by successive Black cohorts (Hsieh et al., 2019). Overall, there is a strong consensus among scholars that the various Civil Rights anti-discrimination policies drove much of the earnings gains Black workers experienced in the 1960s and 1970s (Donohue and Heckman, 1991; Wright, 2013; Aneja and Avenancio-Leon, 2019).[22]

[22]Sundstrom (2000) also argues for a significant role of increased educational attainment in Black women's entry into clerical work in the 1960s. However, it's important to note that anti-discrimination efforts were also key to opening up further educational and labor market opportunities for Black children. Disentangling the role that anti-discrimination efforts played in Black women's breaking barriers into better paid clerical jobs out of lower paid occupations, such as in domestic service, would be a fruitful

3.2 Key Distributional Forces: 1940-1980

In 1940, the race-based mistreatment that Black Americans experienced during Jim Crow, and the long-lasting effects of slavery, led to their overrepresentation at the bottom of income and wage distribution. Over the next few decades, up through the civil rights era, race-neutral changes in labor market institutions that equally affected all persons located at lower positions in the earnings distribution should thus have had an outsized effect on the improvement in the relative outcomes of Black workers, because of where historical forces had disproportionately caused them to be located. One example is minimum wages, which represented a potent distributional force during this period.

Derenoncourt and Montialoux (2021) show that the extension of the federal minimum wage to industries previously exempt from coverage contributed to one-fifth of the decline in racial earnings gaps, similar in order of magnitude to the portion of the decline explained by federal anti-discrimination legislation and relative schooling improvements.

When it was first adopted, the federal minimum wage applied to a limited set of industries deemed to affect interstate commerce. Exempt from coverage were agriculture, retail, and services, as well as state and local government sectors. These exemptions resulted from a political process during which Southern Democrats opposed the introduction of federal minimum wages in these key sectors of the Southern economy where Black workers were overrepresented. Sharp declines in the racial earnings gap after 1965 were driven by the industries rolled into federal minimum wage coverage by the 1966 amendments to the Fair Labor Standards Act.[23]

Derenoncourt and Montialoux (2021) leverage the industry variation in coverage to estimate the causal effect of coverage extension on wages and on the racial earnings gap. They find that the policy's impact on wages was twice as large for Black workers as it was for White (see Figure 6). Meanwhile, employment effects were limited. The net result was that expansion of federal minimum wages to these new sectors led to disproportionate earnings gains for Black workers and helped close the economy-wide racial earnings gap. Decomposing the effect of the policy on the racial gap, the authors find that 80% of the impact was through racial gap declines within the newly covered industries and 20% due to Black overrepresentation in the newly covered industries. Thus, the majority of the effect can be explained by Black workers being concentrated in the lowest paying jobs in the newly covered sectors.

Unions, another important labor market institution affecting the distribution of wages, also have the potential to affect racial gaps. Unions have historically compressed the wage distribution, and declining union density in the 20th century has contributed to rising

area for future research.

[23] Wursten and Reich (2023), who study state minimum wage law changes in the U.S. since the 1990s, find that the impact of minimum wages on racial inequality persists to the present.

wage inequality (DiNardo et al., 1996). Farber et al. (2021) show that Black workers were more likely to be union members throughout the second half of the 20th century and that the union premium was also higher for Black workers, thus contributing to lower racial gaps in the union sector.

Figure 6: Wage effect on Black vs. White workers of 1967 reform extending U.S. federal minimum wage coverage

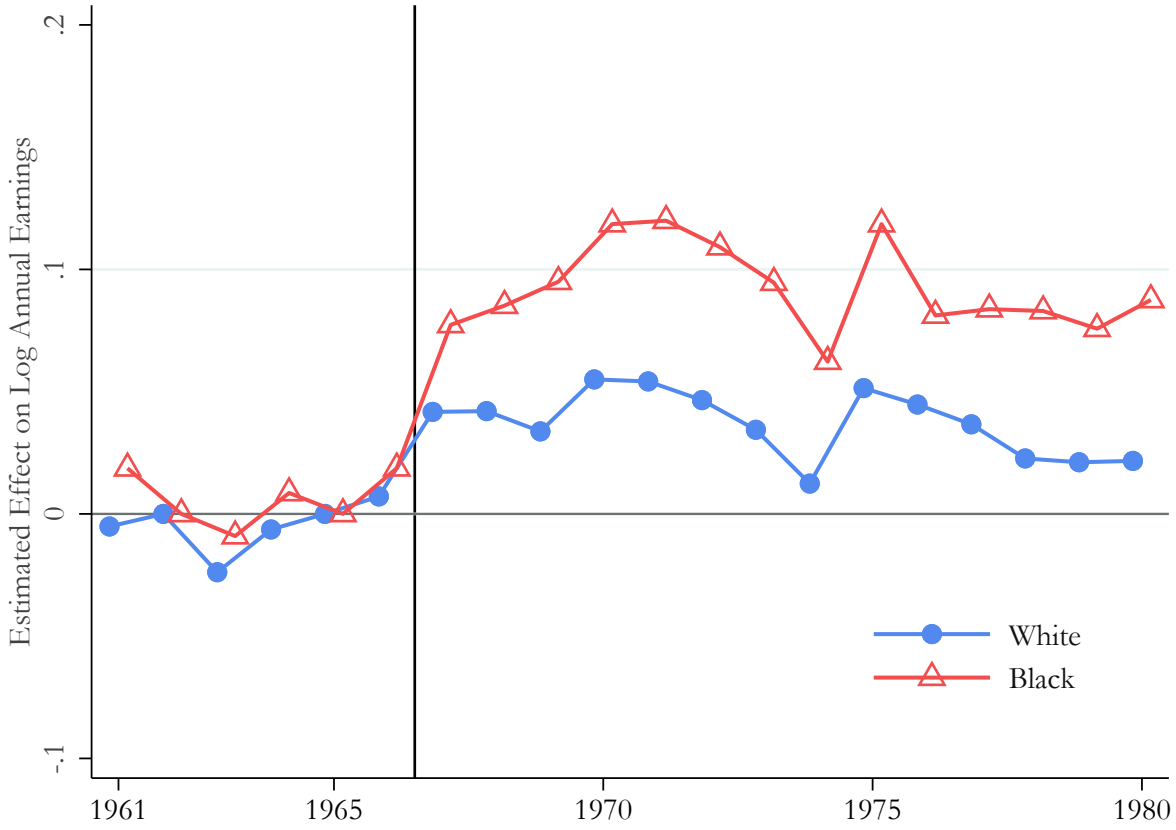


Figure reproduced from Derenoncourt and Montialoux (2021).
Notes: This figure shows estimates of the effect of the 1967 federal minimum wage expansion on earnings for Black and White men. The sample uses data on adults aged 25–55, who worked more than 13 weeks in the prior year and three hours in the prior week. Wage earners in non-group quarters with non-missing industry and occupation codes.
Data sources: Current Population Survey.

Forces that exacerbate distributional inequality tend to also exacerbate Black-White labor market gaps. One such economy-wide distributional factor is international trade. Batistich and Bond (2023) examine the impact of Japanese import competition on Black-White wage gaps during the 1970s and 1980s, finding that it significantly reduced the rel-

ative wages and employment of Black workers.[24] The authors find that the import shock accounts for 78-96% of the increase in Black-White inequality at the median among men. Enriquez and Kurtulus (2023) also document the impact of Japanese import competition on racial gaps during this period, showing that manufacturing operators–an occupation with an overrepresentation of Black men relative to other occupations in manufacturing – were most negatively affected.[25]

A potential area for future work is to revisit major episodes of changes in the return to skill during the 20th century to examine their impacts on racial earnings gaps. For example, Goldin and Margo (1992) describe the Great Compression in the income distribution between 1940 and 1950. A portion of the decline in inequality was driven by wartime labor market institutions, such as the National War Labor Board; however, additional factors include increases in the demand for less skilled labor during a period when the supply of skill in the labor market was expanding. These forces of compression contrast with the period from 1980 to the present where demand for college-educated workers increased at a time when college completion rates also slowed. These changes in the demand for skill account for much of the rise in wage inequality in the last four decades. Given racial gaps in educational attainment, skill-biased technical change along the lines described above may have contributed to stagnating Black-white earnings gaps.

4 The Post-Civil Rights Era: Slowed Convergence and an Altered Social Landscape

Having described the evolution of Black-White inequality for men and women from 1940-1980, we now focus on the period following the civil rights era, 1980-2022. In transitioning to this modern period, we can broaden our analysis to provide a much richer picture of recent changes in racial and ethnic inequality in the United States. In particular, we extend our analysis to (i) consider additional racial and ethnic groups – namely, Hispanic Americans and non-Hispanic Asian Americans in addition to non-Hispanic Black and White groups previously considered, and (ii) we break out many findings by immigration status, i.e., whether someone was born in the United States or another country.

[24]Our analysis of employment and labor force participation rates of Black men from 1940-1980 also show a large decline in employment rates between 1970 and 1980, consistent with the period of heightened import competition with Japan.

[25]Both papers also examined how these main effects exhibited heterogeneity by the level of racial prejudice in a region. Batistich and Bond (2023) find that the effects were strongest in the South, where Black men had less and lower-quality schooling, and that CZ-level racial prejudice (measured by 1968 George Wallace vote share) did not significantly interact with the main effect. However, Enriquez and Kurtulus (2023) find that a more granular, county-level Wallace share as well as another measure of racial prejudice are correlated with the degree of occupational segregation for manufacturing operators, suggesting that racial prejudice could have amplified the distributional consequences of the trade shock.

Enriching our analysis this way requires careful consideration of several significant changes to the economy and to American society more generally over the past half-century. These changes have fundamentally altered the composition of the U.S. population and changed the nature of selection into the labor force in several distinct ways. They highlight the need to expand upon the traditional focus on the Black-White, U.S.-born population – and specifically men in those two groups – that historically accounted for the lion's share of work in labor economics on racial labor market inequality.

In this brief transition section, we highlight several substantial changes to the American economy that provide background for interpreting the broad trends in measured racial and ethnic inequality since 1980, which we present in Sections 5 and 6 below. We begin by summarizing changes in the racial and ethnic composition of the U.S. population between 1940 and 2022. Over this period there has been an increase in the share of Black, and especially Asian and Hispanic, adults in the prime-aged population. These increases have been accompanied by a substantial decline in the White share from almost 90 percent in 1940 to less than 55 percent by 2022, with much of this reduction happening in recent decades. High immigration rates from Latin America and Asia since the late 1960s have been a significant driver of this change in the demographic composition over this period. However, the share of the U.S. population born outside the United States has been rising in recent decades for all racial and ethnic groups. As we show below, the share of Black prime-age adults born outside the United States, for example, has risen massively over the past eight decades, going from less than 2 percent in 1940 to over 15 percent in 2022. Much of that growth has occurred since 1980 – during the post-civil-rights era on which the rest of Chapter mainly focuses. These changes in the immigrant share of the population have important implications for measuring changes in racial and ethnic inequality.

Other social and economic changes since 1980 have shaped the nature of selection into the labor force. Of particular importance for the evolution of Black-White inequality for men since 1980 is the sharp increase in incarceration rates in the United States, which has affected Black men most directly and intensely. As we show below, the share of prime-aged Black men incarcerated at the time of the U.S. Census, for example, rose from about 3 percent in 1980 to almost 9 percent in 2000. Comparable figures also increased for other racial and ethnic groups, but not nearly to the same extent. Incarceration rates have moderated some by 2022 but remain elevated relative to 1980. Overall, this sharp increase in incarceration rates has had a central role in the changing nature of selection into work for men near the bottom of the potential earnings distribution. Beyond the sheer incapacitation effect of locking up so many men at any point in time, the dynamic impact of prior convictions and incarceration on labor market prospects post-release can create a long tail of employment effects for a substantial share of the adult male

population.

In addition to the specific phenomenon of incarceration, a rising trend of non-work and non-labor force participation among men – especially those with less than a college degree – characterizes the post-1980 period. These increases in non-participation have affected men of all racial groups, but they have been especially pronounced for Black men (Charles et al., 2016; Abraham and Kearney, 2020; Coglianese, 2018).

Many social and economic changes have impacted the economic opportunities and choices for women over the past several decades, including but not limited to starkly declining marriage rates and rising non-work among men – both of which affect the level of household income available to women. These changes have been much starker for Black women, just over 30% of whom were married in 2022 compared to nearly 75% in 1940. To provide a broad sense of just how substantial several of these changes have been, we report changes in marriage rates for women by racial group as well as employment rates for men and women by race/ethnicity and education status below.

Mirroring in inverse the decline in employment among non-college educated men, the employment rates of non-college educated women climbed substantially. For most groups, this has led to substantial reductions in the employment gaps between men and women. For the Black non-college educated group, women's employment rates now exceed those of men. Generally speaking, this increase in employment rates among women is likely accompanied by a reduction in some of the obvious differential selection into the labor market by race that marked earlier decades. These broad changes in labor force participation have important implications for the interpretation of measured changes in racial earnings inequality for women. We discuss these implications in greater detail below.

4.1 Three Large Societal Changes

4.1.1 Changing Demographics and Immigration

Table 1 reports two sets of numbers that characterize the changing demographic composition of the U.S. population since 1940. To match our sample selection criterion when measuring racial and ethnic earnings inequality, we calculate both sets of numbers using prime-aged adults aged 25-54. The upper panel highlights the population shares for Hispanic adults and non-Hispanic Asian, Black, and White adults as reported in the Census or American Community Survey for the years 1940, 1980, and 2022. Beginning in 2000, the Census began allowing respondents to choose multiple race categories and, as a result, we include the share of respondents who selected multiple race categories and did not select Hispanic as a separate, mutually exclusive category in 2022.

Table 1: Shifting Demographics of U.S. Population, Ages 25-54

	1940	1980	2022
Panel A: Share of Population			
Asian	0.2	1.9	7.1
Black	9.3	10.6	12.5
Hispanic	1.4	6.2	20.4
White	89.0	80.7	54.9
Other	0.2	0.7	1.1
Multiple Racial Categories			4.0
Panel B: Share Born Outside the U.S.			
Asian	77.9	74.7	76.0
Black	1.9	4.3	15.6
Hispanic	52.1	51.4	49.4
White	13.3	4.4	6.0
Other	2.4	9.3	16.5
Multiple Racial Categories			15.7

Notes: This table describes the changing demographics of the U.S. adult population (aged 25-54) from 1940 to 2022. Figures for racial and ethnic categories are defined to be mutually exclusive. Individuals are categorized as Asian, Black, White, Other, or Multiple Racial Categories only if they do not self-identify as Hispanic. The option to identify with multiple racial categories was not available to respondents until the 2000 Census. Panel A shows the percentage of the entire population who fall into each of the specified racial or ethnic categories each census year. Panel B shows the percentage of those born outside of the United States who fall into each of the specified racial categories.
Data sources: Decennial Census 1940, 1980; American Community Survey 2022.

The table reveals a significant shift in the demographic structure of the U.S. prime-aged adult population over the past eight decades. Asian and Hispanic shares have risen from just 0.2 and 1.4 percent, respectively, in 1940 to over 7 and 20 percent by 2022. The Black share has also increased, albeit at a more modest rate, from 9.3 to 12.5 percent. By contrast, the White share of the population has sharply declined from almost 90 percent in 1940 to 54.9 percent in 2022. Most of this decline has occurred in the most recent four decades, underscoring the importance of these demographic changes since the 1980s.

The lower panel of the table reports the share of the prime-aged adult population born outside the United States, again showing these for 1940, 1980, and 2022, and separately by race and ethnicity. Interestingly, the share of the Asian and Hispanic populations who were born outside the United States has remained remarkably steady over this time period, at about 75 percent and 50 percent, respectively. As a result, both historically and in the modern era, accounting for immigration status is essential for any analysis of inequality for these two major ethnic groups. The table also shows an important change

in the immigration share for Black adults, rising from only 1.9 percent in 1940 and 4.2 percent in 1980 to almost 16 percent in 2022. By contrast, the immigrant share for White prime-aged adults has fallen sharply over the past 80 years, from 13.3 percent in 1940 to only 5.7 percent in 2022. These differences in immigration patterns in both historical and recent time periods highlight the need for thoughtful treatment of this issue when examining changes in racial and ethnic inequality related to earnings and employment.

4.1.2 A More Carceral Society

Table 2 reports incarceration rates at the time of the Census or ACS survey in 1980, 2000, and 2022, showing these separately by race and ethnicity and for men and women. The figures reveal a sharp increase in incarceration rates from 1980 to 2000: nearly doubling for White men (from 0.7 to 1.3 percentage points) and increasing by 130 percent for Hispanic men (from 1.3 to 3.0 percentage points). An even larger 170 percent increase for Black men, from an already elevated base rate of 3.3 percentage points, brought the incarceration rate of Black prime-aged men to an astounding 8.9 percent in 2000. While incarceration rates have receded modestly for Asian, Black, and Hispanic populations since 2000, they remain elevated for each racial and ethnic group relative to their 1980 levels in 2022. As the lower panel of Table 2 makes clear, incarceration rates for women are generally an order of magnitude smaller than those of men in the same racial and ethnic group. A similar sharp increase in incarceration rates from 1980 to 2000, followed by a decline from 2000 to 2022, is evident for Black women, however.

Table 2: Incarceration Rates by Race and Ethnicity, Ages 25-54

	1980	2000	2022
Panel A: Men			
Asian	0.3	0.5	0.4
Black	3.3	8.9	6.4
Hispanic	1.3	3.0	2.0
White	0.7	1.3	1.3
Panel B: Women			
Asian	0.1	0.1	0.1
Black	0.4	0.9	0.5
Hispanic	0.2	0.3	0.2
White	0.3	0.2	0.3

Notes: This table reports incarceration rates by race and gender from 1980 to 2022. Panel A presents rates for men and Panel B for women. Racial and ethnic categories are defined to be mutually exclusive. Individuals are categorized as Asian, Black, White, if they do not self-identify as Hispanic and do not identify with multiple racial categories, starting this option is available in 2000 and 2022. Both panels display the incarceration rates as a percentage of the total incarcerated population at the time of data collection.
Data sources: Decennial Census 1980, 2000; American Community Survey 2022.

