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Racial Inequality in Labor Market Experiences in the United States

Matthijs Schendstok

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Matthijs Schendstok
United States Department of The Treasury

Abstract

This white paper provides an overview of racial inequality in the United States labor market, with a focus on some of the lesser-discussed aspects of how experiences in the labor market differ by race. I first show how differences in age and incarceration rates explain significant portions of differences in labor force participation rates and employment rates by race. Next, I show how there is substantial variation by race and ethnicity in the labor market experiences of employed workers. Such differences include differences in earnings, but also include non-pecuniary factors like differences in commuting time and occupational selection. Finally, racial disparities that emerge at young ages have strongly predictive outcomes on later life outcomes. Where a kid grew up and who they were surrounded by are arguably at least as important as adult factors; a significant amount of racial inequity is "pre-baked" by the time people age into the labor force.

* The findings, conclusions, views, and opinions expressed here are those of the author and do not necessarily represent those of the U.S. Department of the Treasury or the United States government. My thanks to Hilary Waldron, Sydney Schreiner Wertz, Karl Dunkle Werner, Rami Najjar, Robert Jackman, and participants at the Office of Economic Policy's seminar for their helpful comments. Any errors are my own.

Matthijs Schendstok: Matthijs.Schendstok@treasury.gov. 1500 Pennsylvania Ave NW, Washington, DC 20220.

1. Introduction

Racial equality in labor markets is a societal value that implicates both issues of fundamental fairness as well as economic efficiency. In this paper I broadly discuss three types of racial disparities in the labor market: differences in employment and labor force participation (Section 2); differences in labor market experiences among the employed, including some discussion of the earnings gap by race (Section 3); and childhood factors affecting later life labor market outcomes (Section 4).

This is far from the first paper to consider the role of race and ethnicity in the labor market (see, e.g., Becker 1957), and an extensive set of papers have been written on discrimination in the labor market as well as other contexts (e.g., justice system, social settings).[1] I discuss some of the major themes of this literature as well, but my primary aim in this paper is to discuss aspects of differences by race and ethnicity in the labor market that are often overlooked in policy discussions. For the most part, I draw upon previous research from a multidisciplinary set of literature, adding smatterings of my own original analysis throughout.

In Section 2, I explore racial disparities in employment. I review much of the standard literature, such as the audit studies which tend to show at least some discrimination in employment decisions. I add two primary observations of my own. First, policy papers frequently fail to account for age in comparing labor force participation rates by race. A much larger share of non-Hispanic white workers have aged out of prime working age (25-54) as a cohort than other demographic groups. I show this phenomenon explains a large portion of the gains people of color have made in labor force participation relative to non-Hispanic white workers. This has significant policy implications because it suggests those apparent gains may well be reversed. Second, I show that the standard employment-to-population ratio is biased because it fails to consider institutionalized people, especially those who are currently incarcerated. This omission has the effect of artificially inflating the employment rates of all men in general, but Black men in particular, as they are disproportionately more likely to be incarcerated. Using an Oaxaca-Blinder decomposition I show that properly measuring employment probabilities to include institutionalized persons explains a larger share of the difference in employment for prime-age Black men and white men than do differences in educational attainment.

In Section 3, I explore the differences in labor market experiences among the employed. Though I spend some time on the explaining the racial wage gap, I primarily focus on other dimensions of work that highlight how the employment experiences of workers differ by race. Topics surveyed include occupational segregation and selection, spatial differences in employment opportunity and cost of living, the potential role of monopsony power, and differences in effort costs associated with working. A unifying theme of this section is a focus on non-wage amenities or disamenities and how they differ by race. These differences add additional nuance to the racial disparities in employment experiences that basic earnings and employment comparisons alone

[1] See, e.g., Neumark (2018); Lang and Lehmann (2012); Pager and Shepherd. (2008); Bertrand and Duflo (2017).

cannot capture. For example, Black workers, especially in urban areas, have longer commutes on average, something that is likely a disamenity in the form of a *de facto* tax on time.

In Section 4, I take a step back to review pre-adulthood factors in determining later-life outcomes. I focus on two key channels through which this occurs: location and familial structure. A child's birthplace and family income are extremely predictive of later-life earnings, with research suggesting growing up in a "good" neighborhood may be worth hundreds of thousands of dollars in later-life earnings. Some later-life labor market differences are due to differences by race and ethnicity in familial structure as well. Particularly for children with Black fathers, incarceration plays an important role in limiting the time investment from their parents, which plays an important role in later life outcomes.

2. Racial Disparities in Labor Force Participation and Employment

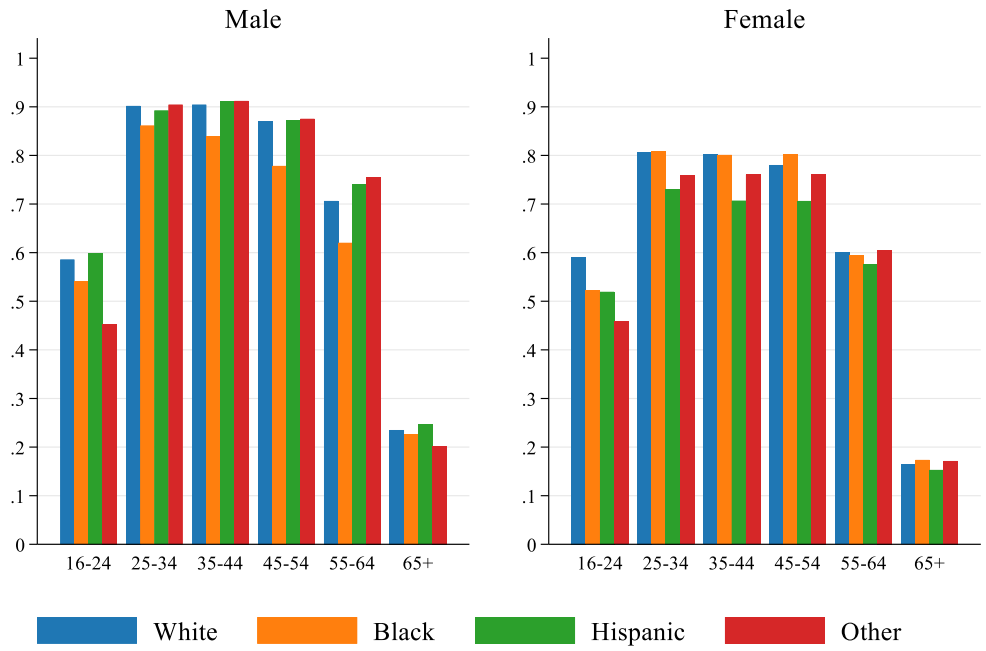
2.1. Differences in Labor Force Participation

Figure 1 reports labor force participation rates (LFPR) – the share of the working age population who either have or are actively seeking work – by race/ethnicity, age, and sex as of March 2023. Among all racial/ethnic groupings, prime-age (25-54) LFPR is higher than youth LFPR (ages 16-24) or post prime-age (55+) LFPR and LFPR rapidly declines after 65 for all ages. Overall, men are more likely to participate in the labor force across almost all age groups. This gender difference is most pronounced among Hispanic adults, primarily due to particularly low participation rates among Hispanic women.[2] In contrast, Black[3] labor force participation rates are much closer to gender parity, with Black women participating at greater rates than Black men among 45- to 54-year-olds. A key reason for this outlier is the relatively low participation rates of Black men across the age distribution.

[2] Though not broken out here, the gender LFPR gap is also particularly large for Asians. See https://www.dol.gov/agencies/wb/data/lfp/lfp-sex-race-hispanic. Asians are not reported separately because the analysis that follows utilizes data starting in the 1970s, before Asians were separately reported.

[3] In this analysis, references to "Black" or "Asian" refer to non-Hispanic Black and non-Hispanic Asian workers unless otherwise noted. And "Asian" refers to "Asian or Pacific Islander", "Asian Only", and "Hawaiian/Pacific Islander only."

Figure 1: Labor Force Participation Rates by Age and Race/Ethnicity



Source: Author's calculations using CPS-ASEC (March supplement) 2023, accessed via IPUMS. Black and White respectively refer to non-Hispanic Black and non-Hispanic white. Hispanics may be of any race.

As of March 2023, non-Hispanic white adults have the lowest aggregate LFPR of the four groups broken down in Figure 1, at around 61 percent.[4] Hispanic workers have the highest LFPR at nearly 67 percent. LFPR for Black workers is in the middle, at around 63 percent. Though not reported separately in Figure 1, the overall LFPR for Asian workers in 2023 was just under 65%.[5]

2.1.1. Aging Population

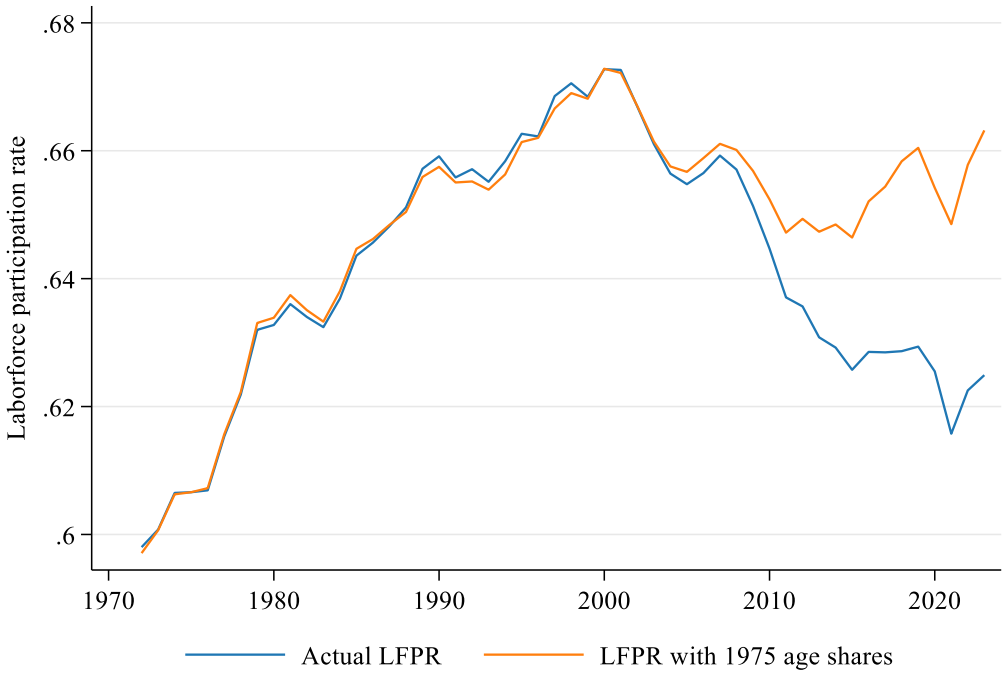
Changing demographics, specifically the aging of the workforce out of prime working age, have thus far impacted non-Hispanic white workers more than Black or Hispanic workers, masking the degree to which disparities in labor force participation rates have evolved over time. Specifically, in this subsection I show that failing to account for differences in demographic shifts overstates the convergence in LFPR between Black and non-Hispanic white workers and underestimates the difference in LFPR between non-Hispanic white and Hispanic workers.