Overall, the substantial rise in incarceration rates since 1980 has had a profound impact on the labor market opportunities of a large share of the adult male population. In addition to the obvious incapacitation effect, the impact of charges, conviction, incarceration, and parole restrictions on employment and earnings may continue long after release from prison. These changes have been especially evident for individuals on the margin of participating in the labor market at all and, not surprisingly, have affected Black men most acutely. As we discuss in much more detail in Section 5 below, the sharp increase in incarceration in the post-civil-rights era has had a central role in shaping the evolution of racial and ethnic inequality, both employment and earnings, for men during this period.[26]

[26]The role of incarceration and changes in the severity of punishment on employment and earnings gaps is studied in more detail in Neal and Rick (2014) and Bayer and Charles (2018), as well as in Mueller-Smith (2015), Agan et al. (2024), and Garin et al. (2024). Feigenberg and Miller (2021) examine how the severity of punishment in the criminal legal system is affected by the local political economy and, specifically, how it varies with the racial composition of local communities and defendant pools. Another related line of research in economics has focused on testing for racial discrimination in the criminal legal system, including research on motor vehicle stops and searches (Anwar and Fang, 2006; Feigenberg and Miller, 2022), policing (Ba et al., 2021), bail setting (Arnold et al., 2018; Dobbie et al., 2022), jury trials (Anwar et al., 2012), and child protective services (Baron et al., 2024).

4.1.3 Dramatic Changes in Household Structure

Figure 7 summarizes the changes in marriage rates for prime-aged women and men from 1940 to 2022. Panel (a) shows the trend for men, and panel (b) shows the trend for women. Marriage rates were declining steadily for men across all racial groups as early as 1970 and for women as early as 1940, with the decline accelerating for women after 1970. This decline has been especially pronounced for Black women. Around 75% of Black women aged 25-54 were married in 1940. This number fell to just over 30% by 2022. Declines for other racial groups have also been pronounced, but not to the same degree. For example, in 1940, 80% of White women aged 25-54 were married, compared with around 60% today. Among men, the patterns of declining marriage rates across different racial groups are similar.

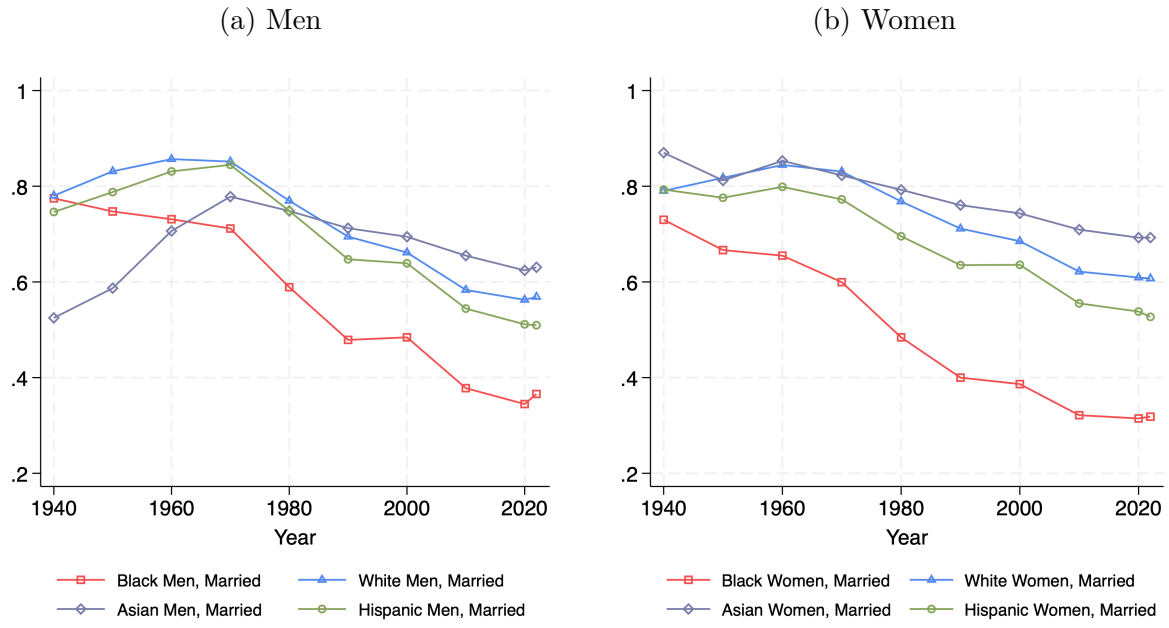
A number of economic and sociological explanations have been put forth for these large declines in marriage rates. These include the advent of and access to contraception, which delayed childbearing, and changes in gender norms during the feminist movement of the 1960s and 1970s (Moynihan, 1965; Akerlof et al., 1996; Chafetz, 1995; Goldin and Katz, 2002; Bailey and Lindo, 2018). In addition, other work finds that economic declines reduced the marriageability low-skilled men and attenuated the gains from marriage (Wilson, 1987, 1996; Autor et al., 2019). Finally, some of the reduction may be attributable to changes in legal services and the institutions of marriage and divorce, which made divorce easier and removed some of the legal advantages of marriage over cohabitation (Goodman-Bacon and Cunningham, 2019; Lafortune and Low, 2023).

4.2 Employment Rates for U.S.-Born Men and Women After 1980

The demographic and societal changes outlined above raise important selection issues for men as well as women from all racial groups for the period after 1980. We now describe the evolution of employment rates since 1980 for Asian, Black, Hispanic, and White men and women. We limit this portion of our analysis to women and men born in the United States to account for the vast differences in immigrant shares across racial and ethnic groups shown in Table 1 above.

Figure 8 depicts the employment rates of U.S.-born Asian, Black, Hispanic, and White individuals from 1980-2022, separately for those with and without a college degree. Patterns for men are shown in panel (a), and those for women are shown in panel (b). The solid lines show employment rates for those with a college degree, which have generally moved together and remained at high rates throughout the entire period. While there is some fluctuation in these rates based on the macroeconomic conditions, employment

Figure 7: Marriage Rates by Racial Group, 1940-2022



Notes: Panel (a) shows marriage rates among men aged 25-54 by racial group between 1940 and 2022. Panel (b) shows analogous rates for women by racial group.
Data sources: Decennial Census 1940, 1960, 1980, 2000, 2010; American Community Survey 2022.

rates of men with a college degree were above 90 percent and those of college educated women were above 80 percent, including in both 1980 and 2022 for men and women of each racial and ethnic group.

Patterns for those without a college degree, shown with dashed lines, are quite distinct. Employment rates for non-college-educated men from each racial and ethnic group, shown in panel (a), are significantly lower than for those with a college degree. Moreover, these rates fell sharply from 1980 to 2000 for each major racial group and then, after recovering some by 2007, dropped again during the Great Recession and its aftermath. A positive trend is noticeable since around 2010, but the employment rate of men in each group in 2022 remains significantly below its respective 1980 level.

Several aspects of Figure 8a are especially important for understanding racial and ethnic inequality for men over this time period. First, there has been a broad convergence in employment rates by education among U.S.-born Asian, Hispanic, and White men from 1980-2022, with these employment gaps declining to just a few percentage points by the late 2010s and early 2020s.

For Black men, however, the experience of the past several decades has differed sharply by education. For Black men with a college degree, employment rates have largely tracked

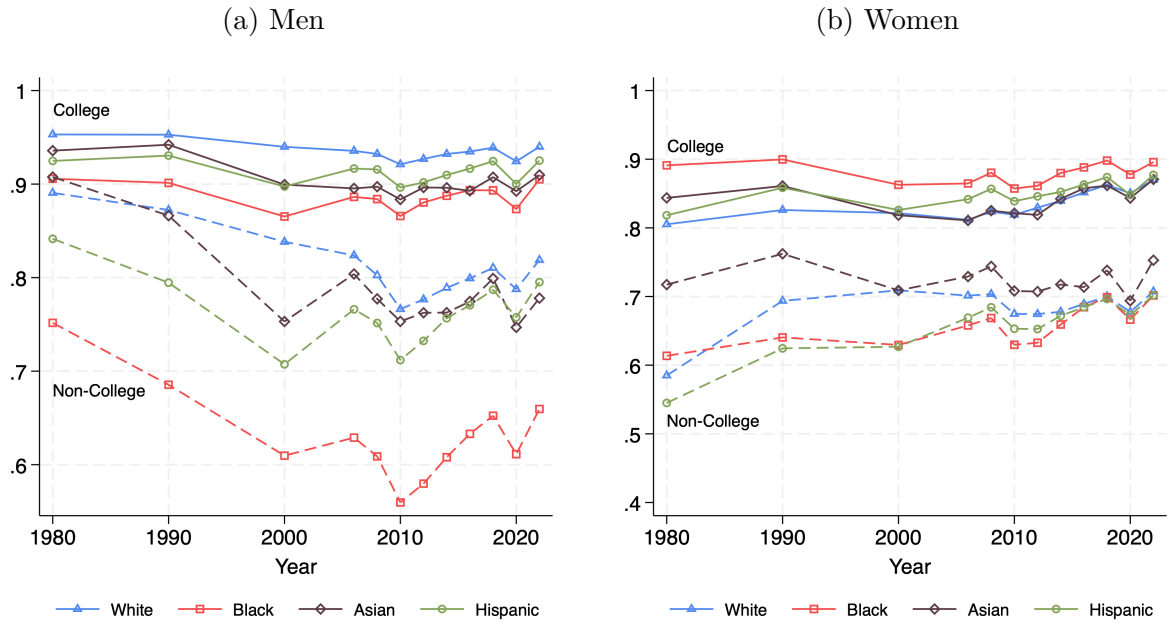
those of men in other racial and ethnic groups. Moreover, the gaps in 1980, which were already fairly small, have tightened further by 2022. For Black men with less than a college degree, however, the period between 1980 and 2011 was especially devastating, with employment falling from 75 percent in 1980 to just over 55 percent in 2010-11. Over this same time period, the Black-White employment gap for men without a college degree increased from about 16 to almost 20 percentage points. As it turns out, *more than the entire* increase in the Black-White employment gap for men in this education category can be attributed to the rapid nation-wide increase in incarceration rates over this time period. In 1980, the fraction of native-born Black and White adult men with less than a college degree who were currently incarcerated when the Census survey was conducted was 3.7 and 0.9 percent, respectively – a 2.8 percentage point gap. By 2010-11, these same numbers had risen to 10.6 and 2.2 percent, an increase in the racial incarceration gap for men with less than a college degree of 5.6 percentage points, which amounts to about 140 percent of the change in the employment gap over this time period.

Since 2010, incarceration rates have declined to 9.3 percent for U.S.-born Black men with less than a college degree while remaining at 2.2 percent for comparable White men. These rates, of course, remain well above 1980 incarceration rates. As a result, viewed over the entire 1980-2022 time period, the majority of the decline of employment for Black men without a college degree can be attributed to an increase in the fraction of men currently incarcerated at the time of the Census or ACS survey. This measure of the impact of incarceration only accounts for the incapacitation effect of being institutionalized, accounting for none of the impact a period of incarceration (or a recent conviction or other interaction with the criminal justice system) might have on subsequent employment prospects.

Figure 8b shows the employment rate for U.S.-born Asian, Black, Hispanic, and White women from 1980-2022, separately for women with and without a college degree. Many distinct aspects of this figure are important for our understanding of racial and ethnic economic inequality over the past several decades. The changing nature of the selection of women into the labor market over this period in particular has important implications for interpreting changes in earnings level and rank gaps for women, as we do below.

Focusing first on women with a college degree, there has been strong convergence in employment rates by race and ethnicity from 1980-2022. In 1980, for example, 89 percent of Black college-educated women worked, compared to only 80 percent of their White counterparts. By 2022, this gap had closed to less than 3 percentage points, with 87 percent of White college-educated women working, compared to just under 90 percent of Black women. Meanwhile, the employment rates of U.S.-born, college-educated Asian and Hispanic women fell in between those of Black and White women for most of this time period, including in both 1980 and 2022.

Figure 8: Employment Rates by Race and Education, 1980-2022



Notes: This figure depicts the employment rates among U.S.-born, working adults by race and education level from 1980 to 2022. Panel (a) presents the patterns for men across the time period, and panel (b) presents the analogous patterns for women. Solid lines represent the employment rates for those with a college degree, and dashed lines represent the employment rates for those without a college degree. The sample is restricted to men and women who are between the ages of 25 to 54 at the time of each census or survey.
Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

The evolution of employment rates for women without a college degree also reveals a sharp convergence from 1980 to 2022, but with a very different starting point. In particular, among U.S.-born women without a college degree, employment rates were much higher for Asian women in 1980 (72 percent) than for Black (62 percent), White (58 percent), or Hispanic women (55 percent). By 2022, while the employment rate of Asian women remains a bit higher, these gaps had closed significantly, with Black, Hispanic, and White women without a college degree all working at a rate of approximately 70 percent. These changes in the employment rates for women without a college degree mirror in reverse the changes occurring for their counterparts among men, suggesting a role for declining marriage rates and employment among non-college educated men in driving increases in non-college women's employment.[27]

[27] A number of papers have noted other drivers of increasing employment among low socioeconomic status women in the 1990s, such as welfare reform and income support programs that are increasingly contingent on working and are targeted towards single women with children – e.g., the earned income tax credit (EITC) (Bastian, 2020; Nichols and Rothstein, 2015; Marianne and Hoynes Hilary, 2010;

The changing selection of women into employment over this time period affects the interpretation of changes in earnings gaps that we report below. The relative increase in the employment rate of college-educated White women, and convergence with that of Asian, Black, and Hispanic college-educated women, for example, reflects a broader trend towards an increase in the employment rates of White women with relatively high earnings potential. This increasing selection into the labor market on the basis of earnings potential, in turn, shifts measured earnings gaps considerably in the direction of favoring White women. In this way, changes in measured earnings gaps reflect a combination of fundamental changes in relative earnings opportunities and changes in selection along these lines.

The broad racial and ethnic convergence of employment rates by education level by 2022 does suggest, however, that differential selection is less important in interpreting earnings gaps in 2022 than in 1980 (or earlier periods). As a result, measured racial and ethnic earnings gaps for women in recent years likely approximate gaps in earnings potential or opportunities far better than in any previous time period.

In what follows, we continue to use non-Hispanic White individuals (men or women, depending on the specification) as the reference group. In particular, the dependent variable in the earnings rank regressions reported below is individual i's percentile rank as measured *within the non-Hispanic White earnings distribution*. The analysis focuses on the post-1980 period and will discuss, where relevant, the selection issues arising from some of the broader sociological changes discussed above. As mentioned above, we study individuals in four major racial and ethnic groups using the categories provided in the Census and ACS: non-Hispanic Asian, non-Hispanic Black, Hispanic, and non-Hispanic White. For the years in which the Census or ACS allows respondents to report multiple racial and ethnic categories, we include only individuals who report one of the four categories above exclusively. Finally, as in Bayer and Charles (2018), we continue to use labor market earnings, plus business and farm income, as the measure of earnings and report results for all persons, including those who have zero earnings in a given year because they are not working.

5 Black-White Earnings Gaps in the Post-Civil-Rights Era

In this section, we extend the analysis of earnings gaps between Black and White men from Bayer and Charles (2018) to the year 2022 and examine gaps among Black and White women as well. Later, we present decompositions of changes in men's earnings and

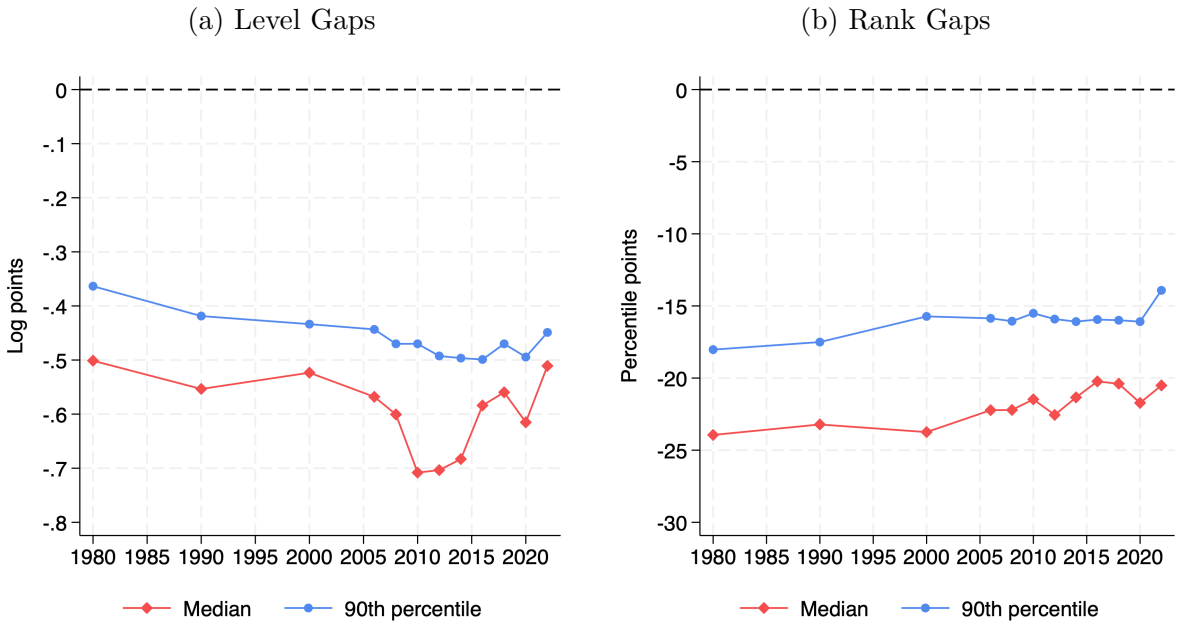
Whitmore Schanzenbach and Strain, 2021; Hoynes and Schanzenbach, 2018; Ziliak, 2015).

employment inequality from 1980-2022 into distributional and positional components.

5.1 Black and White Men in the Post-Civil Rights Era

Panels (a) and (b) of Figure 9 plot level and rank gaps for Black men at the median and 90th percentiles from 1980 to 2022 – the modern, post-civil-rights era. Something to notice immediately is that rank gaps have continued to close over this time period, although at a much slower pace than during 1960-1980. In particular, the median Black man now sits at the 29th percentile of the White earnings distribution versus the 26th in 1980. Over the same time period, the 90th percentile Black man gained 4 percentile points, moving from the 72nd to the 76th percentile of the White distribution.

Figure 9: Black-White Earnings Level and Rank Gaps, Men, 1980-2022



Notes: This figure documents Black-White earnings level and rank gaps for working-aged men from 1980 to 2022. The earnings level gap is the difference between the log earnings of the median or 90th percentile worker in the Black income distributions and the log earnings of the median or 90th percentile worker in the White income distribution. The rank gap is the difference between the percentile rank of a Black worker at the median or 90th percentile on the total income distribution and percentile rank of a White worker t the median or 90th percentile on the income distribution. The sample is restricted to men between the ages of 25 to 54 at the time of each census or survey.
Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

Despite these improvements in position, the earnings level gaps at the median and 90th percentile have been flat or even widened from 1980-2022. At the 90th percentile,

for example, the gap has grown by about a quarter, from 36 to 45 log points. This movement in opposite directions of the level and rank gaps is again indicative of broader changes in the economy, in this case signaling the generic increase in earnings inequality over the past several decades. In particular, the sharp improvement in the earnings of workers in the top 10 percent of the earnings distribution has stretched the left tail of the distribution, increasing the difference in earnings for workers near the 90th versus 75th percentile of the overall earnings distribution, which is approximately where the 90th percentile Black man sits in the distribution. As a result, these distribution forces have disproportionately benefited the 90th percentile White man, thereby increasing the level gap with the 90th percentile Black man.

The higher frequency movements in the level and earnings gaps through the Great Recession and Covid pandemic also illustrate the distinct information regarding changing inequality reflected in level and rank gaps. Despite the fact that the relative position of the median Black man in the economy changed very little (actually improved slightly) during the Great Recession and its slow recovery from 2008-2015, its impact on the Black-White earnings level gap at the median was substantial: a 14 log point reduction from 2006-07 to 2010-11 that took almost a full decade to return to baseline in the late 2010s. A similar, although smaller, increase in the Black-White level gap at the median is also evident at the peak of the Covid pandemic in 2020-21, with the recovery in 2022 bringing the gap back to its smallest magnitude since 1980.

More generally, after several decades of widening inequality in the overall earnings distribution from 1980-2015, including sharp increases in earnings at the top and increasing incarceration and lack of employment opportunities at the bottom of the distribution, the past decade has seen improving employment and wages for workers in the bottom half of the earnings distribution. This has helped to close the median earnings level gap between Black and White men by almost 20 log points from 2010-11 to 2022.

5.2 Black and White Women in the Post-Civil-Rights Era

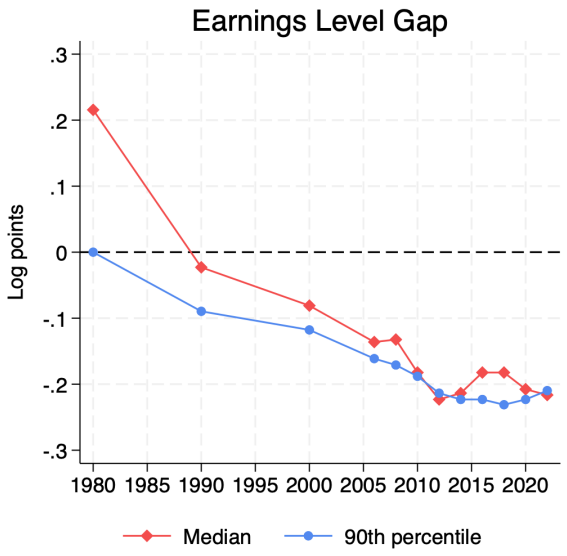
Figure 10 depicts earnings level and rank gaps for Black and White women. This figure is directly comparable to Figure 9 for men shown above. Both the level and rank gaps at the median and 90th percentile reveal a shift from favoring Black women at the beginning of the time period to favoring White women in recent years. As anticipated by our discussion in the Section 4, this shift largely reflects a differential change in the nature of selection into employment – in particular, a relatively large increase in the fraction of White women with high earnings potential moving into the labor market in 2022 compared to 1980.

As mentioned above, differential selection into employment by race for women is

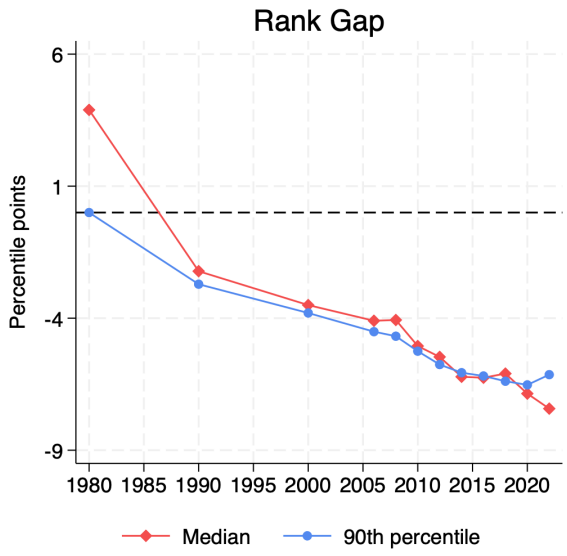
much less evident in 2022 than in earlier time periods. This suggests comparing the Black-White earnings rank and level gaps for women relative to men may be much more meaningful in recent years. The earnings rank gaps at the median and 90th percentile in 2022 for women were about 8 and 6 percentile points, respectively, and the earnings level gap was about 20 log points at both quantiles. Interestingly, each of these numbers is about 40 percent of the comparable figures for men. While some differential selection into employment for women is still likely reflected in the 2022 numbers, it seems likely that Black-White gaps in earnings potential and labor market opportunities for women are significantly smaller than those for men.

Figure 10: Black-White Earnings Level and Rank Gaps, Women, 1980-2022

(a) Level Gaps



(b) Rank Gaps



Notes: This figure presents the patterns of earnings level and rank gaps between Black and White working-aged women from 1980 to 2022. A level difference is defined as the difference between the median (90th percentile) log income of a Black worker and the median (90th percentile) log income of a White worker. A positive level difference indicates a Black worker at a certain percentile of the Black log income distribution earns more than that White worker of the same percentile of the White log income distribution. The rank gap is defined as the difference between the rank of a Black worker on the total income distribution and the rank of a White worker on the total income distribution. If there is a positive rank gap, a Black worker at a certain percentile of the Black income distribution, e.g. the median, is a higher rank on the total income distribution than the median White worker on the White income distribution.

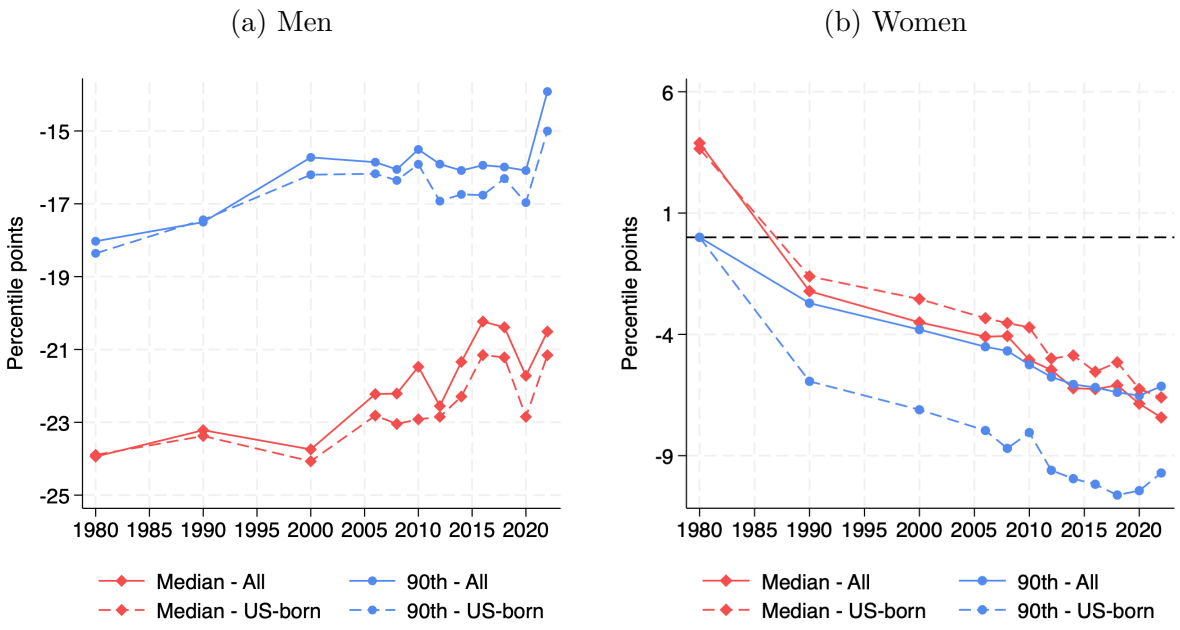
The sample is restricted to women between the ages of 25 to 54 at the time of each census or survey. Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

5.3 Earnings Gaps for U.S.-Born Black vs. White Men and Women

A common question that arises in studying the dynamics of racial inequality over long time periods is how immigration patterns might affect aggregate statistics like earnings level and rank gaps. Depending on the country of origin and historical time period, recent immigrants might be especially likely to take particularly high or low paying jobs. This might, in turn, affect aggregate inequality measures in systematic ways, potentially masking fundamental shifts in the economy and racial discrimination.

To examine the impact of the recent increase in Black immigration on these inequality measures, Figure 11 reports rank gaps at the median and 90th percentile for a sample that includes only *US-born* non-Hispanic Black and White men and women. Panel For ease of comparison, the rank gaps for all men and women shown in Figures 9b and 10b are also included in Figure 11, panels (a) and (b).

Figure 11: Black-White Earnings Rank Gaps, U.S.-Born and All, 1980-2022



Notes: This figure plots earnings ranks gaps for all Black and White working age individuals separately for all individuals (solid line) and the U.S.-born (dashed line). Panel (a) presents the results for men, and panel (b) presents the results for women.
The sample is restricted to individuals between the ages of 25 to 54 at the time of each census or survey. Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

The U.S.-born-only analysis for Black men reveals a small but noticeable impact of immigration on aggregate inequality measures. In particular, the decline in inequality as

measured by rank gaps from 1980 to 2022 is about 85 percent as large when measured for U.S.-born vs. all men at both the median (3.0 vs. 3.5 percentile points) and 90th percentile (3.3 vs. 3.9 percentile points). In this way, Black immigrants are relatively more positively selected for earnings compared to White immigrants. On the whole, however, immigration is not significantly affecting the broader trends in Black-White earnings inequality among men, as captured by earnings rank gaps.

The equivalent analysis for Black women shows moderate differences in the trend in median earnings rank gaps between 1980 and 2022, with the "advantage" for Black women in 1980 being modestly reduced when only the U.S.-born are considered. From the 1990s onwards, earnings rank gaps at the median have been fairly similar between U.S.-born women and all women, but with U.S.-born gaps slightly smaller than gaps among all women. A very different pattern emerges at the 90th percentile. There is no meaningful difference in the earnings rank gap at the 90th percentile in 1980 between the series for all women vs. the U.S.-born. After this, the two series diverge sharply, with much larger gaps among the U.S.-born, suggesting substantial relative positive selection of Black immigrant women compared to White immigrant women since the 1990s.

5.4 Decomposing Changes in Racial Inequality into Distributional vs. Positional Changes for Black and White Men

The movement in the earnings level and rank gaps is indicative of distributional and positional changes over this historical time period. We now apply the decomposition method introduced in Section 2 to explicitly decompose changes in earnings and employment inequality from 1980 to 2022 into these two components. Because we wish to focus on the employment margin, and the validity of our decompositional approach holds for employment decreases but not increases (see Section 2) as occur for women over this time period, we focus solely on men in this section.

We illustrate three distinct advantages of the decomposition approach, showing how the method (i) provides an exact characterization of the relative roles of distributional and positional change in each decade from 1980 to 2022; (ii) can distinguish, under some circumstances, the relative roles of distributional and positional change for the employment margin as well; and (iii) can easily accommodate conditioning on observable attributes.

Table 3 provides estimates for the decomposition of earnings and employment inequality into distributional and positional convergence (or divergence) for Black and White men from 1980 to 2022. The three panels in the table report results for earnings level gaps estimated at the 90th and 50th percentiles and for the employment gap, respectively. We loosely refer to these three sets of results as characterizing how distributional and

Table 3: Decomposition of Changes in Black-White Earnings/Employment Gaps for Men – Positional vs. Distributional Convergence, Unconditional

	1980-1990	1990-2000	2000-2010	2010-2022	1980-2022
90th Percentile					
Distribution	-0.063	-0.074	-0.048	0.000	-0.199
Position	0.004	0.055	0.016	0.013	0.103
Total	-0.058	-0.019	-0.033	0.013	-0.096
50th Percentile					
Distribution	-0.087	-0.022	-0.293	0.159	-0.215
Position	0.027	0.047	0.128	0.024	0.198
Total	-0.060	0.025	-0.165	0.182	-0.018
Employment (Positive Earnings)					
Distribution	-0.013	-0.017	-0.042	0.024*	-0.048
Position	-0.004	0.004	0.020	0.030*	0.050
Total	-0.018	-0.013	-0.022	0.054	0.002

Notes: The first four columns show decade-by-decade decompositions. The final column reports decompositions calculated for the full 1980-2022 period.
Figures indicated with a "*" cannot be calculated directly due to rising employment rates during this period. Instead they are imputed as the difference between the corresponding figures for the long difference 1980-2022 and the cumulative changes from 1980-2010.
Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

positional forces have affected inequality at the top, middle, and bottom of the earnings distribution.

The first four columns of the table report results for the decomposition calculated decade-by-decade while the fifth column reports results calculated for the entire time period. Notice that, while close, the figure in the final column for distributional and positional change does not simply equal the sum of the four preceding columns. This is because conducting the counterfactual simulations sequentially decade-by-decade implicitly makes a slightly different assumption regarding how position is held fixed, compared to conducting a single calculation for the full time period, 1980-2022.

Another noteworthy feature of the table is that the estimates for the decomposition of the employment gap between 2010 and 2022 cannot be calculated directly. This is because, as we have noted previously, the decomposition of the employment gap into positional and distributional components can only be done for periods of falling employment. In such cases, the counterfactual simulation used to calculate the distributional component can be computed by estimating who among the lowest earners in the economy would be predicted to lose employment should the employment margin shift up in the earnings distribution – i.e., more men become unemployed or are forced out of the labor market. Because employment rates for men fell for each decade between 1980 and 2010 and essentially remained flat for the full 1980-2022 time period, we can decompose

the Black-White gap at the employment margin for these time periods. However, since employment rates increased sharply from 2010-2022, a direct calculation is impossible for this decade. While not perfect, we include an estimate in the table for 2010-2022 based on the difference between the total estimate in column (5) for the entire 1980-2022 time period and the cumulative estimates from 1980-2010 from columns (1)-(3).

Turning to the estimates themselves, as foreshadowed by our discussion of the earnings level gaps above, the first result of note is that the (total) gaps in earnings and employment between Black and White men increased considerably from 1980 to 2010. Cumulatively, Black men fell further behind by about 11 and 20 log points in earnings at the 90th and 50th percentiles, respectively. Similarly, the Black-White employment gap increased by over five percentage points during this time period.

Strikingly, these overall changes from 1980-2010 are more than fully explained by the distributional component of change at each of these three margins. That is, Black men would have been expected to have fallen even further behind their White counterparts due to distributional change over the past several decades if it were not for meaningful gains in position in the economy at each margin. In particular, Black men would have been expected to lose almost 20 and 40 log points at the 90th and 50th percentiles, respectively, if it had not been for their positional gains. Similarly, the impact of distributional changes on the employment gap would have increased it by 7 points, instead of the 5 point increase that was realized.

Positional gains for Black men have continued into the 2010-2022 decade. Strikingly, however, this most recent decade has also been characterized by a reversal of fortune in terms of distributional change, due in part to a recovery from the depths of the Great Recession. From 2010 to 2022, gains due to distributional convergence were responsible for closing the earnings gap at the median from 2010-2022 by 16 log points, helping to return this gap to close to its 1980 level. In fact, the earnings gap at the median has more or less returned to its 1980 level, as shown in the total change estimate in column (5). As the estimates in this column make clear, this negligible change in the earnings gap at the median masks large, equal, and opposite movements in gaps in the middle of the earnings distribution over this time period, stemming from positional versus distributional forces. A similar picture emerges at the employment margin for the entire 1980-2022 time period, with substantial positional gains for Black men counteracted by distributional losses, again leaving the gap at nearly exactly the same level as in 1980. While the negative impact of distributional changes did not reverse for Black men at the 90th percentile in the 2010s, it did finally fall to zero after three decades of sharp declines.

Taken as a whole, a qualitatively similar picture emerges for the underlying forces affecting racial inequality for Black and White men during the past four decades. Overall,

the earnings and employment level gaps remain at or above their levels in 1980. The lack of progress in the closing of these gaps masks significant gains in relative position for Black men at the top, middle, and bottom of the earnings distribution. Despite these gains in position, Black men have been disproportionately negatively affected by the generic changes to the economy over this period, which have systematically benefited workers at the very top of the earnings distribution, where White men are substantially overrepresented versus those in the bottom, middle, and even upper-middle parts of the distribution.

The results presented here for the 1980-2022 period contrast with sharp reductions in the earnings gaps at both the median and the 90th percentile in the decades prior to 1980. Bayer and Charles (2018) reports results of an analogous decomposition for the 1940-70 period, showing that distributional focuses were overwhelmingly responsible for the closing of the Black-White earnings gap at the median from 1940-70, while both distributional and positional gains played significant roles in the closing of the earnings gap at the 90th percentile.