Figure 3 shows overall LFPR from 1970 through 2023 (as of March in each year). The LFPR increased from the 1970s through to about the turn of the millennium, largely because of the increased participation of females.[6] Demographic shifts because of an aging Baby Boomer generation (1946-1964) account for a large portion of the decline in labor force participation rates since the early 2000s. The orange line of Figure 2 reports what the labor force participation

[4] See Figure A.1 in the appendix for time series plots of aggregate LFPR by race as of March of each year.
[5] In 2023, Asians persons made up around 72 percent of the "Other" category.
[6] LFPR of women over this period increased by about 17 percentage points while male LFPR declined about 5 percentage points. See, e.g., https://www.dol.gov/agencies/wb/data/lfp/lfp-sex-race-hispanic

would have been if the age distribution had stayed the same as what it was in 1975.[7] As of March 2023, the difference in the actual LFPR and age-distribution-constant LFPR is about 3.8 percentage points, over three fourths of the decline since 2000. That is, if the age distribution of the population stayed the same as it was 1975, the decline in LFPR since the year 200 would only have been about a fourth as large as it has actually been.

Figure 2: Actual and Age Distribution Constant LFPR

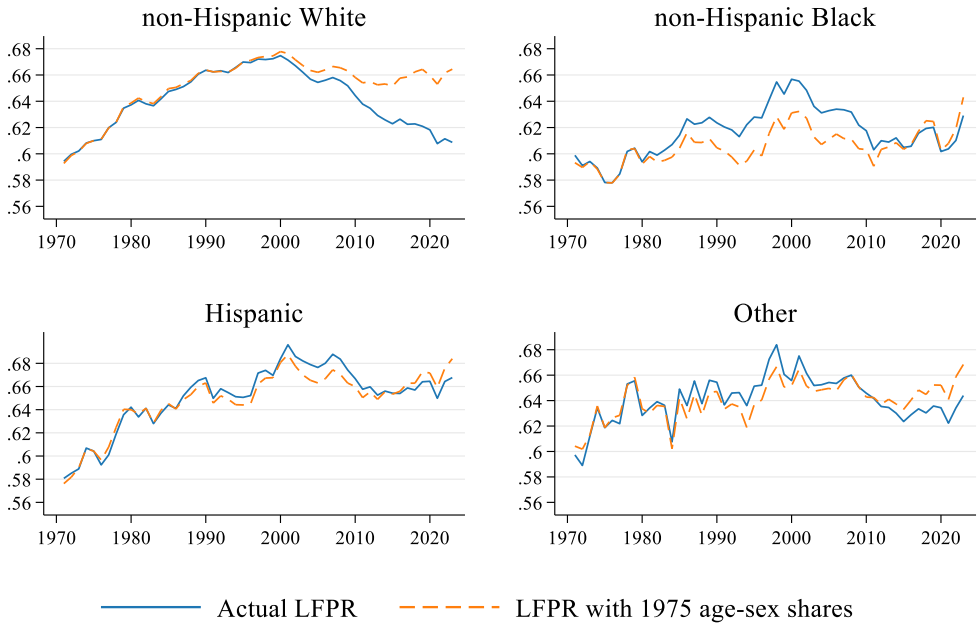


Source: Author's calculations using CPS-ASEC, accessed via IPUMS.

The contribution of demographic shifts is not equal across racial groups. Figure 3 replicates the age share analysis from Figure 2 for four racial sub-populations.[8] Almost all the aggregate counterfactual difference shown in Figure 3 are the result of changes in the non-Hispanic white population. A substantially larger share of the non-Hispanic white population is over the age of 55. And while the share of the population over 55 has increased among all racial groups, the share for non-Hispanic white adults is almost 80% larger (19 percentage points) than the share for Hispanic adults and a third larger (11 percentage points) than what it is for Black adults.[9]

[7] This basic approach is the same as the one taken by Krueger (2017).
[8] That is, for each panel, the 1975-constant shares assume the race-specific population share of 16- to 24-year-old men, 16 to 24 year old women, 25 to 35 year old men, 25 to 35 year old women, and so on remain constant at 1975 levels but the LFPRs of each group evolved as it actually did, then aggregates these shares back up for a race-specific LFPR.
[9] Author's calculations using data from CPS-ASEC (March supplement). Calculated population shares over 55 as of 2022: non-Hispanic white (43%); non-Hispanic Black (32%); Hispanic (24%); Other (29%).

Figure 3: Race-Specific Labor Force Participation Rates and Counterfactuals



Source: Author's calculations using CPS-ASEC (March supplement). 'Other' includes all non-Hispanic race/ethnicity categories other than white and Black alone. It includes non-Hispanic Asians and those of multiple races.

These differences have important implications both for the interpretation of recent trends and future projections of LFPR. For example, LFPR for Black workers in 2023 was 2 percentage points higher in than the LFPR for non-Hispanic white workers compared to 4 percent points lower than non-Hispanic white workers in 1990. This may give the false impression that LFPR for Black adults has "improved" even though Black LFPR stayed roughly constant over this period while LFPR for non-Hispanic white workers fell by 6 percent points[10] In the counterfactual analysis where the age distributions for both subpopulations were held constant, Black LFPR would be 2 percentage points *lower* in 2023 than non-Hispanic white LFPR. Thus, the apparent improvement of Black LFPR relative to non-Hispanic white LFPR is driven largely by declines among older non-Hispanic white workers.

Likewise, in 2023, Hispanic LFPR was 5.9 percentage points higher than LFPR for white workers, but this shrinks to less than 2 percentage points if age-sex shares had remained constant at their 1975 levels – less than a third as large. That is, without considering demographic shifts, the convergence between Black and white LFPR is overstated as is the higher LFPR of Hispanic adults compared to non-Hispanic white adults.

These estimates also have important implications for future developments LFPR disparities. An aging of the Black and Hispanic workforces compared to the already-aged non-Hispanic white

[10] I denote "improved" in quotations because I do not take a normative stance on whether greater labor force participation is inherently good or not. It may well be that declining labor supply is a sign of prosperity. See Keynes (1930).

population would lead to rapid declines in LFPRs of Black and Hispanic adults relative to non-Hispanic white adults. This could (wrongly) create the impression that LFPR of those groups was rapidly falling relative to white workers for some reason than an age composition effect akin to what has already occurred for non-Hispanic white adults.[11]

2.1.2. Other Reasons

Cajner et al. (2017) decompose sex-specific racial disparities in LFPR for near prime-age (25-49) workers into five broad categories: age, education, location (state), marital status, and unexplained. As the above analysis also suggests, differences in age explain a large (positive) portion of the difference in LFPR for all groups (Hispanic and Black men/women compared to their white counterparts). Since workers with lower levels of formal education are less likely to participate in the labor market and racial/ethnic minorities are less likely to have high levels of formal education,[12] they find that education plays a large negative role in LFPR of each group relative to their white counterparts, especially for Hispanic women relative to white women. Marital status plays a role in explaining LFPR differences among both Blacks and Hispanics, but much more among Blacks.[13]

Overall, Cajner et al. (2017) find that observable differences (age, education, state, and marital status) explain almost all the difference in LFPR for Black and Hispanic women relative to white women. For men, they find that these observable characteristics cannot explain why LFPRs are about 4 (6) percentage points higher (lower) for Hispanic (Black) men, as compared to white men, as of 2017. For Black men, they find that observable characteristics cannot explain why LFPRs are about 6 percentage points lower as compared to white men. I conduct a similar type of total-inequality analysis (Oaxaca-Blinder decomposition) for racial disparities in employment in Section 2.2.3.

2.2. Differences in Employment

In this section I focus on differences in employment rates for prime-age (25-54) workers. I focus on prime-age workers to avoid some of the problems associated with differential aging of the workforce by race highlighted in the previous section and because of data constraints.[14]

Prime-age employment population ratios (E-Pop) have risen substantially for women of all racial and ethnic groups since the 1970s (see Figure 4). The largest increases in E-Pop for women since 1970 has occurred among Hispanic women and "other" women, which predominately includes Asian women as of 2023. That said, E-Pop for Hispanic women remains well below E-Pop for women of other racial and ethnic backgrounds.

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[11] There is no guarantee that this aging of the workforce will occur to the same degree for Black and Hispanic workers, especially if there are high rates of immigration of young Black and Hispanic workers.

[12] See, e.g., BLS' Employment Situation Table A-4; https://www.bls.gov/news.release/empsit.t04.htm

[13] As I note above, Black households are less likely to consist of married couples. Since LFPR of married men tends to be higher than unmarried men and vice versa for married women, Cajner et al. (2017) find that lower rates of marital status for Black men tends to reduce their LFPR while it increases LFPR for women, helping explain why LFPR for this group is closer than it is for other racial groups.

[14] Specifically, the "institutionalized" variable, which I discuss in Section 2.2.1, includes both incarcerated people as well as those in nursing homes. Incarcerated likely dominates for those aged 54 or younger but that is likely not the case for older adults.

For men, the time series trend is more nuanced, with E-Pop falling for most groups falling until the mid-2000s, especially during the Great Recession of 2007. For most groups of men, prime-age E-Pop recovered during the lead-up to the COVID-19 pandemic, dipped during the pandemic, and have returned to levels slightly below where they were in 1970. At just under 80 percent, Black men have the lowest E-Pops of any groups considered in this paper as of 2022. In contrast, E-Pop for Asian, Hispanic, and non-Hispanic white men are all similar to each other in the mid- to high-80 percent range.

Figure 4: Prime-Age (25-54) Employment Rates by Race and Sex

Source: Decennial Census (1970-2000), ACS (2006 and later). Each dot represents a sample period. All races non-Hispanic unless otherwise noted. Hispanics may be of any race. 'Other' includes persons with multiple races.