6 Labor Market Gaps Among Other Racial and Ethnic Groups Since 1980

The bulk of this chapter focuses on Black-White inequalities in the U.S. The reason for this is twofold. First, Black-White inequalities are among the largest of the disparities across major racial groups in the United States. Second, because of the above and because of data constraints in identifying individuals from other racial and ethnic groups, much of the literature on racial inequality focuses on Black-White differences. In this subsection, we present the evolution of earnings rank gaps for other racial minorities vis-à-vis White Americans, focusing on the period from 1980-2022.[28]

6.1 Hispanic-White Earnings Rank Gaps for Men and Women

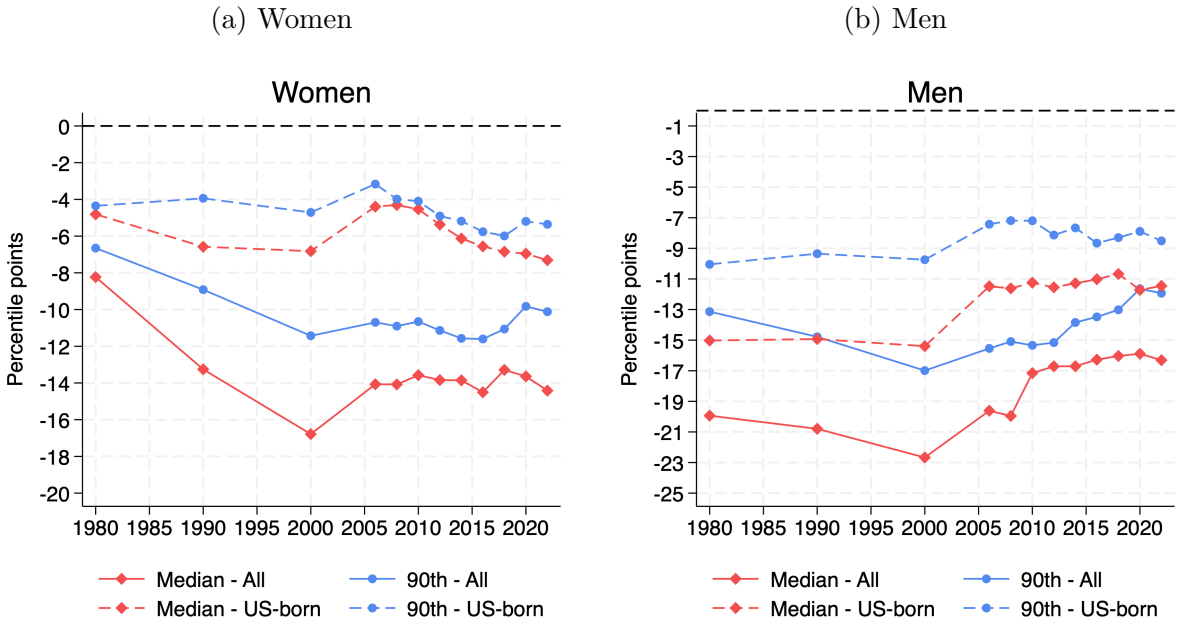
Antman et al. (2023) discuss the evolution of Hispanic Americans' status in the labor market and discuss issues with measuring Hispanic identity in historical censuses and of ongoing difficulties following outcomes of third or later generations of Hispanic immigrants. Census questions soliciting self-identification as being of Hispanic origin were introduced only in 1970. By contrast, questions eliciting race that enable identification of Black Americans date back to the earliest censuses. Further complications arise in following second or third generation Hispanic Americans as the census ceased asking about

[28] Appendix C reports Hispanic-White and Asian-White earnings level gaps by gender and U.S.-nativity for 1980-2022.

parent place of birth in 1980 and in modern nationally representative survey data sources like the Current Population Survey, third-plus generation Hispanic Americans are only identifiable through self-identification (information on grandparent place of birth is not available).

Figure 12 shows Hispanic-White earnings rank gaps for women in panel (a) and men in panel (b). In each panel, gaps are shown for the 50th and 90th percentiles and separately for the full population and restricted to the U.S.-born population. An obvious feature of the data for both men and women is that the gaps are considerably smaller when the sample is limited to those born in the United States, reflecting the relatively low earnings levels of first-generation Hispanic immigrants during this time period.

Figure 12: Hispanic-White Earnings Rank Gaps, Women and Men, U.S.-Born and All, 1980-2022



Notes: This figure plots the rank gap difference between the earnings of Hispanic and White workers, conditional on the birthplace of the worker. Panel a presents the results for women, and Panel b presents the results for men. On the y-axis is the difference in percentile points between the rank of the median (90th percentile) Hispanic worker on the full population income distribution and the rank of the median (90th percentile) Non-Hispanic White worker on the full population income distribution. Additionally, the solid lines present the two gap measures for all working adults in the sample, and the dashed lines present the two gap measures among those who are born in the U.S. The sample is restricted to adults between the ages of 25 to 54 at the time of each census or survey.
Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

Examining the rank gaps for women, a second striking feature of the results shown

in panel (a) is how similar the Hispanic-White gaps for U.S.-born women are to the Black-White gaps reported in Figure 10 in the later period of the data. In particular, in both cases, a slow increase in the gaps (again most likely due to changes in differential selection into the labor market), to about 6 percentile points at both the median and the 90th percentile, can be seen. By contrast, the Hispanic-White rank gaps for U.S.-born men are larger – about 9 percentile points at the 90th and 12 percentile points at the median in 2022 – than those for women. These rank gaps for men have been quite stable since 2006 and are about 60 percent as large as the comparable Black-White rank gaps in the 2010-22 period.

6.2 Asian-White Earnings Rank Gaps for Women and Men

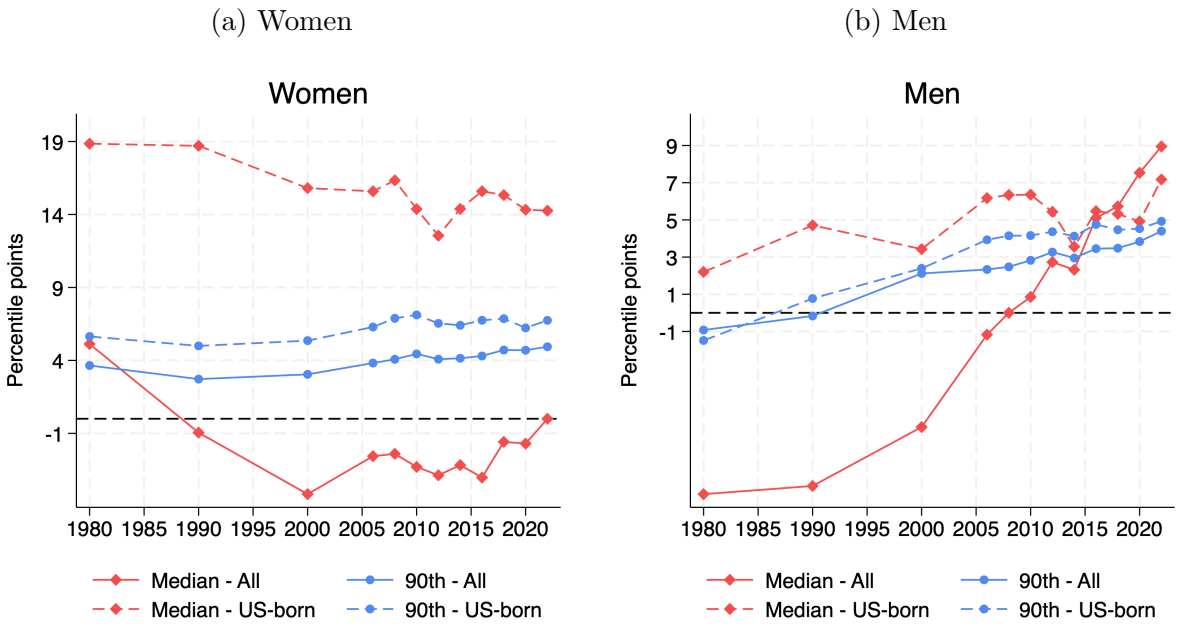
Figure 13 shows comparable Asian-White earnings rank gaps for women and men. In each panel, gaps are again reported for the full population and the U.S.-born population. Like the Hispanic-White rank gaps shown in Figure 12, the Asian-White gaps are generally smaller when the sample is limited to U.S.-born women and men. It is interesting to note, though, that these differences have been quite small and consistent throughout the entire time period when measured at the 90th percentile (for both women and men), while much larger differences emerge for women throughout the entire time period and for men in the earlier years. By the 2010s, the median gaps for men are extremely similar whether measured in the entire population or for the U.S.-born population.

Focusing on the rank gaps for U.S.-born women, it is helpful to recall from Figure 8b that Asian-White employment gaps have generally been stable and small in the 2010-22 period. In particular, Asian and White college-educated women work at almost identical rates, while Asian women with less than a college degree are about 5-6 percentage points more likely to work. During this same time period, Asian-White earnings rank gaps for U.S.-born women have been large and stable. At the median, the gap is steady at about 16 percentile points through the 2010-22 period At the 90th percentile, the gap has also been quite stable at about 6 percentile points.

For U.S.-born men, Asian employment is generally a few points lower than that of White men for both those with and without a college degree throughout the entire time period. Interestingly, despite the inclusion of these additional zero-earners among Asian men at each education level, the rank gaps favor Asian men over White men by about 4-6 percentile points at both the median and the 90th percentile.

A final striking feature of Figure 13 is that the Asian-White rank gaps for both men and women at the 90th percentile have been increasing over the time period, whether measured for the U.S.-born or full populations. For both men and women these gaps are approximately 4-6 percentile points, implying that the 90th percentile Asian woman and

Figure 13: Asian-White Earnings Rank Gaps, Women and Men, U.S.-Born and All, 1980-2022



Notes: This figure plots the rank gap difference between the earnings of Asian and White workers, conditional on the birthplace of the worker. Panel a presents the results for women, and Panel b presents the results for men. On the y-axis is the difference in percentile points between the rank of the median (90th percentile) Asian worker on the full population income distribution and the rank of the median (90th percentile) Non-Hispanic White worker on the full population income distribution. Additionally, the solid lines present the two gap measures for all working adults in the sample, and the dashed lines present the two gap measures among those who are born in the U.S. The sample is restricted to adults between the ages of 25 to 54 at the time of each census or survey.
Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

man has earnings at about the same level as the 95th percentile White woman and man, respectively, in the modern U.S. economy

6.3 Race outside the U.S.

Racial gaps are also sizable in other countries around the world, particularly in countries with a colonial past, a history of slavery, or even much more recent patterns of migration. Documenting these inequalities hinges on the availability of data on race and ethnicity across these different contexts. In France, for example, the collection of data on race or ethnicity is prohibited by law, severely limiting researchers' ability to measure racial and ethnic gaps. Recent work uses survey data on parent and grandparent country of origin to circumvent these limitations and to document large labor market penalties faced by

key minority groups relative to their White French counterparts (Govind and Santini, 2024).[29] Mirza and Warwick (2024) provides a comprehensive overview of race- and ethnicity-based inequality in the U.K., where data on self-reported race and ethnicity have only been available since the 1990s. Several Latin American countries have a longer tradition of collecting data on race and ethnicity (Loveman, 2014), and recent work has probed inequality in labor market outcomes by skin tone as well as differing regimes of racial inequality across the region (Woo-Mora, 2024; Ayala-McCormick, 2021).[30]

6.3.1 Racial earnings gaps in Brazil

Brazil, in particular, stands out as a context for studying racial gaps due to its history and the rich availability of data on racial background across a wide variety of survey-based and administrative datasets. The country shares with the United States and Caribbean a history of chattel slavery, and it was the single largest destination of enslaved Africans during the Atlantic slave trade. Slavery was not abolished in Brazil until 1898, decades after the U.K., France, and the U.S. About 55% of the Brazilian population is non-White, with approximately 10% of the population identifying as Preto or Black and another 45% identifying as Pardo or of mixed origin. White Brazilians make up about 43% of the population and other racial groups, including the Indigenous population, make up the remaining less than 2%.

Racial gaps are well documented in Brazil. Derenoncourt et al. (2024) show the mean racial earnings gap among workers was 40% in 1980 and fell to 28% in 2009 where it has roughly remained since.[31] The authors then compute racial earnings level gaps among full-time formal sector workers aged 25-54, showing that policies such as large increases in the minimum wage in the 2000s eliminated the racial earnings level gap at the bottom of the distribution (the 10th percentile of workers).

Figure 14, taken from Derenoncourt et al. (2024), follows earnings level and rank gaps at the median and the 90th percentile between non-White and White working age

[29] Most prior work on the French context has had to rely on audit studies or quasi-experimental studies combined with researcher-run surveys to assess the degree of racial gaps and extent of discrimination in the French labor market. See, for example, Glover et al. (2017), Valfort (2020), and Duguet et al. (2010). A limited number of studies, focusing on hiring and employment, have used surveys to measure penalties for minorities or combined survey evidence with correspondence studies (Meurs et al., 2006; Adida et al., 2010).

[30] The literature on labor market gaps by immigration status in many countries is closely related to the study of racial and ethnic gaps (see, e.g., Algan et al. (2010)). Audit studies of Canada's labor market, for example, reveal major gaps by ethnicity, using names as a proxy for country or region of origin (Oreopoulos, 2011).

[31] Gerard et al. (2021) study the contribution of firms to pay differences between non-White and White workers in Brazil. They find that sorting of non-White workers into firms with low pay premia can explain half of the racial gaps between non-White and White workers in Southeast Brazil, with an additional portion of the gap driven by sorting into low-premium establishments conditional on skill level and a lower pay premium within the firm.

Brazilians over a 17-year period, from 1999-2015. This comprehensive picture of inequality includes workers across all sectors – including formal employees, informal employees, and the self-employed – as well as the non-working population.

Among working age adults (ages 25-54), the earnings level gap at the median was 57 log points in 1999 while the gap at the 90th percentile was 77 log points. By 2009, the gap at the median fell to 25 log points while the gap at the 90th percentile fell to 61 log points. Earnings level gaps at the median climbed slightly by 2015, rising to 33 log points, while the gap at the 90th percentile continued to decline, to 55 log points. Rank gaps showed much less movement over this period for both the median and the 90th percentile. The rank gap for the median in 1999 was 10 percentile points and rose to 13 percentile points by 2015. The rank gap at the 90th percentile was 13 percentile points in 1999 and 2015. The stability of positional gaps points to the role of distributional forces in racial earnings inequality in Brazil over these years.

Consistent with this interpretation, Figure 15, also reproduced from Derenoncourt et al. (2024), shows declines in racial earnings level gaps in Brazil at different percentiles over time, normalized to their 1999 levels (the mean earnings gap is also depicted). Relative to Figure 14, the sample is restricted to individuals employed full-time in the formal sector. Above the 15th percentile, racial earnings levels gap evolve in a similar fashion to the mean earnings gap. However the racial earnings level gap at the 15th percentile falls dramatically after the minimum wage begins to increase and the gap at the 10th percentile falls to zero. These patterns once again highlight the strong impact of minimum wages on racial gaps at the bottom of the distribution.

Comparing these patterns to those of the U.S. highlights the value of a framework that encompasses both positional and distributional forces shaping racial inequality. In the U.S., earnings level gaps are larger at the median than at the 90th percentile. Convergence at the median was most rapid during the middle of the 20th century, coinciding with periods of reduction in overall inequality. The steady erosion of labor market institutions like unions and the federal minimum wage over the last 50 years overlaps with stagnation in median earnings convergence while gaps at the 90th percentile continued to close. In Brazil, the reverse has been the case. Gaps at the top of the distribution are larger than gaps at the median, and active national minimum wage policy spurred distributional convergence, which drove median earnings gaps down even further.

A promising area for future research is the documentation of earnings level and rank gaps by racial and ethnic identity across a much wider range of countries, wherever the data are available. In Canada and the U.K., the data needed to document these gaps and to assess the extent to which distributional versus positional forces have shaped racial and ethnic inequality are available. Even in France, new advances in identifying family histories of migration that line up with organic racial and ethnic classifications in

society now allow for the measurement of level and rank gaps in recent years (Govind and Santini, 2024; Derenoncourt et al., 2025). Another frontier is the study of labor market gaps by racial and ethnic classification, or by skin tone, in Africa and Asia, where multi-racial and multi-ethnic societies abound. The methodologies described in this chapter can also be applied to other persistent socioeconomic divisions, such as caste-based or religion-based inequalities in South Asia and beyond.

Figure 14: Cumulative Distribution Functions and Racial Earnings Level and Rank Gaps at 50th and 90th Percentiles

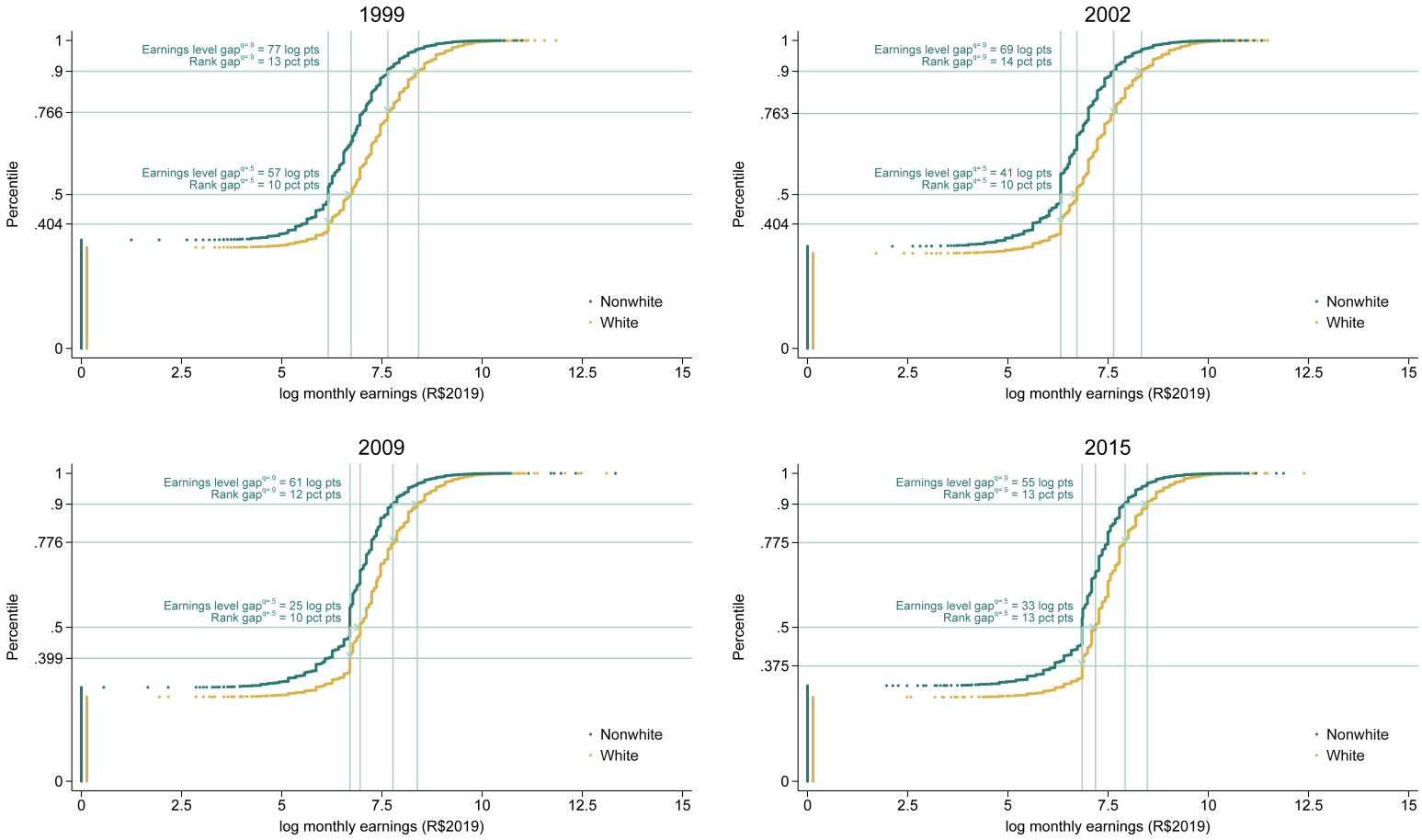


Figure originally from Derenoncourt et al. (2024).

Notes: This figure depicts the racial earnings level and rank gaps between Nonwhite and White workers in Brazil in terms of each racial group's cumulative distribution functions (CDF). The x-axis measures the log monthly earnings of workers in each racial group. The earnings level gap is measured in the horizontal distance between the two CDFs at the same income percentile. The percentile rank gap is the vertical distance between the two CDFs at the same log income level. The sample is restricted to adults between the ages of 25 to 54 at the time of each census or survey.

Figure originally from Derenoncourt et al. (2024).

Data sources: PNAD 1999-2015.

Sample: Adults 25-54, White or nonWhite.

Figure 15: Evolution of the racial earnings level gaps at different percentiles

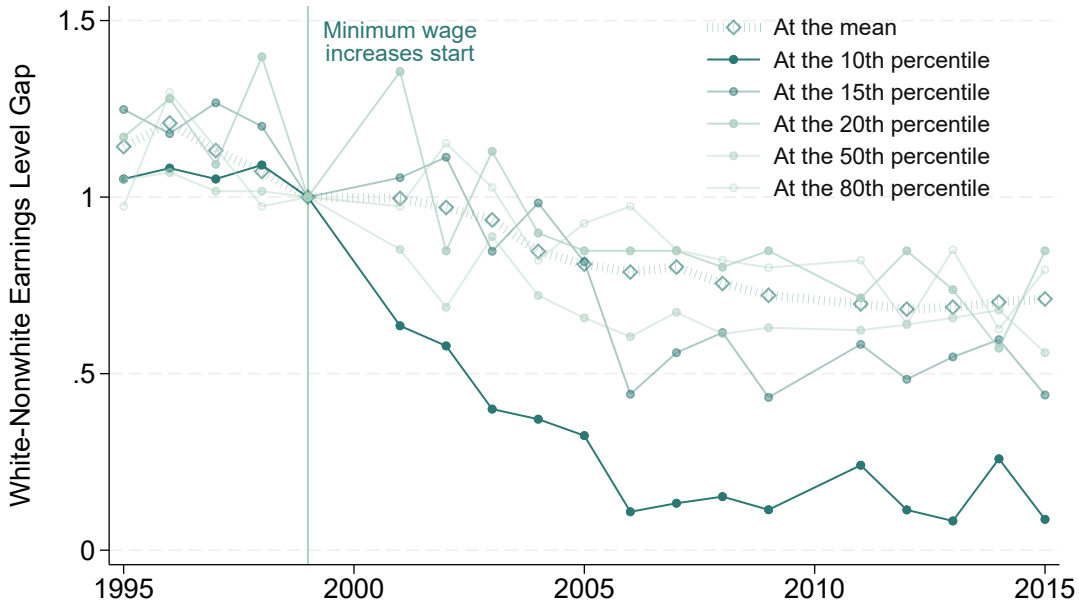


Figure originally from Derenoncourt et al. (2024).

Notes: This figure depicts the evolving in earnings level gap between White and Nonwhite workers in Brazil from 1995 to 2019. The y-axis in terms of difference in log earnings between White and Nonwhite workers. Each point in the figure represents the earnings level difference between White earnings level and Nonwhite earnings level within the same percentile of the two respective income distributions. The vertical line marks the increase in the minimum wage in 1999. The sample includes adults 25-54; White or non-White; formal, private sector full-time (i.e., 40 hours a week or more) employees; and with no missing monthly earnings variable. Median monthly earnings in R$2019, deflated using the INPC series.

Data sources: PNAD 1995-2015.

7 Prejudice-Based Discrimination in the Modern Era

We have discussed above how the policies enacted during the civil rights era in the 1960s and 1970s improved relative Black labor market outcomes up through 1980. These policies created a set of institutions and penalties intended to identify, punish, and ultimately eradicate race-based discrimination from the market. Yet, whether discrimination arising from racial prejudice continues to strongly affect the equilibrium labor market outcomes of Black Americans or other racial minorities in the post-civil rights era remains an open and intensely debated question among labor economists and others. In this section, we engage with the question of discrimination in the modern era – the years after 1980.

7.1 Evidence on Race-Specific Penalties from Conditional Gaps

Racial discrimination is an example of an adverse, race-specific factor that lowers the labor market returns of Black workers relative to those of otherwise similar White workers.[32] How might one assess the role played by race-specific factors, such as discrimination, in the evolution of earnings gaps using our framework?

Notice that if a person's race did *not* play a role in earnings determination, Black and White individuals would be distributed exactly identically in the national earnings distribution. In other words, if the cumulative effect of all race-specific determinants of earnings were zero, then the hypothetical exercise of moving a Black person at a given quantile in the Black earnings distribution to the White earnings distribution would not change the person's quantile position. No cumulative effect of race-specific considerations at a given quantile would imply a rank gap of zero at that quantile. The rank gap, therefore, serves as a natural proxy for the importance of race-specific factors at a given quantile: the larger the rank gap, the more significant race-specific considerations are in determining earnings.

The total earnings disparity – the level gap – that Black workers experience relative to White workers at a given quantile reflects the effect of race-specific penalties as measured by rank gaps and how the overall shape of the earning distribution affects earnings differences between adjacent rank positions. As we will see below, how the two measures evolve can provide information on the importance of race-neutral distributional factors, such as changes in overall earnings inequality.

Table 4 presents estimates of unconditional and conditional rank and level gaps between Black and White men and women at different quantile points for different years over the past several decades. The conditional estimates, which are for men and women with and without college degrees, are derived using the approach described in Appendix Sec-

[32] We focus on Black/White comparisons in this section.

tion A. The table shows results for men and women at twenty-year intervals up through 2022. Given the large increases in labor force participation for women over this period, particularly among White women with possibly high earnings potential, we focus in this analysis on full-time working women, where the dynamics of labor market discrimination are easier to discern.

Although we are interested in this section in possible discrimination during the modern, post-civil-rights era, from 1980 to the present, the table shows results for 1960 as well, to highlight the impact of civil rights policies and legislation on racial earning differences. Conditional rank gaps are the main focus of this table and are presented in the upper panels for non-college and college-educated men and women, panels (a) and (c), respectively. For reference, we also present the conditional level gaps in the same year in the bottom panels for each group, panels (b) and (d).

Focusing first on the results for men, the results in the upper panel of the table show that among men without a college degree, rank gaps in 1960 were massive at every quantile, implying considerable race-specific disadvantage for these men whether they were low, medium, and high earners in their group. For example, the median non-college Black man's earnings would have placed him at roughly the 21st percentile of the earnings of White men with the same education, and Black men without college degrees at the 75th, 90th, and 99th percentiles had rank gaps of 37.2, 35.2, and 16.8 percentile points, respectively. Notice that, in general, conditional rank gaps among less educated men in the pre-civil-rights era exhibited no particular pattern across quantiles. The rank gap was smaller at the median than at the 75th, 90th, and 95th percentiles, while the gap at the 99th percentile was appreciably smaller than at any other quantile.

The analogous results for non-college educated working women show that rank and earnings gaps in 1960 were also large. At the median and 75th percentile, they were comparable to the gaps among men, with rank gaps of around 34.5 and 36.5 percentile points. At higher quantiles they were smaller than the gaps among men, with gaps of 23.1, 14.9, and 5.9 at the 90th, 95th, and 99th percentiles.

The results for men and women with a college degree are shown in the second half of the table. Conditional rank gaps in 1960 at the median and 75th percentile for highly educated men were large, at 35.1 and 27.5 percentile points, respectively. In general, rank gaps among highly educated persons were strictly smaller at every higher quantile in 1960: college-educated Black men at the 95th percentile had only a 6.7 percentile point gap compared to their White counterparts, while men at the 99th percentile had a rank gap of only a single percentile point. These small rank gaps near the top of the distribution still often translate into significant level differences (as can be seen in the bottom panel, especially in 2022) because of the skewness of the earnings distribution – i.e., the difference between the 98th and 99th percentiles, for example, is much larger

than the difference between the 50th and 51st percentiles.

Rank gaps for college-educated working women were far smaller across the board in the 1960s. At the median, the gap was only 9.8 percentile points, 4.6 at the 75th, 1.8 at the 90th, 1.3 at the 95th, and just 0.5 rank points at the 99th percentile.

It is worth emphasizing that the conditional gaps in this table are for men and women of the same amount of completed schooling, so racial differences in educational attainment do not account for the gaps. Undoubtedly, however, there were likely racial differences in *other* dimensions of education, such as poorer quality instruction received by Black students, which would have exerted a race-specific adverse effect on Black workers' outcomes and thus contributed to 1960 rank gaps. Of course, perhaps the most potent example of an adverse race-specific factor during those years was the overt and widespread racial discrimination that then prevailed in the country.

Evidence that the 1960 rank gaps reflected, to a significant degree, the impact of discrimination is provided by how the gaps changed after the implementation of anti-discrimination policies. The table shows that between 1960 and the start of the modern era in 1980, conditional rank gaps faced by Black men and women fell sharply across education levels and at every percentile.

The reductions were particularly large above the median among less educated men. For example, the rank gap at the 90th percentile of non-college-educated men over 1960-1980 fell from 35.2 to 17.3 percentile points – a massive reduction. Equally significant was the change in the rank gap at the 95th percentile from 29.3 to 12.6 percentile points. The improvement at the median of roughly 8 percentile points among non-college educated men was substantial, if not as large as changes higher up in the distribution. For non-college working women, the reduction in rank gaps by 1980 was even more striking, with gaps almost fully closing within every quantile above the 50th and falling to just 2.1 percentile points at the median.

Among the highly educated, reductions in rank gaps throughout the distribution were also very large from 1960-1980, for both men and women. For example, rank gaps fell from 35.1 to 15.4 at the median. And at the 95th, already relatively small at 6.7 percentile points, the rank gap fell to only 4.1 after the passage of civil rights legislation. Among college-educated full-time working women, gaps completely vanished or even slightly reversed with a slight advantage in earnings for full-time working Black women relative to their White counterparts at the 50th, 75th, and 90th percentiles of their respective distributions. It is worth emphasizing here that given differences in labor force participation and employment rates by racial group, White college-educated working women in 1980 may have ranked among the highest potential earners out of all college-educated women. Rises in labor force participation among lower potential earners could account for some of the decline in the gaps among women, in addition to

anti-discrimination legislation.

For men, for whom we include non-workers as well, this selection margin is less relevant. Among this group, a complete closing of rank gaps does not occur by 1980, except among the very highest earners. Indeed, for many Black men, especially those with less than a college degree and those not at the top of the earnings distribution in either education group, conditional rank gaps remained very large in 1980, even after the reduction of the previous twenty years. This persistence in rank gaps implies that race-specific factors collectively still played an important role in driving the relative outcomes of Black men at the start of the modern era, albeit a smaller one than was the case in the pre-civil-rights era.

How have conditional rank gaps – and the cumulative adverse influence of race-specific factors they capture – evolved over the past 40 years? One of the most striking results shown in Table 4 is that conditional rank gaps among men have remained remarkably flat between 1980 and 2022 for many quantile positions and across levels of education. So, for example, among college-educated men, over the entirety of the modern period, the rank gap at the median has remained roughly constant at 15 percentile points; at roughly 11 for the 75th percentile; at about 6 at the 90th percentile; and at only 1 at the 99th.

Among non-college-educated men, rank gaps have also moved very little since 1980, except for an improvement at the median after 2000 to only 13.7 in 2022. We suspect that these post-2020 rank gains at the 50th percentile were partly due to the employment surge and increase in earnings after the Covid pandemic, which has been especially good for workers in the left tail of the distribution (Autor et al., 2023). Labor market outcomes for these men since 2010 would have also been helped by a national moderation of incarceration rates, which were at their highest levels in 2000 and have since declined by several percentage points. These two factors would have positively affected Black men in the lower tails of the non-college earnings distribution, shrinking the rank gap at these quantiles.

Among both non-college and college-educated working women, rank gaps have increased for every quantile since 1980. For non-college educated women at the median, rank gaps have increased from 2.1 percentile points in 1980 to 4.3 by 2022. Among certain of the higher quantiles, the 75th, for example, the increase has been even more pronounced, from 0.3 to 7 percentile points. Among college-educated working women, the complete erasure of rank gaps by 1980 was reversed in the subsequent decades. The rank gap at the median increased to 6.6 by 2022 and rose for all higher quantiles as well. By 2022, labor force participation gaps between White and Black women had narrowed significantly, reducing the role of selection into labor force participation in driving changes in rank gaps among women. Thus, the role of race-specific factors in the labor

market have likely become more prominent in earnings rank gap measures among women in recent years.

Overall, the conditional rank gap results suggest that the importance of race-specific factors has budged little over the past 40 years – or in the case of women, has grown – irrespective of men and women's education or quantile position. The impact of these factors is especially pronounced among the less educated and in the middle part of the earnings distribution. Among men without a college degree, rank gaps today and for at least the last 20 years are in the low teens at every quantile up to the 90th. For men with a college degree, only at and below the 75th are rank gaps today higher than 10 percentile points, again, as has been the case for at least 20 years. Where gaps have stagnated among men, they have increased for women, and these increases have been present almost irrespective of education level or quantile.

The table also presents estimates for the conditional earnings *level* gaps. For men, as with the conditional rank gaps, these level gaps declined substantially between 1960 and 1980 but did not disappear, even among men at very high quantiles. So, for example, at the 99th percentile, Black men without a college degree saw their level earnings gap vis-à-vis similarly educated White men go from 0.74 log points in 1960 to a still substantial 0.44 log points in 1980. For non-college-educated working women, by contrast, level gaps disappeared by 1980.

Conditional level gaps for both men and women have increased after 1980, mainly at higher percentiles among the highly educated. For men, this increase in conditional level differences has occurred even as men's rank gaps were relatively unchanged over the same period. This pattern demonstrates the effect of increasing overall earnings skewness in the higher parts of the earnings distribution. The widening of the overall distribution effectively increased the dollar earnings cost between adjacent rank positions, especially at the very top. This effect is most dramatically seen for men with college degrees at the 99th percentile. For these men, a roughly 1-point rank gap penalty was associated with a 0.14 log point level difference in 1980; in 2022, although the rank gap had not changed, their earnings differential had grown dramatically to 0.35 log points.

For working women, both rank and level gaps have increased since 1980 and both positional and distributional factors likely play a role given coincident rising overall earnings inequality and higher labor force participation among both college-educated and non-college-educated white women. Teasing out which factors have been more significant for labor market gaps among women is a fruitful area for future research.

The results in this section show that the cumulative impact of adverse race-specific factors, of which prejudice-based discrimination was undoubtedly one among others, are much lower today than their historically high levels before the civil rights era. Nevertheless, these factors remain substantial. They continue to affect men in the middle of

earnings distribution; for women, rank gaps have increased across the board, for eery education group and quantile. The only group for which they have all but disappeared is among the very highest-earning men. Is discrimination – though almost certainly smaller than it was historically before policies made it illegal and, at minimum, costly to engage in – still an important portion of the race-specific adverse factors that continue to affect Black men and women's earnings? We next examine some results that address this question.

Table 4: Conditional Rank and Level Gaps for Men and Working Women, 1960-2022

	Men				Women			
	1960	1980	2000	2022	1960	1980	2000	2022
	Non-College							
Panel A								
Conditional Rank Gaps								
50th	28.9	21.0	18.5	13.7	34.5	2.1	3.3	4.3
75th	37.2	22.6	18.9	15.8	36.5	0.3	2.6	7.0
90th	35.2	17.3	14.5	13.5	23.1	0.2	2.5	5.8
95th	29.3	12.6	10.7	10.6	14.9	0.2	1.8	3.9
99th	16.8	6.4	4.7	5.6	5.9	0.3	0.3	1.2
Panel B								
Conditional Level Gaps								
50th	0.67	0.49	0.51	0.47	0.65	0.03	0.05	0.09
75th	0.48	0.33	0.33	0.34	0.46	0.00	0.04	0.11
90th	0.49	0.27	0.30	0.30	0.28	0.00	0.06	0.11
95th	0.52	0.29	0.30	0.31	0.23	0.00	0.05	0.10
99th	0.74	0.44	0.40	0.42	0.27	0.04	0.03	0.08
	College							
Panel C								
Conditional Rank Gaps								
50th	35.1	15.4	15.9	15.4	9.8	-3.2	0.5	6.6
75th	27.5	11.6	10.0	11.1	4.6	-1.0	1.6	4.2
90th	12.9	6.4	6.0	6.5	1.8	-0.1	1.7	2.6
95th	6.7	4.2	3.7	4.4	1.3	0.0	1.3	1.8
99th	1.2	1.0	1.0	1.2	0.5	0.2	0.5	0.7
Panel D								
Conditional Level Gaps								
50th	0.50	0.25	0.29	0.32	0.13	-0.05	0.01	0.11
75th	0.53	0.26	0.30	0.32	0.12	-0.02	0.04	0.10
90th	0.53	0.27	0.41	0.40	0.12	-0.01	0.11	0.15
95th	0.56	0.31	0.55	0.51	0.14	0.00	0.15	0.18
99th	0.45	0.14	0.09	0.35	0.25	0.08	0.36	0.40

Notes: This table reports conditional and unconditional White-Black rank and level gaps over time for men and full-time working women at the 50th, 75th, 90th, 95th, and 99th percentiles of their respective distributions. "Conditional" rank and level gaps are calculated only on the sample of college educated individuals. The sample is restricted to men (working and non-working) and full-time working women between the ages of 25 to 54 at the time of each census or survey.
Data sources: Decennial Census 1960, 1980, 2000; American Community Survey 2022.