2.2.1. Incarceration

The standard employment-to-population ratio measures the ratio of workers who are employed to the civilian *non-institutionalized* population.[15] In 2022, this exclusion led to about 1.2% fewer workers being counted in the denominator of the E-Pop.[16] Though arguably small in aggregate, there are extremely large differences by race and sex in the number of workers excluded because of this definition. Men – especially Black men– are disproportionately excluded by measuring E-

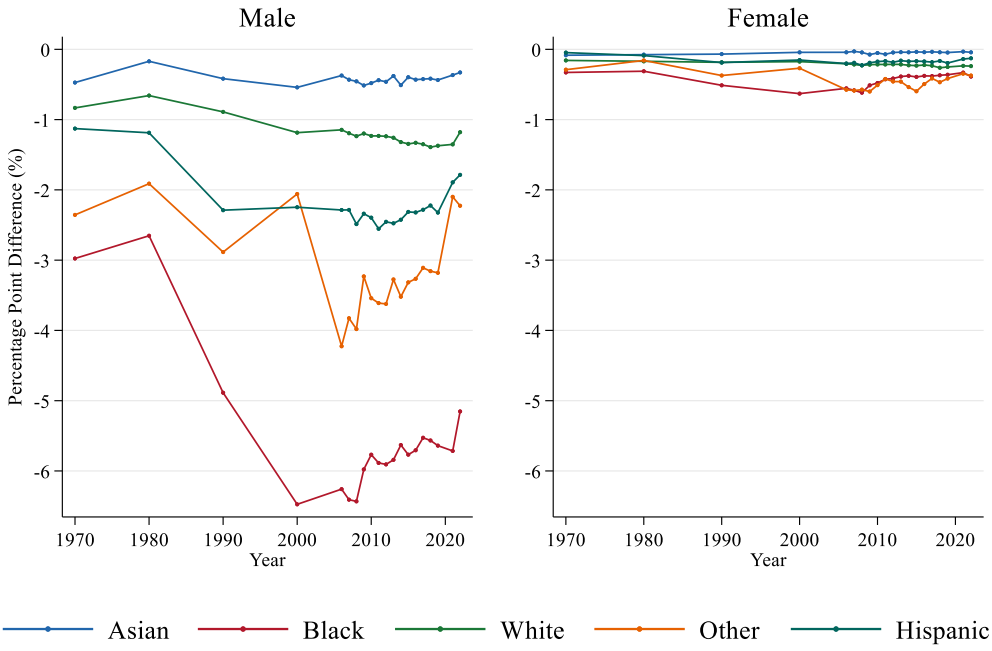
[15] The employment-population ratio is typically reported using data from the current population survey (CPS). That survey excludes the non-institutionalized population. For internal consistency, throughout the subsection I use data from ACS when making comparisons, even when comparing to E-Pop estimates that exclude the institutionalized population.

[16] Since the 1990 decennial census, persons in "institutions" are not distinguished by type of institution (e.g., correctional, mental, elderly). For consistency, I group together all types of institutions reported in the 1970 and 1980 Census. I focus on prime-age workers to avoid the influence of persons who are institutionalized for age-related reasons. That said, these results are likely influenced by the secular decline in residents of psychiatric facilities since the 1970s.

Pop using only the non-institutionalized population. As Figure 5 shows, including institutionalized persons from the denominator decreases the E-Pop much, much more for men than women. For women, E-Pop would decline anywhere from 0.04 percentage point (Asian women) to 0.4 percentage points (Black women) if E-Pop included institutionalized women. In contrast, E-Pop would decline by over 5 percentage points for Black men if institutionalized men were included.

These differences in incarceration rates have important implications for the interpretation of economic inequality. By failing to include the incarcerated population, the official measure for E-Pop overstates the difference in jobholding between men and women. The male-female prime-age E-Pop gap shrinks from 10.6 percentage points to 9 percentage points once institutionalized persons are included in the denominator. This suggests true differences in employment by sex are smaller than officially reported. On the other hand, because of the variation in institutionalization among men, the officially reported employment-population-ratios *underestimate* differences in male E-Pop by race by as much as 4 percentage points.

Figure 5: Difference in Prime-Age E-Pop with and Without Excluding Institutionalized Persons



Source: Decennial Census (1970-2000), ACS (2006 and later). Each dot represents a sample period. All races non-Hispanic unless otherwise noted. Hispanics may be of any race. 'Other' includes persons with multiple races.

Of course, incarceration also affects employment rates indirectly by lowering post-release employment prospects. This channel can be quite large, with Gordon et al. (2023) estimating that first-time incarceration decreases lifetime employment by 6 years for Black men with a high school degree and 10 years for white men with a high school degree. The overall employment effect is somewhat muted by the fact that prisoner populations tend to have lower pre-incarcerations attachment to the labor force. Among people who earned at least an average of about $17,000 in the three years prior to being detained, Mueller-Smith (2015) finds very large

reductions in employment rates with a 24 *percentage point* decline in the probability of being employed two years after release and 39 percentage point reduction for those serving at least two years. Conditional on any time in prison, though, the effect of duration of incarceration on post-release employment rates is less clear with Kling (2006) finding no clear intensive margin effects of incarceration on employment.

2.2.2 Education

Persons with lower levels of formal education are both less likely to participate in the labor force and less likely to have a job conditional on participating.[17] Among young men, Thompson (2021) finds that jobless rates since 1966 have risen particularly quickly for those low levels of formal education. Combined with racial disparities in formal educational attainment, this facially race-neutral trend has resulted in a disproportionate decline in employment rates of young Black men compared to young white men, since Black workers tend to have lower levels of formal education.[18] Cajner et al. (2017) estimate that about four percentage points of the difference in unadjusted employment population ratio gaps come from differences in education.

2.2.3 Discrimination

At least some of the racial disparities in employment are attributable to discrimination. Historical discrimination can have very long-run, even inter-generational, impacts on labor market outcomes. For example, Aneja and Xu (2022) show that federal segregationist policies in the federal civil service during the Wilson administration (1913-1921) reduced employment and earnings of Black workers among otherwise comparable workers and that descendants of affected Black workers attained lower levels of education and earnings than descendants of otherwise similar white workers.

Identifying precisely how much discrimination contributes to differences in employment rates is difficult because employers rarely openly admit to having animus for certain groups anymore, assuming they are even aware of their biases in the first place. Additionally, other factors that vary by race, like the ones mentioned above, may mask differences in employment outcomes. Instead, discrimination is usually inferred based on unexplainable variation in labor market outcomes by race after controlling for other plausible sources of variation.

To get a sense of how much discrimination *could* contribute to differences in employment[19] by race and ethnicity, I estimate Oaxaca-Blinder (OB) decompositions by race and sex for the past 15 years using data from the ACS.[20] These decompositions estimate the share of differences in outcomes due to observable factors and variation that cannot be explained with included covariates. Following Cajner et al. (2017), I estimate employment gaps by year and separately by sex. In each case, I estimate the contribution of state of residence, age, education (whether a person has at least a bachelor's degree), marital status, whether the person was born outside the

[17] See, e.g., BLS' Employment Situation Table A-4; https://www.bls.gov/news.release/empsit.t04.htm
[18] For a discussion of the role of racial differences in educational attainment see Treasury (2023).
[19] Note, estimates of differences in E-Pop use the adjusted E-Pop presented in Section 2.2.1 by including institutionalized persons in the denominator of each subpopulation's E-Pops; I do this to account for differences by race in the currently incarcerated population.
[20] See Blinder (1973) and Oaxaca (1973).

United States, and whether the person is currently institutionalized.[21] The unexplained portion of OB decompositions represents variation that included observables cannot explain, including unobserved discrimination.

Figure 6 shows estimates for prime-age men and Figure 7 shows estimates for prime-age women. Each bar represents the contribution of that factor to the overall difference in employment rates between the two groups and the summation of the bars, positive and negative, gives the overall gap. For example, in 2022, the estimated employment gap between Black men and white men was about -13.6 percentage points, of which -1.6 percentage points could be explained by differences in educational attainment and -5.2 percentage points could not be explained by the included covariates.

As discussed in Section 2.2.1, incarceration affects men of all racial and ethnic backgrounds more than women, but especially so for Black men. After controlling for other observables, differences in incarceration explained twice as much of the difference in employment rates between white men and Black men in 2022 as differences in educational attainment. Differences in incarceration accounted for about 28 percent (-3.8/-13.6) of the Black-White employment gap in 2022. Conversely, most (97 percent) of the higher employment rates of Asian men over white men can be explained by differences in educational attainment.[22] Differences in educational attainment likewise explain a large positive portion of the difference in employment rates for Asian women compared to white women but a large negative portion of the difference for Hispanic women compared to white women.

Prime-age foreign born men have much higher employment rates than prime-age men who are born within the United States while the converse is true for women.[23] This explains large portions of the difference in employment rates for Asian and Hispanic adults since a much larger share of those communities are foreign born compared to non-Hispanic white adults.[24]

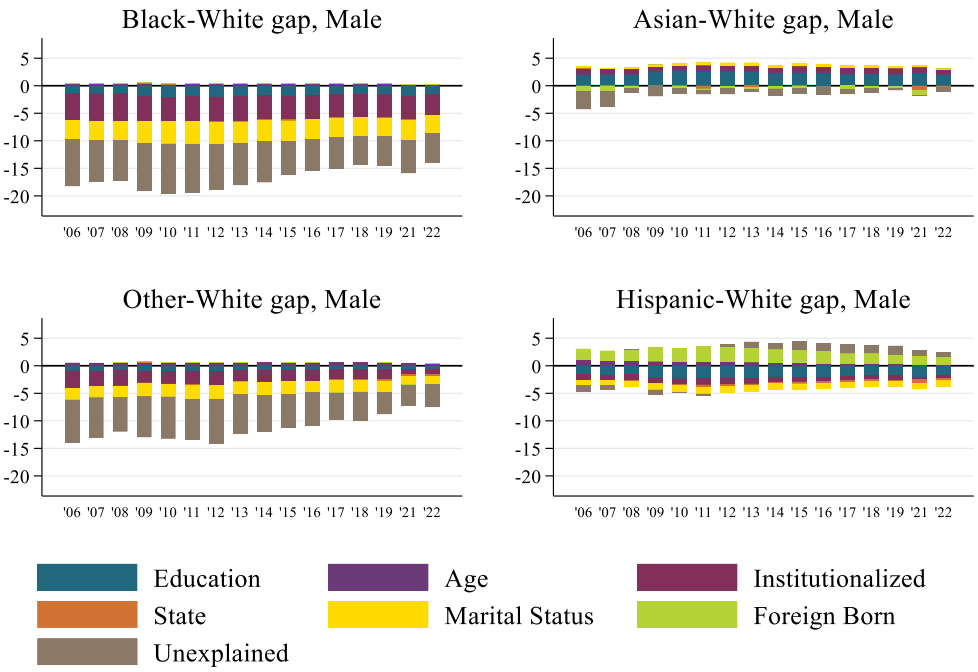
[21] Data limitations prevent me from including the role of former incarceration. I also focus on prime-age workers because incarceration includes any institutionalized person, including nursing homes, which are overwhelmingly populated by the elderly.

[22] Note that since factors can contribute both positively and negatively to the gaps, positive factors may sum to more than 100 percent as a result of mitigating negative factors and vice versa.

[23] Overall, in 2022, foreign born prime-age male employment was 5 percentage points higher than U.S. born employment rates for prime-age men; for women, prime-age employment rates for foreign born women was about 9 percentage points lower.

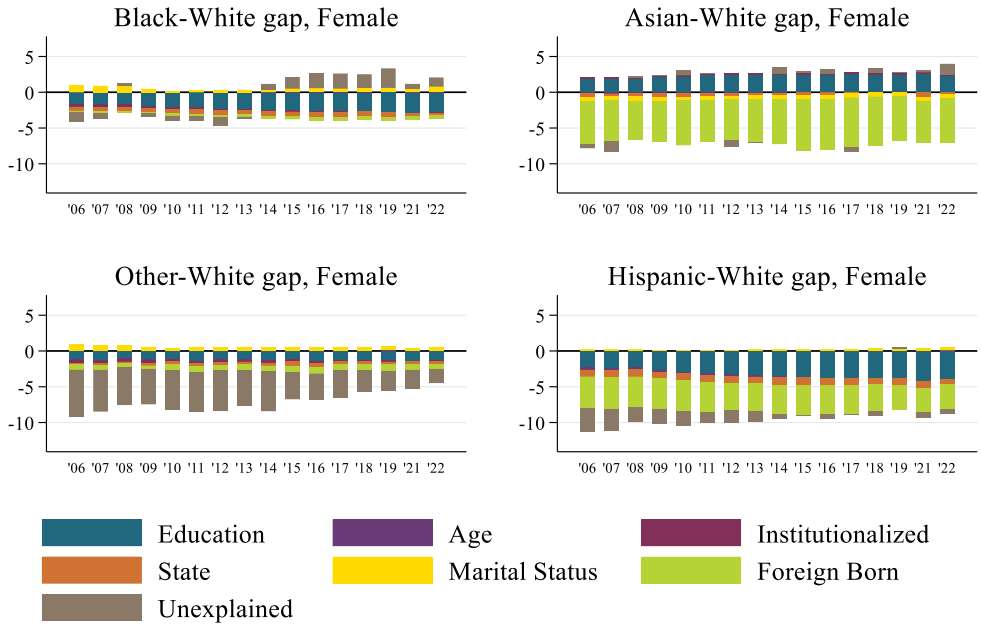
[24] For context, approximately 75 percent of (non-Hispanic) Asian adults, 46 percent of Hispanic adults, 15 percent of (non-Hispanic) Black, and 6 percent of non-Hispanic white adults in my sample are foreign-born as of 2022.

Figure 6: Decomposition of Differences in E-Pop for Prime-Age (25-54) Men



See next figure for notes.

Figure 7: Decomposition of Differences in E-Pop for Prime-Age (25-54) Women



Source: American Community Survey, 2006-2022, via IPUMS. All groups non-Hispanic unless otherwise stated. Hispanics may be of any race. The 'Other' category primarily includes those with 2+ races and American Indians. E-Pop estimates include institutionalized persons in the denominator.

Large portions of differences in employment rates can be explained by observable differences between racial and ethnic groups compared to their non-Hispanic white counterparts, but at least some cannot. The largest and most consistent gap in employment rates is among Black men and persons belonging to the "Others" category, which includes races not elsewhere classified, those who identify as having two or more races, and American Indian or Alaska Natives.[25] For the past roughly ten years, there has been a smaller, though persistent, positive gap (unexplainably higher than expected) for Black women and Hispanic men.[26]

The remaining gap in employment rates reflects factors not controlled for in the decomposition. Such factors include the effect of being formerly incarcerated on current employment and cultural differences in preferences for work (e.g., preferences for single- or dual-earning households among 2+ adult households). Another factor not controlled for: discrimination.

Though *de jure* (state sanctioned) discrimination has been discontinued, there is evidence discrimination in hiring continues. Two popular methods for determining hiring discrimination are correspondence studies and audit studies. Researchers in correspondence studies submit fictitious applications to hiring employers, adjusting only applicant names to align with (stereotypical names of) racial groupings.[27] In audit studies, researchers have real but observationally similar people apply for the same jobs and report their experiences back to the researchers.[28] Both lines of studies typically find that individuals with Anglo-sounding (white-sounding) names are more likely to be called back or hired than individuals with Black- or Hispanic-sounding names.[29] One recent study found that applications with distinctly Black-sounding names were 2.1 percentage points less likely to receive a callback from large employers compared to those with distinctly white-sounding names (Kline and Rose 2022). However, the same study found discriminatory behavior appears to be highly concentrated among a few firms, with the top 20% most discriminatory firms accounting for nearly half of the difference in contact rates.

The precise mechanism driving the evidence of discrimination in hiring described above is poorly understood. Two major, though far from the only, theories of discrimination in the labor market are "taste-based" discrimination and statistical discrimination.[30] Taste-based

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[25] Of this group, in 2022, approximately 71% identified as biracial (identifying with two races, but not more).
[26] I am unable to explain these positive gaps and it is not clear why this shifted during the past ten years. I leave it to future research to say more on this.
[27] For example, in Bertrand and Mullainathan (2004) "Emily" and "Greg" were considered distinctly white-sounding names compared to "Lakisha" and "Jamal", which were considered distinctly Black-sounding names.
[28] See, e.g., Kenney and Wissoker (1994).
[29] For audit studies see, e.g., Keeney and Wissoker (1994); for correspondence studies see, e.g., Quillian, Lee, and Oliver (2020). This finding is not universal – some studies find no differences. See discussion in Stijn (2018). Heckman (1998) provides a critique of early audit-style studies, arguing that these studies cannot eliminate the *variances* in unobservable in the study design, even if they can eliminate mean differences, potentially introducing biases in either direction. Recent studies have attempted to address this critique. See Neumark, Burn, and Button (2016).
[30] See, e.g., Darity and Mason (1998). For simplicity, I focus on these two channels, but others exist. For example, workers may prefer working with members of their own race, implying taste-based *employee* discrimination, or there may be efficiencies between same-race employee-employer matches. See discussion in Giuliano, Levine, and

discrimination involves personal employer prejudice for or against a protected class of workers (i.e., classically racist, sexist, etc.).[31] Statistical discrimination occurs when employers use observable characteristics (such as race and sex) as an imperfect proxy for applicant productivity, since the employer is unable to directly observe the applicant's productivity.[32] These mechanisms have different policy implications. For example, better information on applicant productivity may reduce statistical discrimination, but would not likely reduce taste-based discrimination.[33]

It is often not clear which mechanism dominates. For example, Giuliano, Levine, and Leonard (2009) find that Black managers are more likely than managers of other races or ethnicities to hire Black workers but are unable to find convincing evidence as to whether this is driven by taste-based discrimination (either of the managers or the applicants) or a reduction in statistical discrimination. In other cases, the mechanism seems clearer. Studying the effects of federal affirmative action regulations, Miller (2017) finds that affirmative action continued to increase the share of Black employment even after establishments are deregulated, suggesting the period of regulation reduced statistical discrimination by improving employer screening methods for potential hires. In practice, both mechanisms seem to have empirical support, though neither fully explain racial disparities (or estimated effects of discrimination) in employment (Lang and Lehmann 2012).

3. Differences in Labor Market Experiences Among Employed Workers

Despite differences in employment outcomes, across all major race and ethnic groups the majority of prime-age (25-54) adults are jobholders. As are large segments of young adult (<25) and older adults (>54). That means that differences by race and ethnicity in labor market outcomes among the employed have important consequences for an extremely large share of the population, even though individual experiences are typically less extreme than whether or not a person can find employment.

Differences by race and ethnicity in the labor market are large and persistent. Consider one aspect of these differences: income. As shown in Figure 8, the typical (median)[34] worker in the least highly paid major racial/ethnic group (Hispanic workers) earns less 60% than what the typical worker in the highest paid major racial/ethnic group (Asian workers) makes. The typical non-Hispanic white worker earns about 32% more than the typical Hispanic worker and about 21% more than the typical Black worker.[35] Differences in income carryover across households as

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Leonard (2009). Structural differences may likewise explain important racial disparities in the labor market if, e.g., customers hold racial animus even if employers and employees at a firm do not.

[31] For the seminal paper, see Becker (1957).

[32] For a seminal paper, see Phelps (1972).

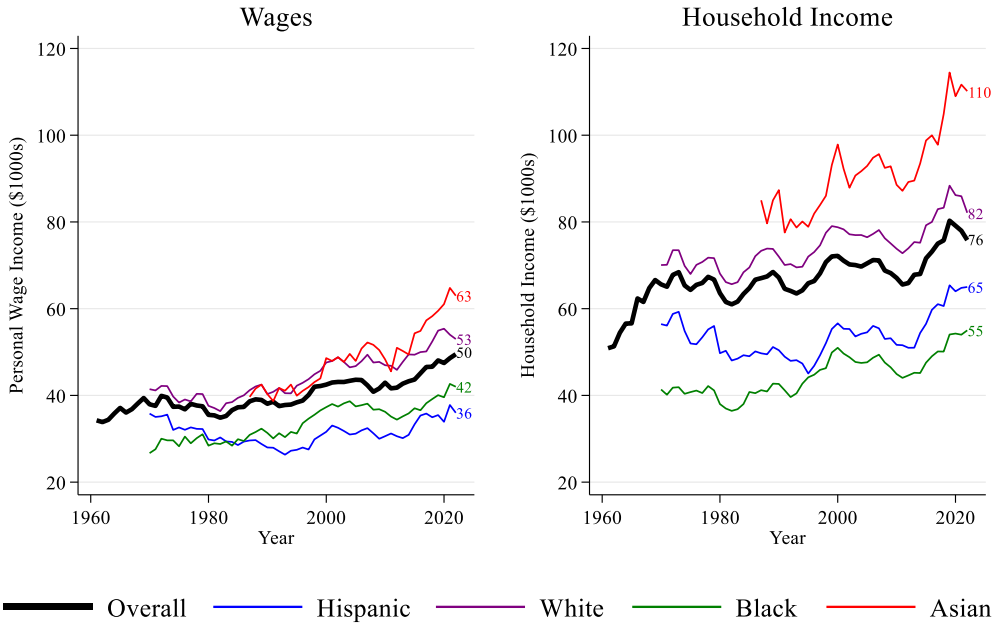
[33] See discussion in Lang and Lehmann (2012).

[34] Figures A.2 and A.3 in the appendix show corresponding graphs for the 25th and 75th percentiles of each group's income distributions.

[35] I note that, while Figure 1 shows large and persistent gaps in in wage and household income, the reasons for these gaps have likely evolved over time (e.g., because of differing levels of immigration). In this section, my focus is on current gaps – I show the time trend purely as a descriptive matter.

well, with the median Asian led household outearning the national median by 45% and Black led households earning 28% less than the national median.[36]

Figure 8: Median Personal and Household Income by Race



Source: Current Population Survey (ASEC, via IPUMS) 1962-2023. All groups non-Hispanic unless otherwise noted. Sample only includes workers with positive earnings. Dollars are expressed in 2022 dollars. Sample excludes persons and households earning less than $1,000 a year. Race of household based on race of householder.

Workers care about more than just wages, though. Non-wage benefits, including non-pecuniary benefits are an important part of job satisfaction. Amenities like job security, workplace safety, ability to telework, and subjective feelings of recognition of effort may be difficult to quantify, but evidence strongly suggests they matter to workers.[37] For example, Mas and Pallais (2017) find workers are willing to give up approximately 20% of their wages to avoid working on a schedule set by an employer on a week's notice. Research suggests that non-wage amenities are increasing in wages, on average; better paying jobs have better non-wage amenities as well (Sockin 2022). Using a set of large-scale stated-preference experiment Maestas et al. (2023) find that differences in one aspect of non-wage amenities, working conditions, exacerbates wage differentials by race.