7.2 Do Race-Specific Gaps Represent Discrimination?

7.2.1 Arguments Against the Continuing Importance of Prejudice-Based Discrimination

Do today's conditional rank gaps stem from prejudice-based discrimination? One reason to doubt prejudice as a mechanism is the sustained decline in reported racial prejudice over the past several decades. The General Social Survey (GSS) has for decades asked a representative sample of Americans their feelings about racially sensitive matters, such as whether they would live next to a Black neighbor or if they would object to a family member marrying interracially. The data from these surveys show that racially prejudiced sentiments have plummeted since 1980. By 2022, only a small fraction of survey respondents admit to holding various racist beliefs, unlike the large majority that did so merely 40 years ago, and many White respondents report no racially biased views at all. The reduction in average prejudice among White Americans implied by these patterns suggests that racial discrimination stemming from prejudice should also be falling.

The standard Becker (1957) framework, which, along with extensions from Arrow (1973b), introduced and remains the main model of prejudice-based discrimination, suggests an even stronger implication that one can draw from the marked decline in prejudice. An essential feature of the Becker model is that, under standard perfect competition assumptions of free mobility and perfect information, Black workers will not work at firms drawn at random in the market, with their outcomes determined by the *mean* amount of prejudice among all employers.[33] Instead, economic forces should tend to push Black workers and the most prejudiced employers away from each other. Black workers should not want to work for firms that discriminate against them, especially ones that would do so most harshly, and because their prejudice causes racist firms to dislike interacting economically with Black workers, those prejudiced employers should be reluctant to do so, unless they receive some compensating payoff.[34]

The logic of the Becker model suggests that as the share of employers who are non-racist grows, it should be increasingly easier for Black workers to sort to these firms, making it increasingly unlikely that prejudice-based discrimination should have an equilibrium effect.

A final reason to doubt the possibility that discrimination drives changes in estimated

[33]Instead, these equilibrium Black outcomes should be driven by the prejudice of the marginal employer – the least prejudiced employer with whom Black workers have to interact after equilibrium sorting (see Charles and Guryan (2008) for analysis of how racial wage gaps are driven by the behavior of this marginal employer.)

[34]In prejudice-based models of wage discrimination, because a racist firm incurs disutility when employing a Black person, the firm is willing to hire a Black person instead of an otherwise identical White worker only if the Black worker is paid a lower wage (that is, is discriminated against) to make up for the psychic injury they incur from cross-racial interaction. See Becker (1957).

level differences is that conditioning on schooling (the most commonly used measure of skill) lowers measured differences, raising the possibility that conditioning for a richer set of skill controls might close these gaps further. These, and similar arguments have undoubtedly inspired the work of scholars such as Fryer Jr (2011), Loury (1998), and Neal and Johnson (1996), who have argued against the notion that prejudice-based discrimination plays an important role today.

7.2.2 Evidence for Discrimination in Modern Economy

One type of evidence that supports the notion that racial prejudice and discrimination still influence Black workers' relative earnings is the nature of reports from Black respondents about their experiences with racial mistreatment and racial prejudice. Particularly striking is a series of surveys conducted by the Pew Foundation. In these, one-half of Black Americans report having personally experienced racial discrimination. Roughly 80% of Black respondents believe that the tendency to not see or acknowledge racial discrimination is a vastly bigger problem in the country than believing discrimination exists when it does not. Large numbers of Black respondents report that the country's institutions are explicitly designed to hold them back because of racial prejudice on the part of White Americans. On all these issues, the view of Black respondents diverged sharply from those of other racial groups.[35]

The strength of these sentiments and how broadly they are shared among Black respondents should make one cautious about dismissing these views that emerge from people's experiences. Even if Black respondents' views are wrong, the intensity with which they are held may itself be a driver of unequal racial outcomes if they impact career or skill choices.[36]

A second reason to believe that discrimination may be a key driver of remaining gaps is growing evidence for a key precondition of discrimination in equilibrium: the presence of firms in the market that racially discriminate, or would if given the chance.

As we have described, given the reasoning from the Becker model regarding equilibrium sorting, the presence of prejudiced firms need not lead to an equilibrium effect of discrimination, but there can clearly be no equilibrium effect of discrimination if there are no prejudiced firms in the market. Are there such firms that would engage this behavior today, even in the face of penalties and sanctions they would face if caught?

Correspondence audit studies provide the best evidence on this question among approaches used by labor economists. Recall that these studies send firms resumes of job-seekers that differ only in whether the name on the file is "distinctively Black," and

[35]See Pew Research Center (2023b) and Pew Research Center (2023a).

[36]See Alesina et al. (2021) for analysis on how beliefs about racial inequalities and their causes can shape differential support for social policies among Black and White Americans.

measure the difference, by race, in the "call-backs" these resumes receive. This differential at any sampled firm is powerful evidence that it discriminates by race.[37] Building upon the insights discussed above from Becker, Heckman (1998) has argued forcefully that neither in-person nor correspondence audits reveal the level of equilibrium (or "market-level") racial discrimination. However, Heckman acknowledges that audits can reveal discrimination *at the sampled firms*, thereby speaking directly to whether, in the post-civil-rights era, there remain firms in the market that racially discriminate.

Since the seminal work by Bertrand and Mullainathan (2004), there has been a proliferation of correspondence audit studies that provide convincing, experimental evidence of cases of racially discriminatory firms in the market. This literature, which Bertrand and Duflo (2017) review, finds evidence of firms discriminating against racial minorities in many contexts. In an important paper, Kline et al. (2022) extend this literature by scaling up the intervention, allowing for the characterization of individual employers by their degree of discrimination towards women and racial minorities. They document a high degree of concentration of discrimination across firms, with a small set of firms responsible for most discrimination. Their subsequent work further validates this finding and refines their methods, developing efficient ways to estimate discrimination with the intent to build efficient and transparent tools for regulators (Kline et al., 2024; Avivi et al., 2021; Kline and Walters, 2021). Alternative approaches in this literature include incentivized resume ratings (Kessler et al., 2019) as well as quasi-experimental evidence (Linos et al., 2024). Further work interrogates the measurement and conceptualization of discrimination. For example, Bohren et al. (2024) offer a formalization of systemic discrimination that accounts for differences in reference qualifications due to upstream factors and anticipated discrimination. Finally, other work exploits natural experiments in the field or within firms and documents manager bias and its impact on the performance of minority workers (Glover et al., 2017; Linos et al., 2024).

Overall, this active body of work using correspondence studies and quasi-experimental evidence demonstrates the continuing presence of racially discriminating firms in the market – the main requirement for the equilibrium positional gaps documented in Table 4 to be importantly determined by discrimination. Additionally, the firms that the literature has identified to be engaging in racially discriminatory behavior are the types of employers who would employ Black workers close to the middle of the distribution – precisely the group for which we estimate the largest positional rank gaps.

[37] Some scholars have expressed doubt that the approach employed by these studies truly manipulates only race, arguing that some racially distinctive names may not only change a reviewer's belief about the race of the candidate associated with a given file but might also change the reviewer's belief about some *other* productivity-relevant trait of the candidate. See Fryer Jr and Levitt (2004) for an analysis of this issue.

7.2.3 Reconciling Two Sets of Arguments

Reports based on lived experience and results from correspondence audit studies lend powerful support to the idea that prejudice-based discrimination accounts for an important piece of equilibrium positional gaps today, especially around the middle of the earnings distribution. Nevertheless, reductions in reported prejudice from surveys would, at first blush, seem to undercut such a discrimination argument. We contend that despite the dramatic (and laudable) secular decline in prejudicial sentiments, there are many reasons why prejudice-based discrimination may still exist in equilibrium.

One possibility is that the decline in reported prejudice does not reflect how *actual* prejudicial sentiment has evolved. Just as shifting cultural and social mores have rendered it inconceivable that the average White American could tell the off-color, racially demeaning joke in mixed company that might have been told a generation ago, could the same societal changes prevent such a person from revealing any underlying racist sentiment to a survey enumerator? A divergence between prejudice admitted on a survey versus privately held sentiments need not arise from a conscious desire to mislead. People may have racially biased views of which they are not consciously aware – what some psychologists and economists call "implicit" racial bias (see Bertrand et al. (2005); Ziegert and Hanges (2005)).

Biases of which people are unaware, or that they shield because certain views have become socially indecorous, have implications for the questions that labor economists interested in prejudice seek to address in the future. Discriminatory treatment might become subtler and more sophisticated. Although coming from the same source and possibly similar in its operation, understanding this kind of prejudice-based discrimination may be an important challenge for future work.

Assuming that the decline in prejudice among the average American is real and that prejudice has not simply become implicit bias, prejudice has not entirely disappeared from the market. Fewer people now hold prejudiced views than once was the case, but the number holding these views is not zero. Is the presence of only a small set of prejudiced persons/firms consistent with the possibility of an equilibrium gap attributable to prejudice?

If the vast majority of firms are not prejudiced, then the logic of the standard Becker model described above would seem to suggest that there would be no equilibrium discrimination, again since Black workers would sort to non-racist firms. That is, the marginal employer would be unprejudiced.

Recall that the sorting mechanism from Becker's model assumes perfect information and free mobility. Recent models, beginning with Black (1995) and then extended by Lang and Lehmann (2012); Bowlus and Eckstein (2002) show how when there is imperfect

information and random search, prejudice and associated discrimination among even a small number of firms can give rise to an equilibrium in which Black workers have worse labor market outcomes relative to similar White workers. Intuitively, suppose when searching for jobs, Black workers know that there is some chance – however small – that they will encounter an employer who will not hire them because of prejudice. They should be willing to accept a lower wage than their White counterpart from a firm that has no racial prejudice. In effect, the presence of prejudiced firms increases search costs for Black workers, giving even non-prejudiced firms a form of monopsony power over Black employees. This in turn results in Black workers receiving lower wages or earnings than White workers in equilibrium. Notably, although the firm that pays them less is not itself prejudiced, this outcome is still due to prejudice as it arises from (possibly small amounts of) prejudice among all employers. Extending these models is an obvious area of future research on prejudice's effects.

Our discussion of how prejudice and the discrimination to which it might give rise emphasizes traditional neoclassical reasoning, whereby individual agents are concerned only with their own individual payoffs. However, prejudice may operate in a way that centers *group* identity.

One subfield of economics that takes this perspective is stratification economics, which integrates insights from sociology and psychology in order to better theorize and understand persistent group differences (e.g., racial, religious, gender, or class disparities, to name a few) (Darity Jr et al., 2015). Critical to this approach is a recognition of the group-level payoffs and actions that are tied to maintaining existing social hierarchies. In this sense, stratification economics turns away from neoclassical explanations for inequality based on individual choice and differences in human capital investment (Chelwa et al., 2022). The field also rejects the notion of "irrational" discrimination that vanishes under perfect market competition. Instead, stratification economics posits that groups make rational, intentional decisions to preserve their relative position and that these decisions are critical to group formation. Stratification scholars use a variety of approaches in their analyses, including racial identity production modeling (Stewart, 2010), evolutionary game theoretic modeling, and reduced form estimation of racial identification (Chelwa et al., 2022; Mason, 2017). Unlike the neoclassical framework, which encourages market-based solutions and tends to emphasize individual investment in skills to close wage differences, stratification economics looks primarily to policies that disrupt dominant group advantages or redistributional interventions that can redress persistent group inequality (Chelwa et al., 2022).

8 Conclusion and Looking Forward

In this subsection, we discuss some potential areas for new and expanded inquiry into racial prejudice, which may have important implications not only for future positional questions, but also for future questions dealing with distributional concerns.

One possible area for future work is the expansion of the theoretical definition and representation of prejudice in formal models. As noted, the standard formulation of prejudice in economics follows Becker's representation, which models prejudice as a distaste for cross-racial interaction. Important results and insights emerge from this formulation, including the prediction that the equilibrating mechanism in this framework will tend to limit cross-racial interaction and result in an equilibrium characterized by the marginal discriminator.

Yet this traditional formulation is only *one* potential way that racially prejudiced sentiment might operate. For example, someone knowledgeable about race relations at times and places when racial prejudice was vastly more pronounced than now, such as the Deep South during slavery or Jim Crow, might reasonably insist instead that since racist beliefs permitted and even encouraged some cross-racial interactions of the closest and quite intimate kinds, that it is more accurate to say that such sentiments make certain types of cross-racial interactions particularly appealing, perhaps those in which Black individuals or other racial minorities are in a position of subservience[38].

Adopting reasonable alternative definitions of prejudice in labor market models of discrimination may lead to novel, unexplored predictions about the equilibrium positional implications of prejudice. These might include predictions, for example, about how prejudice affects Black workers' location in organizational hierarchies, particularly in regions with different forms of racial prejudice.

Another feature of how economists have traditionally modeled prejudice that future scholars will likely relax is the focus on the connection between prejudicial sentiment at any given time and outcomes that are contemporaneous. Yet, prejudice can obviously have dynamic effects. Discrimination due to prejudice that causes economic injury to Black workers in particular sectors or occupations might lead Black workers in *subsequent* generations to make job or human capital choices that disadvantage them relative to other groups, leading to a multi-period or cross-generational positional effect of racial prejudice.

Biases that people are unaware of or that they shield, because particular views have become socially indecorous, have implications for some of the questions that labor economists interested in prejudice may have to address in the future. Discriminatory

[38]The famous Black comedian and civil rights activist Dick Gregory, commenting on the different shadings that racial prejudice assumed, once wrote "Down South White folks don't care how close I get as long as I don't get too big. Up North, White folks don't care how big I get as long as I don't get too close." (Gregory, 1971)

treatment might become more subtle or implicit. Despite coming from the same source and possibly operating in a similar fashion as prejudice in the past, understanding this more nuanced kind of prejudice-based discrimination may be a challenge for future work.

Although multiple racial and ethnic groups comprise the U.S. population, most discussions about racial prejudice concentrate narrowly on the Black-White dyad. In a multi-ethnic society, with employers, co-workers, and customers drawn from multiple racial groups, an individual's success in the labor market will depend, in part, on the treatment they receive in labor market transactions from persons from all those groups, and this treatment is in turn affected by the types of prejudices or biases those others hold. Similarly, the political support for ameliorative positional policies, such as racial preferences in admissions for members of any racial group, will increasingly hinge on the views that other racial minorities have about those policies. Analyzing how positional gains or losses arise in the context of a *marketplace* of groups' different racial prejudices is an important future task for scholars seeking to understand the effect of prejudice in multi-racial societies like the U.S.

Throughout this Chapter, we have treated distributional and positional forces as wholly distinct phenomena, implicitly assuming that factors that affect the one have no bearing on the other. There are many reasons, however, why racial prejudice might affect not only narrowly positional questions, but also key distributional questions.

As shown previously in the Chapter, a natural use of the framework would be to assess the effect of a specific putatively race-neutral policy on the change in racial gaps over time. However, race-neutral policies are unlikely to be drawn at random from the set of all possible policy initiatives. In particular, the political support a policy garners, and thus the likelihood of its implementation or enactment, may hinge critically on whom voters and citizens believe would benefit from it most.[39] To the extent that racial prejudice decreases political enthusiasm for contemporary policies that are thought to most positively impact those parts of the national distribution where Black workers are disproportionately located, there will be an obvious link between "purely" distributional (a given race-neural policy or institution) and underlying societal prejudice, making it

[39]These ideas have been developed extensively in the literature on race in sociology, history, and public policy. Of particular relevance to labor market inequities and the framework developed in this chapter is work that has demonstrated how racial motivations may actively shape the development of policies in a social context in which explicit racial considerations are illegal or violate social norms (Bonilla-Silva and Embrick, 2006; Massey, 2007; Katznelson, 2005). This research has emphasized that the differential racial impact of ostensibly "race-neutral" policies may be by design – i.e., designed to benefit or preserve the position of the group(s) that exerts political control over the policy process. This obviously complicates the easy characterization of changes in group inequality related to distributional and positional convergence as representing"race-neutral" and "race-specific" factors, respectively, as some of the generic changes to the institutions or structure of the economy may be deliberately chosen for their differential racial impact.

difficult to separate the two phenomena cleanly.[40]

How racial prejudice affects voters' beliefs about policy, thereby determining what policies society implements, applies not only to contemporary policies but may apply with even greater force to policies from the past. If so, a fundamental link may exist between prejudice understood in a dynamic context and what we can learn from contemporary distributional analyses.

Consider, for example, using the decomposition method to analyze changes in racial gaps between periods t_0 and t_1. This analysis treats as given the location of members of the groups in the outcomes distribution in the initial period, t_0. Nevertheless, the disproportionate location of Black individuals and racial minorities in the lower tail of the relevant national distribution may be partially due to race-specific considerations from the past. A decomposition that splits the change in outcomes into parts due to positional and distributional factors between the two periods runs the danger of systematically understating the role of prejudice (or other race-specific considerations) by failing to account for how these factors determined agents' location in the initial relevant distribution. Extensions of the approach presented here might help address this issue.

The possible connection between prejudice in a dynamic, historical context and putatively race-neutral forces may help in the future analysis of the phenomenon of "systemic" or "structural" racism or discrimination, which has received substantial and rapidly increasing attention in recent years in economics, the broader social science literature, and the popular press. Despite the popularity of the idea, we are not aware of a precise definition that exists in the economics literature.[41]

That said, it is possible to identify some key ideas that most users of the term within economics wish to highlight about what the construct entails. We believe that these ideas may be well-captured by the positional and distributional ideas in our framework.[42] One way in which future scholars in labor economics might represent systemic discrimination is to say that there exist today structures in society, including the labor market, which, in their operation, are utterly race-neutral and unaffected by the actions or prejudices

[40]Previous research which suggests that this is an important concern is Luttmer (2001), which examines stated support for welfare spending and votes in support of cuts to this benefit. This analysis finds that both outcomes are strongly affected by the racial makeup of people's neighbors – a sentiment that is likely related to racial prejudice. While welfare is not a labor market institution, one can imagine that similar considerations apply to labor market policies that might interest labor economists.

[41]In a seminal sociological text, Bonilla-Silva (1997) puts forward the notion of a "structural theory of racism" that overcomes limitations of prevailing theories of racism. The key difference is that the structural theory emphasizes the process of racialization which precedes racism per se and which racism then serves to rationalize and naturalize. Bonilla-Silva defines such racialized social systems as "societies that allocate differential economic, political, social, and even psychological rewards to groups along racial lines; lines that are socially constructed." Critically, this framework of racialized social systems can explain both overt as well as more nuanced or covert manifestations of racial ideology.