In the rest of this section to follow, I discuss some important factors behind variation by race in earnings and experiences of being employed.

[36] For the purposes of this analysis, I define the "race" of a household by the race of the householder in the Current Population Survey. Especially in early years of the survey, the default householder was the male, if present. This metric may become less reliable over time as households become more racially diverse (meaning household head may not match the race of others in the house).

[37] Sullivan and To (2014) find about a third of the gains from job-switching are attributable to non-wage factors.

3.1. Occupational Segregation

The occupations people work in vary by race and ethnicity. Table 1 shows how some workers are overrepresented, relative to their share of total employment, in 22 occupational groups. For example, Hispanic workers hold 50 percent of farming, fishing, and forestry jobs despite accounting for less than 20 percent of total employment. Likewise, Black workers make up about a quarter of healthcare support occupations despite accounting for only about an eighth of total employment. White workers are disproportionately likely to hold jobs in management and legal occupations and Asian workers are disproportionately likely to hold jobs in computer and mathematical science occupations.

Table 1: Racial distribution of workers across demographic groups.

	Share (%) of workers in occupation that are…					Median Income
Occupation	White	Black	Asian	Other	Hispanic	($1000s)
Total, all occupations	60	12	7	2	18	50
Legal	70	11	7	1	11	100
Computer and mathematical science	56	7	24	3	9	98
Architecture and engineering	68	6	14	2	10	95
Management	70	9	7	2	11	81
Business and financial operations	67	10	9	2	11	73
Healthcare practitioner and technical	66	13	10	2	9	70
Life, physical, and social science	62	9	17	3	9	70
Installation, maintenance, and repair	66	7	3	2	22	54
Community and social service	61	18	4	2	14	52
Protective service	58	22	2	3	15	52
Arts, design, entertainment, sports, and media	69	9	7	2	12	51
Education, training, and library	70	10	6	2	12	50
Construction and extraction	49	7	1	2	40	46
Production	55	13	6	2	25	43
Office and administrative support	60	14	5	3	18	40
Sales and related	64	11	6	2	17	40
Transportation and material moving	48	19	5	3	25	37
Healthcare support	45	23	8	2	22	32
Farming, fishing, and forestry	45	3	1	1	50	30
Building and grounds cleaning and maintenance	40	13	3	2	42	29
Personal care and service	55	11	10	3	20	26
Food preparation and serving related	48	12	7	3	29	24

Source: CPS-ASEC (via IPUMS), 2023. All groups are non-Hispanic unless otherwise specified. ‘other’ includes all non-Hispanic racial groups, including those of multiple races. Sample includes employed workers with positive earnings. Rows may not sum to 100% because of rounding.

One way to determine the severity of occupational segregation is by asking the question: how people would need to switch jobs so total employment for each occupation remained the same, but each occupation had employment shares equal to their share of total employment? To answer this question, I follow the methodology used by Karmel and MacLachlan (1988), Silber (1992), and Alonso-Villar, Del Rio, and Gradín (2012).[38] Using this measure, the most segregated labor markets with two equally large shares of employment, would receive a value of 0.5 while the most egalitarian labor market would receive a value of 0.[39] Using data from the 5-year 2022 ACS, across 529 occupational codes and 5 racial/ethnic groups (non-Hispanic white, non-Hispanic Black, non-Hispanic Asian, non-Hispanic Other, and Hispanic), I estimate about an eighth (12 percent) of jobs would need to switch to achieve an egalitarian distribution of jobs across all racial and ethnic groups. For context, using a similar methodology, I find about a quarter (24 percent) of jobs would need to switch to achieve an egalitarian distribution of jobs between men and women. This suggests a meaningful, though not extreme amount of occupational segregation by race and ethnicity.

One important implication of differences by race and ethnicity in occupational sorting is the impact it has on wage earnings inequality.[40] There is a positive correlation between share of jobs held in an occupation by Asians and white workers and earnings compared to a negative correlation for the share of employment made up by Black and Hispanic workers and earnings. This relationship is not solely attributable to differences in other observable characteristics, such as educational attainment. For example, Daly, Hobijn, and Pedtke (2017) estimate that approximately a third of the earnings gap between Black and white workers is attributable to differences in occupation and industry of employment after controlling for common other sources of variation in earnings, including educational attainment.

Some occupational sorting may be due to differences in preferences, but at least some is not.[41] Hsieh et al. (2019) document how sex and racial restrictions in the labor force artificially inflated shares of white men in high-skilled professions, such as doctors and lawyers. Likewise, Aneja and Xu (2022) document the distortionary effects that explicitly segregationist policies during the Wilson administration had on the composition of the federal workforce.

Explicitly segregationist policies have now been outlawed, but that does not mean they no longer have an impact on the labor market. A child's occupational choice is partially a function of their parent's occupation and socioeconomic status. The observation that sons of doctors are more

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[38] Formally, the segregation index (*IP*) is defined as $IP = \frac{1}{2}\sum_g \sum_j \left| \frac{c_j^g}{T} - \frac{c^g t_j}{T^2} \right|$ where c_j^g is the employment (c) of racial or ethnic group *g* in occupation *j*, t_j represents total employment in occupation *j*, and T represents total employment across all occupations.

[39] The segregation index depends on both differences in distributions and relative sizes of each group – the maximum value is less than .5 where one group represents substantially more than half the total population.

[40] Erosa et al. (2024) show that a significant share of between-occupation earnings inequality is driven by greater hours worked among higher wage occupations. That is, occupations with higher hourly also often have higher hours worked, meaning earnings inequality is greater than (hourly) wage inequality.

[41] For example, Maestas et al. (2023) find some differences in self-reported preference for work conditions by race (e.g., ability to set own schedule), but widespread agreement along other dimensions (e.g., desirability of telework).

likely to become doctors has been observed since at least the 1950s.[42] A 2011 study found 40% of Canadian sons at some point in their lives work for an employer with which their father had worked (Corak and Piraino 2011). The intergenerational transmission of occupations may be due to several factors, including parent access to social networks (Mogstad and Torsvik 2023) and human capital investments from parent to offspring (Lee and Seshadri 2019). More broadly, a person's social network may influence the jobs they select into if they rely on that network to find jobs. Data from the Bureau of Labor Statistics suggests that reliance on such networks is particularly important for Hispanic and Asian workers (Bureau of Labor Statistics, 2024a).

Occupational segregation may arise because of other factors as well, including self-selection into certain occupations because of perceived differences in discrimination between occupations (e.g., Lundberg and Startz 2007). Economic theory suggests, for example, that job seekers facing discrimination will tailor their searches in ways that minimize encounters with discriminatory employers (Prager and Pedulla 2015). The extent to which this form of self-selection influences occupational segregation depends on the degree to which workers distinguish levels of discriminatory behavior by occupation and how strongly they avoid discriminatory employers. Hellerstein and Neumark (2008) explore another reason for continued occupational segregation: language skills. They find that differences in English speaking explains a substantial portion of workplace segregation, especially between non-Hispanic white and Hispanic workers.

3.2. Geographic Variation

Estimates of racial and ethnic earnings gaps suggest that geographic variation, at least at the state level, does not explain much of the difference in earnings between racial groups.[43] Nonetheless, within-state variation may explain differences in how workers interact with and benefit from the labor market.

3.2.1. Spatial Mismatch

Spatial mismatch in the labor market may occur when there is a wedge between where job openings occur and where workers willing to do those jobs live. This mismatch can result in longer unemployment duration as well as a skills mismatch wherein workers have skills demanded by firms outside the geographic reach of the worker. These mismatches may result in workers taking jobs that are available, but less aligned with their skills and, as a result, resulting in fewer earnings. Andersson et al. (2018) find that low-income Black and female workers are particularly sensitive to job accessibility measures than white and male workers.[44] That said, Hellerstein, Neumark and McInerney (2008) find that space alone plays a relatively small role in explaining the relatively low employment rates of Black men.[45] Spatial mismatch is much more likely in an economy where some workers' mobility is restricted (e.g., redlining) (Brueckner and Martin 1997).

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[42] See discussion in Mogstad and Torsvik (2023); see also Lentz and Laband (1989).
[43] See, e.g., Daly, Hobijn and Pedtke (2017).
[44] Andersson et al.'s measure of job accessibility is constructed based on expected commuting times. The larger the commuting time to the set of possible jobs for a given Census tract, the less accessible jobs are for people living in that census tract.
[45] See also Marinescu and Rathelot (2018). That said, the authors do not examine the impact on earnings. It may still be that earnings are negatively impacted.

3.2.2. Cost of Living

Earnings vary by race, but so does the geographic distribution of workers. Since cost of living varies by location, interpretation of racial disparities in earnings may be textured by racial differences in cost of living; higher earnings do not necessarily mean workers are better off if their cost of purchasing an identical bundle of goods is proportionately higher as well.

To get a sense for differences in cost of living by race and ethnicity I use estimates from the Atlanta Federal Reserve's Cost of Living Database on the dollar amount needed to afford basic needs.[46] I combine this with population estimates by county for each major racial group. Aggregating this across all counties and racial and ethnic groups gives a populated-weighted composite measure of cost of living by race.[47] Based on this metric, I find that the average family of four with one working adult and one non-working adult in 2021 requires about $41,000 a year to meet basic needs. When weighing each race by share of households across counties, I find that non-Hispanic white workers, on average, have a lower-than average cost of living than the national average (97%) as do Black workers (98%). Meanwhile, Hispanic workers have slightly higher cost of living, on average, than the national average (105%) and Asian workers have, by far, the highest average cost of living (119% the national average). The higher average cost of living is reflective of the fact that where Asians reside is highly geographically concentrated in some particularly high-cost metro areas; in 2020, 30% of Asians lived in just three metro areas: New York, Los Angeles, and San Francisco (Brookings 2022). In some sense, the higher earnings among Asian workers are partially 'absorbed' by higher cost of living in the locations Asians are likeliest to reside.

Economists have long recognized that differences in cost of living and wages across geographies may reflect different amenities offered by those locations (e.g., Roback 1982). For example, locations with temperate climates (an amenity) may be valued enough that workers are willing to pay more to live there. Accordingly, just because some subpopulations have higher costs of living does not necessarily mean they are worse off in utility terms. At the same time, workers in highly skilled occupations might have few options for where to work – suggesting they move to a location despite local amenities, not because of them.[48]

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[46] For documentation about the Cost of Living Database see: https://www.atlantafed.org/-/media/documents/economic-mobility-and-resilience/advancing-careers-for-low-income-families/policy-rules-database/cost-of-living-database-technical-manual.pdf.

[47] The Cost-of-Living Database constructed estimates based on family size. For simplicity, the measures I present are based on the cost of living that would be required to house a "traditional" family of 4 with one working adult, one non-working adult, and two kids. It is plausible that variation in average age and family composition would affect the results I discuss below. Ideally, I would use a metric other than counties, such as PUMAs, but I was not able to find such estimates. There are estimates at the MSA level, but MSAs are not geographically complete – making constructing a meaningful compositive metric difficult. Still, because there is likely large variation in cost of living within counties, estimates below should be appropriately caveated.

[48] For example, a quarter of workers classified as 'economist' live in the metro area associated with the District of Columbia, despite representing less than 2% of all employment nationally. Washington-Arlington-Alexandria, DC-VA-MD-WV - May 2023 OEWS Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates (bls.gov); Census data (table 14) suggests approximately a quarter of inter-county moves are for employment-related reasons.

3.2.3. Commuting

Most employed workers do not work fully from home, meaning they have to travel to work. For a large portion of workers, commuting is a disamenity.[49] On average, Black commuters have longer commutes than white workers. Fu, Rolheiser, and Severen (2023) document that this gap has declined in recent decades, though it continues to persist. Controlling for factors such as commuting zones[50], occupation, and demographics (sex, age, education, etc.) they find that Black workers' commutes are still statistically longer than white workers in large cities. Importantly, Black workers are not fully "compensated" for their longer commutes via lower housing costs; there remains a positive communing time gap even after conditioning on housing prices.

Of course, those who can telework, have no commute on the days that they work from home. Surveys suggest that workers consider the ability to telework to be an amenity. A 2023 survey by Deloitte showed a majority (56%) of those surveyed preferred a work schedule with at least half the time remote compared to working mostly or exclusively in person. Here, too, there is a racial disparity, both in access to and take-up of teleworking. Non-Hispanic White workers are both more likely to have jobs that *could* be done from home and more likely to actually work from home, at least some days (Dey et al. 2020). Evidence presented by Maestas et al. (2023) suggests that differences in teleworking between white workers and workers of other races are not due to differences in preferences.[51] Thus, non-Hispanic white workers appear disproportionately more likely to enjoy an amenity that appears valued by most workers.

While differences in commuting and working from home do not directly implicate earnings, they should color the interpretation of those differences both in concretely monetizable ways (e.g., it costs money to commute, which is often not reimbursed) as well as more intangible, but nonetheless important ways, such as the role it has on work-life balance.

Section 3.3. Job Switching and Monopsony Power

Switching jobs can be an effective way for workers to increase their wage earnings (Faberman and Justiniano 2015). Wage growth for job switchers is, on average, several percentage points above those who stay at their jobs (ADP 2024). Of course, the decision to switch jobs is not random – many people switch jobs precisely because of dissatisfaction with their current pay. (e.g., Parker and Horowitz 2022).

Job switching is costly, though. Job switches may involve a transitory period of unemployment or moving costs. Workers may also worry that that their diminished seniority at their new position may make them more vulnerable to layoffs, which may be a disamenity for risk-averse workers.[52] In a perfectly competitive labor market without frictions or switching costs, switching

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[49] Harter (2023) found a positive correlation between commutes, especially long commutes, and elevated levels of stress and anger. A particularly colorful survey in 2021 found that 40% of workers would rather clean their toilets at home than commute to work (Segal 2021).

[50] Commuting zones geographic units designed to reflect where people reside and work. They consist of up clusters of counties that in some cases cross state borders.

[51] Maestas et al. (2024) do not distinguish by ethnicity, therefore "white" here includes Latinos who identify as white.

[52] Empirical research suggests most workers are risk averse. See, e.g., Holt and Laury (2002).

would be costless and workers would switch jobs whenever another job offered better pay. However, switching costs create a wedge by which workers are willing to stay at their current job despite better pay elsewhere – allowing firms to exercise monopsonistic power (market power in the labor market).[53] Monopsonistic market power may have a racially disparate impact (even absent employer animus) when switching costs are relatively larger for some communities than others. Stelzner and Bahn (2022) formalize this intuition with a model wherein low-wealth workers (of whom a disproportionate share are racial and ethnic minorities) are more vulnerable to firms exercising their monopsony power. Since wealth increases the ability of workers to weather temporary shocks in the job changing process, higher wealth individuals are more likely to switch. Firms, knowing this is the case, are able to exercise greater monopsonistic power against low-wealth individuals than higher-wealth individuals.

An implication of Stelzner and Bahn's monopsony power model is that, all else equal, lower-wealth communities will tend to have lower rates of job-to-job (J2J) transitions. Controlling for race-specific differences in job-to-job flows is beyond the scope of this paper. But, using aggregate statistics from Census' Longitudinal Household Employer Database (LEHD) I find weakly suggestive evidence that exercise of monopsonistic power does not tend to disproportionately prevent J2J transitions for low-wealth communities. Using estimates from the first quarter of 2023, I find that J2J transitions are highest for non-Hispanic Black workers (133% the national average) and non-Hispanic white workers (110% of the national average), lowest for Hispanic workers (98% of the national average) no different than the national average for Non-Hispanic Asian workers. In contrast, according to the 2022 Survey of Consumer Finances, median household wealth is highest for Asians, followed by White, Hispanic, and Black households respectively (Aladangady et al. 2023). I characterize this as weak *evidence* against racially disparate differences in monopsonistic power because there are likely confounding factors correlated with race that influence J2J transitions and heterogeneity between racial groups masked by the aggregate flows. For example, younger workers are more likely to make J2J transitions and Black and Hispanic workers are more likely to be young.[54] Still, these estimates suggest that racially differential exposure in monopsonistic power is likely not one of the primary contributors to aggregate racial earning gaps.[55]

3.4. Discrimination

As explained in Section 3.2.3, uncovering evidence of explicit discrimination in the labor market, especially in the modern era, is difficult as economic agents (employers, customers, etc.) rarely broadcast their intentions.[56] High-quality estimates of the effects of discrimination on

[53] For a review of this literature generally, see Treasury (2022).
[54] According to LEHD data, for example, in the first quarter of 2023, people aged 25-34 were more than twice as likely to have a J2J transition as those aged 45-54 and those aged 19-21 were more than five times as likely to have a J2J transition those aged 65 and older.
[55] One possibility is that there are competing sources of monopsony power. For example, a larger share of non-Hispanic white workers are bound by a non-compete agreement, which are more typical for college educated workers and which may also reduce J2J transitions.
[56] In section 2.2.3 I show estimates of an Oaxaca-Blinder decomposition to level-set how much of the racial employment gap can be explained by observables versus unexplained portions that may be indicative of discrimination. However, a limitation of such regression decomposition approach is that observables themselves may be correlated with discrimination. I view this problem as more problematic in the context of the wage gap than

wages rather than on employment is even more difficult because many of the vignette-type studies (e.g., fictitious applicants) cannot be easily reproduced in a setting where a manager already knows their employee (Neumark 2018). And when evaluating promotion decisions, credible studies must control for measures of worker performance, which is often difficult, subjective, and varies by occupation. Because of these challenges, studies examining discrimination among employed workers are often highly context-specific, limiting the external validity of the estimates.[57]

One form of discrimination among employed workers occurs when a worker is differentially evaluated because of their race or ethnicity. Although this form of discrimination does not necessarily directly implicate earnings, performance evaluations may be used for promotion decisions, bonuses, etc. that do impact compensation directly. A difficulty in testing for this form of discrimination empirically is that the evaluator (e.g., a boss) is likely not randomly selected. In two studies Parsons et al. (2011) and Price and Wolfers (2010) examine the role of race of the evaluator on performance evaluations of elite athletes (baseball and basketball respectively). Studying elite athletes provide an ideal research setting because researchers can robustly control for objective measures of performance and the evaluators are plausibly exogenously determined with respect to the players, leading to highly credible potential inferences of race-based discrimination. Both studies find that referees (umpires) are more likely to make negative evaluations (strikes or foul calls) when the referee and the players were of a different race. One of the papers, Parsons et al. (2011), finds racialized differences in evaluation substantially diminish in the face of greater monitoring of the referees, suggesting a potential tool for decreasing discrimination of evaluators. That said, the context of professional sports is likely idiosyncratic, which makes generalizing these results to other contexts difficult.

Another form of discrimination among employed workers occurs when certain groups of workers are not recognized for their performance. In a recent study, Rim et al. (2024) find evidence that white police supervisors in the Chicago Police Department are less likely to nominate Black officers relative to other officers, conditional on their work performance.[58] The authors argue this gap is more consistent with racial bias (taste-based discrimination) than statistical discrimination. In support of this interpretation, they show that white supervisors are more likely to nominate white officers for awards even after reviewing material for annual reviews, a period during which they show supervisors learn about officer performance; more complete information does not

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the employment gap because many of the factors that affect wages also may themselves be influenced by discrimination. For example, selection into different occupations by race clearly has an impact on wages. Such selection itself may be the result of discrimination, though. As such, a regression decomposition exercise that attempted to control for occupation could mask the effects of discrimination.

[57] Uncovering discrimination among employed workers is made more difficult by the numerous channels by which discrimination may occur and effects can be cumulative: a worker who is not recognized for their achievements early in their career because of discriminatory actions may be passed over for later promotion by a non-discriminatory manager relying on the worker's overall record.

[58] To avoid issues of endogenous supervisor-supervisee relationships, the authors exploit the fact that officer's supervisors change every January, and the supervisor-supervisee relationship is not a function of officer performance. In this context, arrests is used by the authors as a measure of performance. I am skeptical that this measure truly captures the 'quality' of a police officer – as the authors note, arrests may even be a biased measure of quality. That said, number of arrests do appear to be highly relevant to supervisor decisions in assigning awards.

close the nomination gap (conditional on performance), as a theory of statistical discrimination would suggest.

Discriminatory employers may dismiss (fire) workers of different rates at differential rates. Giuliano, Levine, and Leonard (2011) provide suggestive evidence that managers tend to have own-race bias.[59] Using data from a large retail chain, they find that Asian, Hispanic, and Black employees are less likely to be dismissed by a manager of the same race. The strongest effect they find are for own-race dismissals for Black employees, with a 19 percent lower dismissal rate of Black employees under Black managers. This own-race bias is suggestive of racially disparate treatment by managers, but of limited use in determining if the bias results in managers firing "too few" workers of their own race or whether they are firing "too many" workers of other races.

Own-race preferences also appear to play a role in retention of employees. Studying teachers in Tennessee and Missouri, Bartanen and Grimsom (2023) find that principals increase the proportion of same-race teachers in their schools by about 2 percentage points through a combination of greater hiring and retention of same-race teachers. They estimate that having a same-race principal reduces the annual probability of a teacher leaving the school by about 2.5 percentage points, both because of lower transfer rates and lower transitions out the state school systems altogether. Survey evidence presented by the authors suggest that having a same-race principal improves job satisfaction among teachers. Here, too, the interpretation of these results is ambiguous with respect to whether this own-race preferencing indicates discrimination or something less sinister; discriminatory behavior of different-race principals against their employees could explain the difference in retention and job satisfaction but so could a teacher's own taste-based preference for being supervised by someone of their own race.