[42]The understanding we emphasize here differs for a minority of scholars who use of the term "systemic" to be something like "widespread" discrimination. See Kline et al. (2022).

of any specific individual market actor today. However, these structures and systems, at the point of their creation, may have been understood by those designing them to have a disproportionate adverse impact on Black Americans, given their historical position in the socioeconomic distribution. Moreover, the choice of the given system versus some alternative may have been made partly *because* of its negative effect on Black workers.

An analyst of changes in racial gaps, observing current policies, institutions, and systems that function in a purely race-neutral manner – and noting the absence of contemporary racist actors or socially sanctioned ways for such persons to operate – might too readily attribute poor relative performance of Black workers to unobserved skill deficits rather than historical racist policy-making or systems design. The adverse effect of these historical forces on current Black outcomes is embedded in institutions, policies, and programs that govern the modern labor market. Even the above may not reflect all key dimensions of what persons interested in systemic discrimination might mean by the term. We hope, nonetheless, that future labor economists interested in these questions, which matter crucially for debates about policies aimed at reducing racial inequality, may use ideas like those presented here to formally define and analyze this important construct and others like it.

References

Abraham, K. G. and Kearney, M. S. (2020). Explaining the decline in the US employment-to-population ratio: A review of the evidence. *Journal of Economic Literature*, 58(3):585–643.

Adida, C. L., Laitin, D. D., and Valfort, M.-A. (2010). Identifying barriers to Muslim integration in France. *Proceedings of the National Academy of Sciences*, 107(52):22384–22390.

Agan, A., Garin, A., Koustas, D., Mas, A., and Yang, C. S. (2024). The labor market impacts of reducing felony convictions. *American Economic Review: Insights*, 6(3):341–358.

Agan, A. and Starr, S. (2017). The effect of criminal records on access to employment. *American Economic Review*, 107(5):560–564.

Aigner, D. J. and Cain, G. G. (1977). Statistical theories of discrimination in labor markets. *ILR Review*, 30(2):175–187.

Aizer, A., Boone, R., Lleras-Muney, A., and Vogel, J. (2020). Discrimination and racial disparities in labor market outcomes: Evidence from WWII. NBER Working Paper no. 27689, National Bureau of Economic Research.

Akerlof, G. A., Yellen, J. L., and Katz, M. L. (1996). An analysis of out-of-wedlock childbearing in the United States. *The Quarterly Journal of Economics*, 111(2):277–317.

Alesina, A., Ferroni, M. F., and Stantcheva, S. (2021). Perceptions of racial gaps, their causes, and ways to reduce them. NBER Working Paper no. 29245, National Bureau of Economic Research.

Algan, Y., Dustmann, C., Glitz, A., and Manning, A. (2010). The economic situation of first and second-generation immigrants in France, Germany and the United Kingdom. *The Economic Journal*, 120(542):F4–F30.

Althoff, L. (2023). Two steps forward, one step back: Racial income gaps among women since 1950. Working paper. `https://www.dropbox.com/s/mlvl3abgn3txkds/2020_racialgaps.pdf?raw=1`.

Althoff, L. and Reichardt, H. (2024). Jim crow and black economic progress after slavery. *The Quarterly Journal of Economics*, 139(4):2279–2330.

Altonji, J. G. and Pierret, C. R. (2001). Employer learning and statistical discrimination. *The Quarterly Journal of Economics*, 116(1):313–350.

Aneja, A. and Avenancio-Leon, C. F. (2019). The effect of political power on labor market inequality: Evidence from the 1965 Voting Rights Act. Working paper. `https://www.avenancioleon.com/s/vralabor_online_v02182019_v1.pdf`.

Aneja, A. and Xu, G. (2022). The costs of employment segregation: Evidence from the federal government under Woodrow Wilson. *The Quarterly Journal of Economics*, 137(2):911–958.

Antman, F. M., Duncan, B., and Trejo, S. J. (2023). Hispanic Americans in the labor market: Patterns over time and across generations. *Journal of Economic Perspectives*, 37(1):169–198.

Anwar, S., Bayer, P., and Hjalmarsson, R. (2012). The impact of jury race in criminal trials. *The Quarterly Journal of Economics*, 127(2):1017–1055.

Anwar, S. and Fang, H. (2006). An alternative test of racial prejudice in motor vehicle searches: Theory and evidence. *American Economic Review*, 96(1):127–151.

Arcidiacono, P., Bayer, P., and Hizmo, A. (2010). Beyond signaling and human capital: Education and the revelation of ability. *American Economic Journal: Applied Economics*, 2(4):76–104.

Arnold, D., Dobbie, W., and Yang, C. S. (2018). Racial bias in bail decisions. *The Quarterly Journal of Economics*, 133(4):1885–1932.

Arrow, K. (1973a). Discrimination in labor markets. In Ashenfelter, O. and Rees, A., editors, *The Theory of Discrimination*, pages 3–33. Princeton University Press, Princeton, NJ.

Arrow, K. (1973b). J. 1973. The theory of discrimination. *Discrimination In Labor Markets*, pages 3–33.

Autor, D., Dorn, D., and Hanson, G. (2019). When work disappears: manufacturing decline and the falling marriage market value of young men. *American Economic Review: Insights*, 1(2):161–178.

Autor, D., Dube, A., and McGrew, A. (2023). The unexpected compression: Competition at work in the low wage labor market. NBER Working Paper no. 31010, National Bureau of Economic Research.

Avivi, H., Kline, P., Rose, E., and Walters, C. (2021). Adaptive correspondence experiments. *AEA Papers and Proceedings*, 111:43–48.

Ayala-McCormick, D. (2021). The myth of the Latin American race monolith: Notes for future comparative research on racial inequality in the Americas. *The Review of Black Political Economy*, 48(4):381–409.

Ba, B. A., Knox, D., Mummolo, J., and Rivera, R. (2021). The role of officer race and gender in police-civilian interactions in Chicago. *Science*, 371(6530):696–702.

Bailey, M. J. and Collins, W. J. (2006). The wage gains of African-American women in the 1940s. *The Journal of Economic History*, 66(3):737–777.

Bailey, M. J. and Lindo, J. M. (2018). Access and use of contraception and its effects on women's outcomes in the United States. In Averett, S. L., Argys, L. M., and Hoffman, S. D., editors, *Oxford Handbook On Women and The Economy*, pages 219–257. Oxford University Press, New York, NY.

Baron, E. J., Doyle Jr, J. J., Emanuel, N., Hull, P., and Ryan, J. (2024). Discrimination in multiphase systems: Evidence from child protection. *The Quarterly Journal of Economics*, pages 1611–1664.

Bastian, J. (2020). The rise of working mothers and the 1975 Earned Income Tax Credit. *American Economic Journal: Economic Policy*, 12(3):44–75.

Batistich, M. K. and Bond, T. N. (2023). Stalled racial progress and Japanese trade in the 1970s and 1980s. *Review of Economic Studies*, 90(6):2792–2821.

Bayer, P. and Charles, K. K. (2018). Divergent paths: Structural change, economic rank, and the evolution of black-white earnings differences, 1940-2014. *Quarterly Journal of Economics*, 133(3):1459–1501.

Becker, G. S. (1957). *The economics of discrimination*. University of Chicago press.

Bertrand, M., Chugh, D., and Mullainathan, S. (2005). Implicit discrimination. *American Economic Review*, 95(2):94–98.

Bertrand, M. and Duflo, E. (2017). Field experiments on discrimination. In *Handbook of Economic Field Experiments*, volume 1, pages 309–393. Elsevier.

Bertrand, M. and Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review*, 94(4):991–1013.

Black, D. A. (1995). Discrimination in an equilibrium search model. *Journal of Labor Economics*, 13(2):309–334.

Blair, P. and Chung, B. (2017). Occupational licensing reduces racial and gender wage gaps: Evidence from the survey of income and program participation. HCEO Working Paper Series no. 50, Human Capital and Economic Opportuinty Global Working Group.

Bohren, J. A., Hull, P., and Imas, A. (2024). Systemic discrimination: Theory and measurement. NBER Working Paper no. 29820, National Bureau of Economic Research.

Bonilla-Silva, E. (1997). Rethinking racism: Toward a structural interpretation. *American Sociological Review*, pages 465–480.

Bonilla-Silva, E. and Embrick, D. G. (2006). Racism without racists: "Killing me softly" with color blindness. *Reinventing Critical Pedagogy*, pages 21–34.

Bound, J. and Freeman, R. B. (1992). What went wrong? The erosion of relative earnings and employment among young black men in the 1980s. *The Quarterly Journal of Economics*, 107(1):201–232.

Boustan, L. P., Frydman, C., and Margo, R. A. (2014). The origin and persistence of black-white differences in women's labor force participation. In *Human Capital In History: The American Record*. University of Chicago Press.

Bowlus, A. J. and Eckstein, Z. (2002). Discrimination and skill differences in an equilibrium search model. *International Economic Review*, 43(4):1309–1345.

Butcher, K. F. (1994). Black immigrants in the United States: A comparison with native blacks and other immigrants. *ILR Review*, 47(2):265–284.

Card, D. and Krueger, A. B. (1992). School quality and black-white relative earnings: A direct assessment. *The Quarterly Journal of Economics*, 107(1):151–200.

Carneiro, P., Heckman, J. J., and Masterov, D. V. (2005). Labor market discrimination and racial differences in premarket factors. *The Journal of Law and Economics*, 48(1):1–39.

Chafetz, J. S. (1995). Chicken or egg? a theory of the relationship between feminist movements and family change. In *Gender and Family Change in Industrialized Countries*. Oxford University Press.

Charles, K. K. and Guryan, J. (2008). Prejudice and wages: An empirical assessment of Becker's The Economics of Discrimination. *Journal of Political Economy*, 116(5):773–809.

Charles, K. K., Hurst, E., and Notowidigdo, M. J. (2016). The masking of the decline in manufacturing employment by the housing bubble. *Journal of Economic Perspectives*, 30(2):179–200.

Chelwa, G., Hamilton, D., and Stewart, J. (2022). Stratification economics: Core constructs and policy implications. *Journal of Economic Literature*, 60(2):377–399.

Coglianese, J. (2018). The rise of in-and-outs: Declining labor force participation of prime age men. Working paper. `https://www.johncoglianese.com/publication/in-and-outs/in-and-outs.pdf`.

Collins, W. J. (2001). Race, Roosevelt, and wartime production: Fair employment in World War II labor markets. *American Economic Review*, 91(1):272–286.

Craigie, T.-A. (2020). Ban the box, convictions, and public employment. *Economic Inquiry*, 58(1):425–445.

Darity Jr, W. (1990). Race and inequality in the managerial age. *Social and Economic Issues In Black America*, 4:29–82.

Darity Jr, W. A., Hamilton, D., and Stewart, J. B. (2015). A tour de force in understanding intergroup inequality: An introduction to stratification economics. *The Review of Black Political Economy*, 42(1-2):1–6.

Darity Jr, W. A. and Mason, P. L. (1998). Evidence on discrimination in employment: Codes of color, codes of gender. *Journal of Economic Perspectives*, 12(2):63–90.

Darity Jr, W. A., Myers Jr, S. L., and Chung, C. (1998). Racial earnings disparities and family structure. *Southern Economic Journal*, 65(1):20–41.

Deming, D. J. (2017). The growing importance of social skills in the labor market. *The Quarterly Journal of Economics*, 132(4):1593–1640.

Derenoncourt, E., Govind, Y., and Santini, P. (2025). Racial Inequality in France. Working Paper. https://www.dropbox.com/scl/fi/wrd0mtcb2d6z5wba3m6sm/DGS2025$_{R}acial_{I}nequality_{F}rance.pdf?rlkey = 0lkj81b32o9vfagt3c0snmexust = v6nczqztdl = 0$.

Derenoncourt, E., Gérard, F., Lagos, L., and Montialoux, C. (2024). Racial Inequality, Minimum Wage Spillovers, and the Informal Sector. Working Paper. `http://www.clairemontialoux.com/files/DGLM2021.pdf`.

Derenoncourt, E. and Montialoux, C. (2021). Minimum wages and racial inequality. *Quarterly Journal of Economics*, 136(1):169–228.

DiNardo, J., Fortin, N. M., and Lemieux, T. (1996). Labor market institutions and the distribution of wages, 1973-1992: A semiparametric approach. *Econometrica*, 64(5):1001–1044.

Dobbie, W., Hull, P., and Arnold, D. (2022). Measuring racial discrimination in bail decisions. *American Economic Review*, 112(9).

Doleac, J. L. and Hansen, B. (2020). The unintended consequences of "ban the box": Statistical discrimination and employment outcomes when criminal histories are hidden. *Journal of Labor Economics*, 38(2):321–374.

Donohue, J. J. and Heckman, J. (1991). Continuous versus episodic change: The impact of civil rights policy on the economic status of blacks. *Journal of Economic Literature*, 29(4):1603–1643.

Duguet, E., Leandri, N., L'horty, Y., and Petit, P. (2010). Are young French jobseekers of ethnic immigrant origin discriminated against? A controlled experiment in the Paris area. *Annals of Economics and Statistics/Annales d'Économie et de Statistique*, 99/100:187–215.

Enriquez, B. and Kurtulus, F. A. (2023). Racially disparate effects of the Japan trade shock. Working paper. `https://1drv.ms/b/c/5F47E38FE8A526D9/EdwLwsykOdtBk8CkaABlvVABnbl44ttFLsLu3NpdhC1fyA?e=ZIyGbr`.

Farber, H. S., Herbst, D., Kuziemko, I., and Naidu, S. (2021). Unions and inequality over the twentieth century: New evidence from survey data. *The Quarterly Journal of Economics*, 136(3):1325–1385.

Feigenberg, B. and Miller, C. (2021). Racial divisions and criminal justice: Evidence from southern state courts. *American Economic Journal: Economic Policy*, 13(2):207–240.

Feigenberg, B. and Miller, C. (2022). Would eliminating racial disparities in motor vehicle searches have efficiency costs? *The Quarterly Journal of Economics*, 137(1):49–113.

Ferrara, A. (2022). World War II and black economic progress. *Journal of Labor Economics*, 40(4):1053–1091.

Fryer Jr, R. G. (2011). Racial inequality in the 21st century: The declining significance of discrimination. In *Handbook of Labor Economics*, volume 4, pages 855–971. Elsevier.

Fryer Jr, R. G. and Levitt, S. D. (2004). The causes and consequences of distinctively black names. *The Quarterly Journal of Economics*, 119(3):767–805.

Garin, A., Koustas, D. K., McPherson, C., Norris, S., Pecenco, M., Rose, E. K., Shem-Tov, Y., and Weaver, J. (2024). The impact of incarceration on employment, earnings, and tax filing. NBER Working Paper no. 32747, National Bureau of Economic Research.

Gerard, F., Lagos, L., Severnini, E., and Card, D. (2021). Assortative matching or exclusionary hiring? The impact of employment and pay policies on racial wage differences in brazil. *American Economic Review*, 111(10):3418–3457.

Glover, D., Pallais, A., and Pariente, W. (2017). Discrimination as a self-fulfilling prophecy: Evidence from French grocery stores. *The Quarterly Journal of Economics*, 132(3):1219–1260.

Goldin, C. (1977). Female labor force participation: The origin of black and white differences, 1870 and 1880. *The Journal of Economic History*, 37(1):87–108.

Goldin, C. (1995). The U-shaped female labor force function in economic development and economic history. In Schultz, T., editor, *Investment In Women's Human Capital and Economic Development*. University of Chicago Press.

Goldin, C. and Katz, L. F. (2002). The power of the pill: Oral contraceptives and women's career and marriage decisions. *Journal of Political Economy*, 110(4):730–770.

Goldin, C. and Margo, R. A. (1992). The great compression: The wage structure in the United States at mid-century. *The Quarterly Journal of Economics*, 107(1):1–34.

Goldin, C. and Mitchell, J. (2017). The new life cycle of women's employment: Disappearing humps, sagging middles, expanding tops. *Journal of Economic Perspectives*, 31(1):161–182.

Goodman-Bacon, A. and Cunningham, J. (2019). Changes in family structure and welfare participation since the 1960s: The role of legal services. NBER Working Paper no. 26238, National Bureau of Economic Research, Cambridge, MA.

Govind, Y. and Santini, P. (2024). The colour-blind approach to discrimination and inequality: The case of France. *Oxford Review of Economic Policy*, 40(3):592–605.

Gregory, D. (1971). My answer to genocide. *Ebony*, 26(12):66–72.

Grodsky, E. and Pager, D. (2001). The structure of disadvantage: Individual and occupational determinants of the black-white wage gap. *American Sociological Review*, 66(4):542–567.

Hamilton, T. G. (2019). *Immigration and the remaking of black America*. Russell Sage Foundation.

Heckman, J. J. (1998). Detecting discrimination. *Journal of Economic Perspectives*, 12(2):101–116.

Heckman, J. J. and Rubinstein, Y. (2001). The importance of noncognitive skills: Lessons from the GED testing program. *American Economic Review*, 91(2):145–149.

Hoynes, H. W. and Schanzenbach, D. W. (2018). Safety net investments in children. *Brookings Papers on Economic Activity*, 49(1 (Spring)):89–150.

Hsieh, C.-T., Hurst, E., Jones, C. I., and Klenow, P. J. (2019). The allocation of talent and US economic growth. *Econometrica*, 87(5):1439–1474.

Johnson, R. C. (2011). Long-run impacts of school desegregation & school quality on adult attainments. NBER Working Paper no. 16664, National Bureau of Economic Research.

Johnson, R. C. (2019). *Children of the dream: Why school integration works*. Basic Books.

Juhn, C., Murphy, K. M., and Pierce, B. (1991). Accounting for the slowdown in black-white wage convergence. In Kosters, M. H., editor, *Workers and Their Wages*, pages 107–143. AEI Press.

Juhn, C. and Potter, S. (2006). Changes in labor force participation in the United States. *Journal of Economic Perspectives*, 20(3):27–46.

Katz, L., Kearney, M., et al. (2008). Trends in US wage inequality: Revising the revisionists. *The Review of Economics and Statistics*, 90(2):300–323.