3.5. Differential Burdens of Working

A worker's net benefits from working can be thought of as the difference between the benefits of their work (e.g., salary, fringe benefits, personal satisfaction) net their costs of working (e.g., effort, lost leisure time). The earnings gap focuses on the obviously policy relevant topic of racial disparities in monetary *benefits* to work. In this section I explore some exemplars that show how the *costs* of working also differ by race.

3.5.1. Perceived or Anticipated Discrimination

As discussed in Section 3.4, there is reason to believe that discrimination likely plays a role in racial disparities in promotion and retention of workers. But even if that were not the case, the *perception* or *anticipation* of discrimination may nonetheless have material consequences. For example, anticipated discrimination may lead to a self-fulfilling prophecy wherein workers of the anticipated discriminatory class invest less in human capital because of worse perceived labor

[59] I characterize this evidence as suggestive rather than causal because the authors are not able to condition on performance metrics of employees, unlike other studies referenced in this section. And estimates are somewhat sensitive to whether the manager is the manager that hired the employee, which could suggest some selection biases in the initial employee-employer match (e.g., they had a pre-existing relationship, which might be more likely among same-race individuals). Additionally, the authors are unable to control for potential selection into management changes.

market opportunities (Fryer, Goeree, and Holt 2005). And perceived racial bias in promotions may erode workplace culture and reduce employee retention even when promotional decisions are free of bias (Ruebeck 2024).

Beyond direct labor market impacts, perceived discrimination, real or not, can significantly affect the well-being of the individual subjected to it. In the context of anticipated sex-based discrimination, for example, Charness et al. (2020) show that anticipated discrimination affects how workers present themselves to employers. Doing this requires effort and may be cognitively costly. Prager and Pedulla (2015) show that Black workers may respond to perceived discrimination by casting a wider net when searching for new jobs, which may require greater effort than a targeted search. There is some suggestive evidence that such psychological stress may even be statistically associated with adverse health effects (James et al. 1992).

3.5.2. Getting to Work: Interaction with Law Enforcement

Black and Hispanic persons are pulled over by police more often than non-Hispanic white persons, even after controlling for precinct variability and race-specific estimates of crime participation (Gelman, Fagan, and Kiss 2007). One common interaction with police is because of traffic violations, which may occur during commutes.[60] Goncalves and Mello (2021) present compelling evidence of police officer bias during routine stops. Specifically, using police officer level data, they show police officers are more likely to use their discretion in discounting penalties for speeding violations to the benefit of white drivers; white drivers are much more likely (and statistically improbably) to be cited just below discontinuous jumps in penalties than non-white drivers.[61] They show this practice is widespread – with an estimated 40% of officers engaging in such discriminatory behavior. Given a large portion of driving time is spent on commutes, this disparity highlights how the costs of getting to and from work are often larger (monetarily and cognitively) for racial minorities than non-minority communities.

3.5.3. Childcare

Childcare, especially for young children, is expensive – both in terms of time and monetary costs. The Bureau of Labor Statistics (2024b) estimates that parents with kids under the age of 6 spend an average of 2 hours a day taking care of their children and Treasury (2021) estimates the average family with at least 1 child under the age of 5 would have to use about 13% of their family income to pay for childcare.

Meeting childcare needs can burden workers along several dimensions. At the extreme, childcare can affect the extensive margin of labor supply (e.g., one parent stays at home), but the effects can be more subtle. Parents may miss work, take leaves of absence, or cut back on hours worked to care for their children. Data from the National Survey of Children's Health suggest these burdens are felt more acutely by non-white households.[62] About 9 percent of the families of non-

[60] See, e.g., Harrell and Davis (2020) (Table 2), which shows approximately a third of people with police contact in 2018 did so because of a traffic stop, and the majority of police-initiated contacts occurred in such a manner.
[61] In their state of analysis (Florida) there is a discontinuous jump in penalties at 10 miles over the speed limit. The authors show white workers are much more likely to be cited for driving 9 miles over the speed limit than minority drivers.
[62] https://www.childhealthdata.org/browse/survey/results?q=10711&r=1&g=1114

Hispanic white children reported quitting a job, not taking a job, or greatly changing their job because of problems with childcare of their 0–5-year-old in 2022 compared to 14% for Hispanic children, 19% for Black children, and 12% for Asian children.[63]

Meeting the burdens of childcare is somewhat easier in a two-parent household than a single parent household. Single-parent households are much more common for Black and Hispanic households.[64] Households led by single mothers are especially common for Black households, in part due to the disproportionate impacts of incarceration of Black men reported in Section 2. Bertrand, Goldin, and Katz (2010) show that women becoming mothers explains a large portion of the gender earnings gap and Goldin and Katz (2016) argue a key reason for the "motherhood penalty" is parenthood requires flexible work scheduling, which is penalized in many occupations. For single-parent households, the need for this type of workplace flexibility is likely even more acute as there is not another adult that can "pick up the slack." Thus, the fact that single-parent households are more common for people of color disproportionately translates into greater burdens associated with being a working parent.

3.5.4. Compensating Wage Differentials?

When jobs are associated with strong disamenities, workers may demand higher wages to compensate for the dis-utility of having to burden those disamenities at work (e.g., Rosen 1986). At least some research suggests non-wage factors play a large role in occupational choice; Taber and Rejlin (2020) estimate such factors are the decisive factor in about one third of job transitions. If wages are observed but disamenities of work are not, earnings inequality measures may over- or under-state true amenity-adjusted inequalities. In this subsection, I show Hispanic workers are much more likely to work in occupations where compensating differentials would be likely and, as a result, measures of earnings inequality actually underestimate disamenity-adjusted earnings inequality.

One extreme form of a job-related disamenity is mortality risk and risk of serious injury. While deaths are relatively uncommon in all fields, they are much more common in some, particularly in transportation, agricultural, and construction-related occupations (see Table 2 below). As noted in Section 3.1, there are differences by race and ethnicity in occupational selection, which raises the possibility that compensating differentials differ by race as well. BLS (2023) find that workplace fatalities were more prevalent among Black and Hispanic workers compared to non-Hispanic white and Asian workers.

Table 2: Distribution of race and ethnicity among high-fatality occupations.

Occupation (fatalities in 2022)	Hispanic	White	Asian	Black	Other
All occupations (5486)	18.2	60.6	6.0	11.4	3.8

[63] Note: the claim here is not that this is a causal relationship, but rather that there is a disparate impact (greater burden) of working for members of racial and ethnic minorities. One likely causal mechanism for this is related to income since higher income households may be able to offset the burdens of childcare by employing help (e.g., sending kids to day care or hiring a babysitter). Data from the same survey show families below 100 percent of the federal poverty line are about 7 percentage points more likely to report having these difficulties than families at or above 400 percent of the federal poverty line.

[64] See discussion in Section 4.

Driver/sales workers and truck drivers (1115)	22.5	54.7	2.8	16.7	3.4
Construction laborers (320)	46.7	42.0	1.8	6.5	3.0
Grounds maintenance workers (222)	43.0	45.2	1.3	7.7	2.8
Laborers and material movers (182)	32.9	43.5	3.3	16.8	3.5
Farmers, ranchers, and other ag. managers (148)	8.1	86.9	1.3	1.1	2.5
Miscellaneous agricultural workers (146)	54.7	39.1	1.2	2.9	2.0
Police officers (116)	16.1	64.1	2.5	13.4	3.9
First-line supervisors of construction trades and extraction workers (113)	24.6	66.8	1.1	4.4	3.0
Roofers (105)	56.9	35.2	0.8	4.4	2.7
Maintenance and repair workers, general (95)	20.3	63.1	3.4	9.5	3.7
Carpenters (95)	35.8	55.6	1.4	3.9	3.3

Source: Census of Fatal Occupational Injuries and 5-Year 2022 ACS (accessed via IPUMS). All races and ethnicities non-Hispanic unless otherwise stated. Cells represent percentages of employment per occupation. Rows may not sum to 100 percent because of rounding.

Approximately a fifth of all occupational deaths in 2022 were the result of deaths of driver/sales workers and truck drivers, an occupation that is slightly overrepresented by Black and Hispanic workers relative to their share of employment. The overwhelming major (80%) of deaths among that occupation group was due to transportation incidents (BLS 20203). Of course, many jobs require driving. Overall, about 40% of all job-related deaths occurred because of traffic incidents and the share of workers that regularly operate a vehicle is roughly equal across races and ethnicities at about 10%, with the notable exception of Asians for whom only about 6% regularly operate a vehicle.[65]

The remaining 60% of job-related deaths occurred because of other factors, including on-the-job violence (animal or human); slips, strips, and falls; fires; contact with objects or equipment; and exposure to harmful substances and environments. It is plausible that compensating differentials would be larger for jobs where such risks are larger than jobs where the risks of traffic incidents are large because of cognitive biases that affect perception of risk.[66] For example, Gingerenzer (2004), discusses "dread risks" wherein people avoid low-probability high-consequence (and salient) events (such as major terrorist attacks) even when higher-probability, but more mundane events (like traffic accidents) are likelier to result in death or injury. Workers are unlikely to demand, in effect, 'hazard pay,' if they systemically underestimate the likelihood that certain risks (such as traffic accidents) will occur.

[65] This statement is made by merging data from O*NET (version 28.2) and 5-year 2022 ACS. I define an occupation are regularly requiring a worker to operate a vehicle if workers are required to work inside an enclosed vehicle or equipment (work context element 4.C.2.a.1.f) at least once a week. I merge these definitions to the ACS (averaging occupations where aggregations were necessary) and find that 10.2% of Black workers, 10.3% of Hispanic workers, 10.0% of non-Hispanic white workers, 5.6% of Asian workers, and 9.3% of workers not otherwise classified regularly operate a vehicle under this definition.

[66] For an early example, see Tversky and Kahneman (1974).

To determine which groups are most exposed to hazardous working conditions other than transportation risks, I merge demographic data from the ACS with occupational work context data from O*NET.[67] Specifically, I define hazardous occupations as those where workers are exposed to hazardous equipment or conditions on at least a weekly basis.[68] I find Hispanic workers are more likely to face such hazards at work compared to any other race and ethnic group: 12% for Hispanic workers compared to 8% for the workforce overall and 4 percentage points higher than the next highest group, non-Hispanic white workers.[69]

Hispanic workers have the lowest earnings of the major race and ethnic groups considered in this paper (see Figure 8). But even this likely underestimates the disparity in net benefits of working for Hispanic workers compared to other groups. Extant earnings already partially reflect compensation for the greater exposure to the disamenity of higher mortality and severe injury risk that Hispanic workers face in their jobs.[70] As a result, if earnings were 'disamenity-adjusted,' the earnings gap between Hispanic and, e.g., non-Hispanic white workers would be even larger than empirically observed.