Katz, L. F. and Murphy, K. M. (1992). Changes in relative wages, 1963-1987: Supply and demand factors. *The Quarterly Journal of Economics*, 107(1):35–78.

Katznelson, I. (2005). *When affirmative action was white: An untold history of racial inequality in twentieth-century America*. WW Norton & Company.

Kessler, J. B., Low, C., and Sullivan, C. D. (2019). Incentivized resume rating: Eliciting employer preferences without deception. *American Economic Review*, 109(11):3713–3744.

Kline, P., Rose, E. K., and Walters, C. R. (2022). Systemic discrimination among large US employers. *The Quarterly Journal of Economics*, 137(4):1963–2036.

Kline, P., Rose, E. K., and Walters, C. R. (2024). A discrimination report card. *American Economic Review*, 114(8):2472–2525.

Kline, P. and Walters, C. (2021). Reasonable doubt: Experimental detection of job-level employment discrimination. *Econometrica*, 89(2):765–792.

Lafortune, J. and Low, C. (2023). Collateralized marriage. *American Economic Journal: Applied Economics*, 15(4):252–291.

Lang, K. and Lehmann, J.-Y. K. (2012). Racial discrimination in the labor market: Theory and empirics. *Journal of Economic Literature*, 50(4):959–1006.

Lang, K. and Manove, M. (2011). Education and labor market discrimination. *American Economic Review*, 101(4):1467–1496.

Lang, K. and Spitzer, A. K.-L. (2020). Race discrimination: An economic perspective. *Journal of Economic Perspectives*, 34(2):68–89.

Lemieux, T. (2006). Postsecondary education and increasing wage inequality. *American Economic Review*, 96(2):195–199.

Linos, E., Mobasseri, S., and Roussille, N. (2024). Intersectional peer effects at work: The effect of white coworkers on black women's careers. *Management Science*, 4(9):10.

Loury, G. C. (1998). Discrimination in the post-civil rights era: Beyond market interactions. *Journal of Economic Perspectives*, 12(2):117–126.

Loveman, M. (2014). *National colors, racial classification and the state in Latin America*. Oxford University Press.

Luttmer, E. F. (2001). Group loyalty and the taste for redistribution. *Journal of Political Economy*, 109(3):500–528.

Margo, R. A. (1990). *Race and schooling in the South, 1880-1950: An economic history*. University of Chicago Press.

Marianne, B. and Hoynes Hilary, W. (2010). The state of the social safety net in the post-welfare reform era. *Brookings Papers on Economic Activity*, 2:71–127.

Mason, P. L. (2010). Culture and intraracial wage inequality among America's African diaspora. *American Economic Review, Papers and Proceedings*, 100(2):309–315.

Mason, P. L. (2017). Not black-alone: The 2008 presidential election and racial self-identification among African Americans. *The Review of Black Political Economy*, 44(1-2):55–76.

Massey, D. S. (2007). *Categorically unequal: The American stratification system*. Russell Sage Foundation.

Meurs, D., Pailhé, A., and Simon, P. (2006). The persistence of intergenerational inequalities linked to immigration: Labour market outcomes for immigrants and their descendants in France. *Population*, 61(5):645–682.

Mirza, H. S. and Warwick, R. (2024). Race and ethnic inequalities. *Oxford Open Economics*, 3(Supplement$_1$) : $i365 - -i452$.

Moody, M. Q. and Jr., W. A. D. (2018). Racial differences in American women's labor market outcomes: A long-run view. In Averett, S. L., Argys, L. M., and Hoffman, S. D., editors, *Oxford Handbook On Women and The Economy*, pages 595–622. Oxford University Press, New York, NY.

Moynihan, D. P. (1965). The negro family: The case for national action. *Office of Family Planning and Research*.

Mueller-Smith, M. (2015). The criminal and labor market impacts of incarceration. Working Paper. `https://sites.lsa.umich.edu/mgms/wp-content/uploads/sites/283/2015/09/incar.pdf`.

Neal, D. and Rick, A. (2014). The prison boom and the lack of black progress after Smith and Welch. NBER Working Paper no. 20283, National Bureau of Economic Research.

Neal, D. A. and Johnson, W. R. (1996). The role of premarket factors in black-white wage differences. *Journal of Political Economy*, 104(5):869–895.

Nichols, A. and Rothstein, J. (2015). The Earned Income Tax Credit. In *Economics of Means-Tested Transfer Programs in the United States, Volume 1*, pages 137–218. University of Chicago Press.

O'Neill, J. (1990). The role of human capital in earnings differences between black and white men. *Journal of Economic Perspectives*, 4(4):25–45.

Oreopoulos, P. (2011). Why do skilled immigrants struggle in the labor market? A field experiment with thirteen thousand resumes. *American Economic Journal: Economic Policy*, 3(4):148–71.

Pager, D. (2003). The mark of a criminal record. *American Journal of Sociology*, 108(5):937–975.

Pettit, B. and Ewert, S. (2009). Employment gains and wage declines: The erosion of black women's relative wages since 1980. *Demography*, 46(3):469–492.

Pew Research Center, Washington, D. C. (2023a). *Americans are divided on whether society overlooks racial discrimination or sees it where it doesn't exist*. `https://www.pewresearch.org/short-reads/2023/08/25/Americans-are-divided-on-whether-society-overlooks-racial-discrimination-or-sees-it-where-it-doesnt-exist`.

Pew Research Center, Washington, D. C. (2023b). *Black workers' views and experiences in the U.S. labor force stand out in key ways*. `https://www.pewresearch.org/short-reads/2023/08/31/black-workers-views-and-experiences-in-the-us-labor-force-stand-out-in-key-ways/`.

Phelps, E. S. (1972). The statistical theory of racism and sexism. *American Economic Review*, 62(4):659–661.

Piketty, T. and Saez, E. (2003). Income inequality in the United States, 1913–1998. *The Quarterly Journal of Economics*, 118(1):1–41.

Rodgers III, W. M. and Spriggs, W. E. (1996). What does the AFQT really measure: Race, wages, schooling and the AFQT score. *The Review of Black Political Economy*, 24(4):13–46.

Ruggles, S., Flood, S., Sobek, M., Backman, D., Chen, A., Cooper, G., Richards, S., Rodgers, R., and Schouweiler, M. (2024). IPUMS USA: Version 15.0 [dataset].

Saez, E. and Zucman, G. (2020). The rise of income and wealth inequality in America: Evidence from distributional macroeconomic accounts. *Journal of Economic Perspectives*, 34(4):3–26.

Smith, J. P. and Welch, F. R. (1989). Black economic progress after Myrdal. *Journal of Economic Literature*, 27(2):519–564.

Stewart, J. (2010). Racial identity production dynamics and persisting wealth differentials: Integrating neo-institutionalist perspectives into stratification economics. *The Review of Black Political Economy*, 37(3-4):217–222.

Sundstrom, W. A. (1992). Last hired, first fired? Unemployment and urban black workers during the great depression. *The Journal of Economic History*, 52(2):415–429.

Sundstrom, W. A. (2000). From servants to secretaries: The occupations of African-American women, 1940-1980. *SSRN Electronic Journal*. `http://dx.doi.org/10.2139/ssrn.1104056`.

U.S. Department of Labor (2024). *History of federal minimum wage rates under the Fair Labor Standards Act, 1938 - 2009*. `https://www.dol.gov/agencies/whd/minimum-wage/history/chart` Accessed: 2024-09-20.

Valfort, M.-A. (2020). Anti-Muslim discrimination in France: Evidence from a field experiment. *World Development*, 135:105022.

Whitmore Schanzenbach, D. and Strain, M. R. (2021). Employment effects of the Earned Income Tax Credit: Taking the long view. *Tax Policy and the Economy*, 35(1):87–129.

Wilson, W. J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy*. University of Chicago Press, Chicago.

Wilson, W. J. (1996). *When work disappears: The world of the new urban poor*. Alfred A. Knopf, New York.

Woo-Mora, L. G. (2024). Unveiling the cosmic race: skin tone disparities in Latin America. World Inequality Lab Working Paper, World Inequality Lab.

Wozniak, A. (2015). Discrimination and the effects of drug testing on black employment. *Review of Economics and Statistics*, 97(3):548–566.

Wright, G. (2013). *Sharing the prize*. Harvard University Press.

Wursten, J. and Reich, M. (2023). Racial inequality in frictional labor markets: Evidence from minimum wages. *Labour Economics*, 82:102344.

Ziegert, J. C. and Hanges, P. J. (2005). Employment discrimination: The role of implicit attitudes, motivation, and a climate for racial bias. *Journal of Applied Psychology*, 90(3):553.

Ziliak, J. P. (2015). Temporary assistance for needy families. In *Economics of Means-Tested Transfer Programs in the United States, Volume 1*, pages 303–393. University of Chicago Press.

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Appendix A Distributional Decomposition with Multiple Dimensions of Skill **79**

Appendix B Data Sources and Sample Restrictions for Analysis of Racial Gaps among Black and White Women in the U.S., 1940-1980 **79**

Appendix C Additional Results **80**

A Distributional Decomposition with Multiple Dimensions of Skill

Our non-parametric decomposition approach summarized by Equation 4 is fully unconditional and does not include any observable measures of education or skill. This unconditional decomposition often provides a natural starting point for characterizing changes in outcomes over a long historical period. This general framework can also be easily extended to accommodate multiple observed dimensions of skill, such as educational attainment, school quality, or estimated measures of cognitive and non-cognitive skills. This generalization allows for circumstances in which members of groups a and b might have different combinations of skills and each dimension of skill might command a different implicit price in the labor market.[43]

Extending the decomposition to accommodate observable heterogeneity is especially straightforward when the observed measures are categorized into discrete bins X, which can be used to capture one or more additional dimensions of skill. In this case, the distributional component of change can be estimated separately for each discrete bin X, holding everyone's initial position within the earnings distribution at its initial position among individuals in that bin. In the notation of equation 4, distributional convergence in this case is given by:

$$\left[(f_t^w(q_0^w(q|X)|X) - f_0^w(q_0^w(q|X)|X)) - (f_t^w(q|X) - f_0^w(q|X))\right] \tag{5}$$

Positional convergence can then again be computed by subtracting the estimated distributional component from the overall change in racial inequality over the time period. Positional change can be further decomposed into a number of interesting components separating, for example, the role of convergence in observable skills, X, versus movements in relative position within different X categories. We refer readers to Bayer and Charles (2018) for a more detailed discussion of the further decomposition of positional convergence.

An attractive feature of this multi-dimensional decomposition is that it captures the impact of observable components of skill, X, throughout the earnings distribution in a fully non-parametric way. Lemieux (2006) shows, for example, that educational attainment shifts both the mean and variance of earnings in ways that have important implications for our understanding of skill-biased technical change. The impact of higher-order moments like the variance would be naturally accounted for here.

B Data Sources and Sample Restrictions for Analysis of Racial Gaps among Black and White Women in the U.S., 1940-1980

To build our sample of Black and White women, we adapted the sample restriction and data approach from Bailey and Collins (2006). We used the following samples of Census data from Ruggles et al. (2024) for the decades 1940-1980: the 1940 1% sample, the 1950 1% sample, the 1960 5% sample, forms 1 and 2 of the 1970 1% state samples, and the 1980 5% state sample. We next applied several sample restrictions. First, we limited the sample to women aged 25 to 54 who were classified primarily as wage

[43] Bayer and Charles (2018), for example, study the implications of adding educational attainment as an observable measure of skill to the model.

and salary workers, were not enrolled in school, and were not employed as farmers, farm managers, or farm workers (1950 occupational codes equal to 100, 123, and 810 through 840). We further restricted the sample to individuals living in non-group-quarters households.

We used data on wage and salary earnings during the prior year with the variable *incwage*, multiplying top-coded values by a factor of 1.4. We included only those who worked more than four weeks in the previous calendar year, and then imposed further sample restrictions based on weekly wages. Specifically, we excluded individuals whose weekly wages were either 20 times the minimum weekly wage or less than 1/5 of the minimum wage. Weekly wages were calculated assuming 40 hours of work per week, and we referenced historical minimum wage data from the U.S. Department of Labor (U.S. Department of Labor, 2024) for this purpose. Specifically, we used values of $0.25 per hour for 1940, $0.40 per hour in 1950, $1.00 per hour in 1960, $1.30 per hour in 1970, and $2.90 per hour in 1980.[44]

For the years 1960 and 1970, only intervaled measures of weeks worked are available. To impute weekly earnings and make the necessary sample restrictions, we imputed actual weeks worked for these years by assigning individuals the mean value of weeks worked by workers in 1950 in the same racial category and whose weeks worked fell within the same interval range.

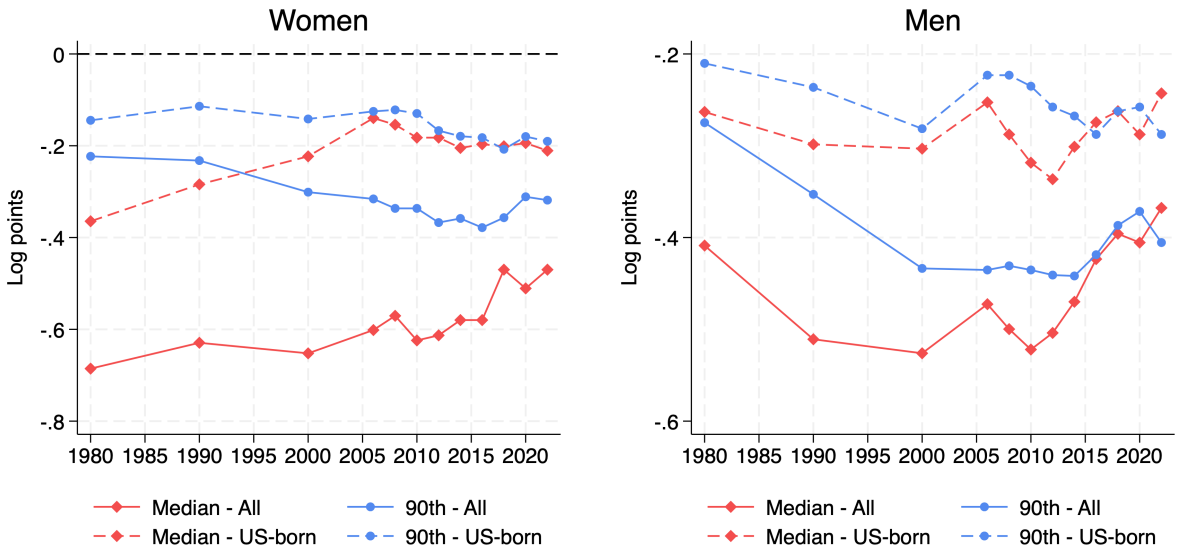
C Additional Results

[44]Note, these are the minimum wage rates applying throughout most of the reference year for the wage and salary questions in each Census.

Figure D1: Hispanic-White Earnings Level Gaps, Women and Men, U.S.-Born and All, 1980-2022

(a) Level Gaps

(b) Rank Gaps



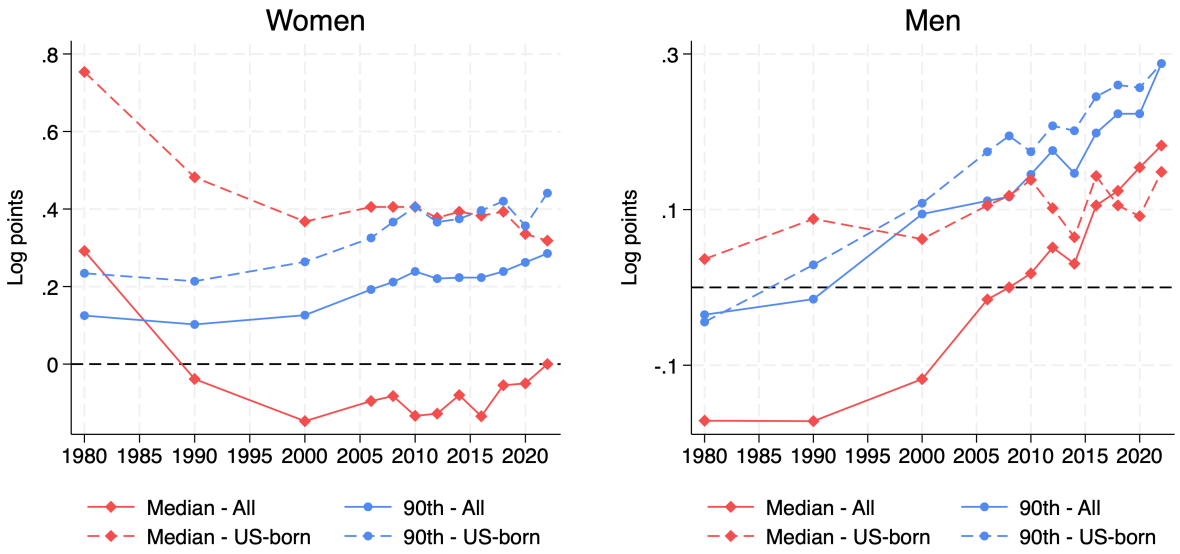
Notes: This figure plots the earnings level gap between the earnings of Hispanic and White workers, conditional on the birthplace of the worker. The earnings level gap is the difference between the log earnings of the median or 90th percentile worker in the Hispanic income distributions and the log earnings of the median or 90th percentile worker in the White income distribution. Panel a presents the results for women, and Panel b presents the results for men. Additionally, the solid lines present the two gap measures for all working adults in the sample, and the dashed lines present the two gap measures among those who are born in the U.S. The sample is restricted to adults between the ages of 25 to 54 at the time of each census or survey.

Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.

Figure D2: Asian-White Earnings Level Gaps, Women and Men, U.S.-Born and All, 1980-2022

(a) Level Gaps

(b) Rank Gaps



Notes: This figure plots the earnings level gap between the earnings of Asian and White workers, conditional on the birthplace of the worker. The earnings level gap is the difference between the log earnings of the median or 90th percentile worker in the Asian income distributions and the log earnings of the median or 90th percentile worker in the White income distribution. Panel a presents the results for women, and Panel b presents the results for men. Additionally, the solid lines present the two gap measures for all working adults in the sample, and the dashed lines present the two gap measures among those who are born in the U.S. The sample is restricted to adults between the ages of 25 to 54 at the time of each census or survey.

Data sources: Decennial Census 1980, 1990 2000, 2010, 2020; American Community Survey 2006, 2008, 2012, 2014, 2016, 2018, 2022.