4. Early Childhood Factors

In the previous two sections, I discussed factors impacting employment and experiences of being employed among adults. In this section, I take a step back, discussing how the labor market experiences of adults (earnings, employment, etc.) are extremely influenced what happens prior to aging into the working age population.[71] Many of the racial disparities discussed in the previous two sections begin early in life. Parental income alone strongly predicts later-life income – Chetty et al. (2014) estimate that a 10 percentile increase in parent income is associated with a 3.4 percentile increase in a child's (later life) income. And Treasury (2023) find that pre-college characteristics such as family socioeconomic status, that vary by race strongly predict college attendance and completion.[72] The predictive power of these metrics implicates important policy priorities because they strongly suggest that significant portions of inequality is generated by lack of equal opportunity.

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[67] This process is the same as what I outline in footnote 65.

[68] Specifically, these correspond to work contexts 4.C.2.c.1.d and 4.C.2.c.1.e.

[69] I find hazardous conditions affect 4.1% of non-Hispanic Asian workers, 6.4% of non-Hispanic Black workers, 8.1% of non-Hispanic white workers, 7.3% of non-Hispanic other workers, and 12.2% of Hispanic workers. I have conducted sensitivity analysis by including other hazardous conditions, such as exposure to heights and wearing of protective equipment (both common and specialized). In all cases, Hispanic workers are much more likely to be exposed to hazardous conditions. These differences are statistically different from one another. In a regression regressing whether a worker is exposed to hazardous conditions against dummy variables for the person's race, Hispanic workers are statistically more likely to be exposed to hazardous conditions compared to non-Hispanic white workers; Asian, Black, and the "Other" race groups are all statistically less likely to be exposed to hazardous conditions compared to non-Hispanic white workers. These results remain statistically significant (at $p<.1$) after clustering standard errors to the occupation level.

[70] A full attempt to estimate the compensating differentials earned by workers in hazardous jobs is beyond the scope of this article – credibly doing so would likely require matched employer-employee data (see Lavetti 2023). I note, however, that conditional on age and whether a worker has a bachelor's degree or not, Hispanic workers in hazardous occupations outearn Hispanic workers in non-hazardous occupations by about 20%.

[71] See, e.g., Chetty et al. (2011).

[72] https://home.treasury.gov/news/featured-stories/post-5-racial-differences-in-educational-experiences-and-attainment

A large body of research has shown that policy interventions early in life are more cost effective than later-life interventions, such as job retraining (Hendren and Sprung-Keyser 2020). The estimated welfare gains from childhood education or health are significantly higher than estimated welfare gains from job retraining programs.[73] Research suggests that racial achievement gaps occur as early as preschool or earlier (Fryer 2010).[74] Policy interventions that reduce economic inequality (e.g., by race) early in life can therefore have large returns later in life, even if they are facially neutral (i.e., do not specifically target race or racial disparities).

The remainder of this section explores two channels in which early childhood experiences impact later-life labor market outcomes (e.g., earnings, productivity, participation).[75]

4.1. Location

Where a child is born and grows up, even at the neighborhood level, can have a profound impact on later-life success. Using a rich set of administrative tax data, Chetty and Hendren (2018) find that children moving into a "better" neighborhoods, especially early in life, grow up to have higher earnings, higher college attendance rates, and lower rates of teen pregnancy.[76] Low socio-economic status (SES) students have lower exposure and friendship formations with students of higher SES, which have strong implications for later-life network effects (Chetty et al. 2022). Estimates from Chetty et al. (2018) child in the lowest quartile of economic mobility could earn nearly $200,000 more over their lifetime if they instead grew up in the top quartile of economic mobility.[77] It is hard to overstate the importance of these early childhood experiences: Chetty and Hendren (2018) find that, conditional on parental income non-Hispanic Black women marginally out earn non-Hispanic white women. These neighborhood effects may be even larger today, as internal migration rates have been falling for decades, which increases the likelihood that a child born in a "bad" neighborhood stays in that neighborhood. [78]

In the United States, the historic practice of redlining – the practice of systematically denying access to credit or other financial services due to racial composition of a prospective applicant's desired neighborhood – exacerbates racial disparities by furthering racial segregation. This practice restricts members of those communities from living in neighborhoods they otherwise would have preferred to live in. Historic redlining during the Great Depression era continues to create racial segregation in neighborhoods today (Aaronson et al., 2021). And while redlining is not legally permitted anymore, recent government enforcement actions strongly suggest the

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[73] Ibid. See Appendix Figure II.
[74] Fryer, Roland. "Racial inequality in the 21st century: The declining significance of discrimination." In Handbook of labor economics, vol. 4, pp. 855-971. Elsevier, 2011.
[75] The channels explored below should not be considered exhaustive. Nor are they necessarily independent of each other.
[76] Chetty and Hendren (2018) define a neighborhood as better based on the outcomes, such as income, teen birth, college attendance, of children already living there. Neither the authors nor I use the terms "better" or "worse" with any normative connotation. The authors find moving early in life has a more positive effect because the effect of moving into a better neighborhood is roughly linear – increasing proportionately the more exposed (number of years of residence) a child is to the better neighborhood.
[77] Chetty et al. define mobility at the Census tract level based on the average percentile rank of children's adulthood income conditional on having parents who earn incomes of roughly the 25th percentile of the national income distribution.
[78] Census (Table A-1)

practice has not been fully discontinued.[79] These practices matter because they 1) likely contributed to the variation in neighborhood quality to begin with, and 2) prevent families from moving into "better" neighborhoods (e.g., with better resourced school districts), resulting in missed opportunities for those affected by redlining or its vestiges.

Location of birth and childhood has implications for racial and ethnic disparities in other contexts, too. For example, an analysis by the National Resources Defense Council found children of color are much more likely to grow up in households where drinking water is unhealthy (Fedinick et al. 2019). And Yeter, Banks, and Aschner (2020) find children are more likely be exposed to other dangerous chemicals that can affect both later-life health and income. For people of Hispanic origin, location of birth – inside or outside the U.S. – may have particularly strong effects on later-life outcomes, like school attendance (Liscow and Woolston 2017).

4.2. Childhood Familial Structure

As Figure 1 above suggests, there are large disparities by race and ethnicity in household incomes, even larger in some cases than the disparities for earnings. In this section, I focus briefly on variation in household and family structure because children's outcomes depend on those they are around when growing up and there are large differences by race and ethnicity in household structure.

One important way that household structure varies by race is the prevalence of single parent households. Single parent households are substantially more common among Black and Hispanic families than the national average (20.7% and 14.5% respectively compared to 10.2% for the nation overall) (Census 2023).[80] Single-mother households are much more common than single-father households among all groups (roughly 4 times as likely overall), but they are particularly more common among Black households, where single-mother households are 7 times more common than single-father households. The particularly large disparities among Black families relative to other groups is deeply influenced by the role of incarceration, as Section 2.2 showed. In contrast, 59% of Asian households consist of married couples, which is well over double the rate for Black families (26.9%). Average household size also varies by race/ethnicity, ranging from 2.94 (non-Hispanic white households) to 3.61 (Hispanic households).[81]

One important implication of kids growing up in a single parent home is that, on average, they grow up in a home with fewer financial resources, which, as mentioned above, plays a strongly predictive role in a child's later life earnings. In 2022, households with married couples had a median income of about $111,000 compared to about $74,000 for single fathers and $56,000 for single mothers.[82] The difference in median household income for single-fathers compared to

[79] https://www.consumerfinance.gov/about-us/newsroom/director-chopra-remarks-justice-department-interagency-event-combat-modern-day-redlining/
[80] Source: Census Bureau *"America's Families and Living Arrangements: 2022"* table H2 (2023). https://www.census.gov/data/tables/2022/demo/families/cps-2022.html
[81] Ibid, table AVG2. Note: range only includes categories with at least 1 million households.
[82] https://www.census.gov/library/publications/2023/demo/p60-279.html (table A-1).

single-mothers highlights the additional resource constraints faced by the children of single-mothers.

Differences in familial structure can make a tremendous difference in a child's life, especially because they implicate the amount of time parents can devote to their children (Pew 2013).[83] Parental involvement in turn plays an important role in a child's later-life outcomes, including their educational achievement (Sandra 2013; Bergman 2021) and improving socio-emotional skills (Meroni, Piazzalunga, and Pronzato 2022). And the benefits of parental time-investment may be largest among children in low SES households (Thompson 2015).[84] The effects of growing up in a single parent household may be particularly strong: it is associated with everything from lower grades in school to higher probability of becoming incarcerated (McLanahan and Sandefur 2009) and poorer health outcomes for the child (Scharte and Bolte 2013). In a working paper, Gayle, Golan, and Soytas (2012) find that that Black individuals invest less time in their kids primarily because of differences in familial structure.

Differences by race in family structure can indirectly impact later life income in other ways, too. For example, Altmejd et al. (2022) find that college attendance of older siblings increases both the four-year college attendance rate quality of chosen school for their younger siblings. The authors find effects are largest for families with low predicted probabilities of child college attendance, such as low-income families. Using quasi-random variation from judge assignments, Norris, Pecenco, and Weaver (2021) find that people are less likely to become incarcerated themselves when their sibling is incarcerated.. And more generally, studies suggest siblings' earnings are strongly predictive of each other, even after accounting for factors solely attributable to their shared parents.[85]

5. Conclusion

In this paper I explore some key drivers of racial differences in labor markets as well as some underexplored reasons for such differences. Although I discuss some of the key topics and literature explored by others, a key aim of this paper is to broaden the horizons through which policymakers consider racial differences in the labor market.

For people of working age, I show that key relative changes in labor force participation rates are attributable to white workers aging more rapidly than other racial and ethnic groups. Incarceration reduces employment rates for all groups, but especially Black men – explaining more of the difference between non-Hispanic white and Black male prime-age employment rates than even education.

I show how the experience of working for those who are employed varies by race as well. The racial earnings gap is clearly important to policymakers, as it should be – it implicates societal

[83] Author's calculations using data from the American Time Use Survey (2021, accessed via IPUMS), likewise show that parental time spent on primary and secondary childcare is larger in households with cohabitating married couples compared to households with kids raise in households without a cohabitating married couple.

[84] I caution here that Thompson (2015) used Danish data, which may not translate well to the United States context. See also McLanahan and Percheski (2008) for a review of earlier literature.

[85] See, e.g., Bingley and Cappellari (2019). see also Cools and Patacchini (2017) and Peter et al. (2018).

values of fundamental fairness and equality and economic efficiency – but other factors implicate many of these values as well. Occupational sorting means there is dramatic overrepresentation of certain racial groups by occupation (e.g., Asian workers more likely to computer and mathematical sciences occupations, Black workers more likely to work in healthcare support occupations). These jobs offer different bundles of amenities and disamenities, including earnings. Spatial factors texture the real returns to working, net of cost of living and commuting. Differential burdens of work also vary among other dimensions, though, with greater disamenities of working such as longer commute times for non-white workers.

Much of the variation in labor market outcomes are determined prior to entering the working age population. In addition to factors such as parental income, familial structure, and residence – even at the neighborhood level – are strongly predictive of later-life outcomes, such as earnings, college attainment, and employment.

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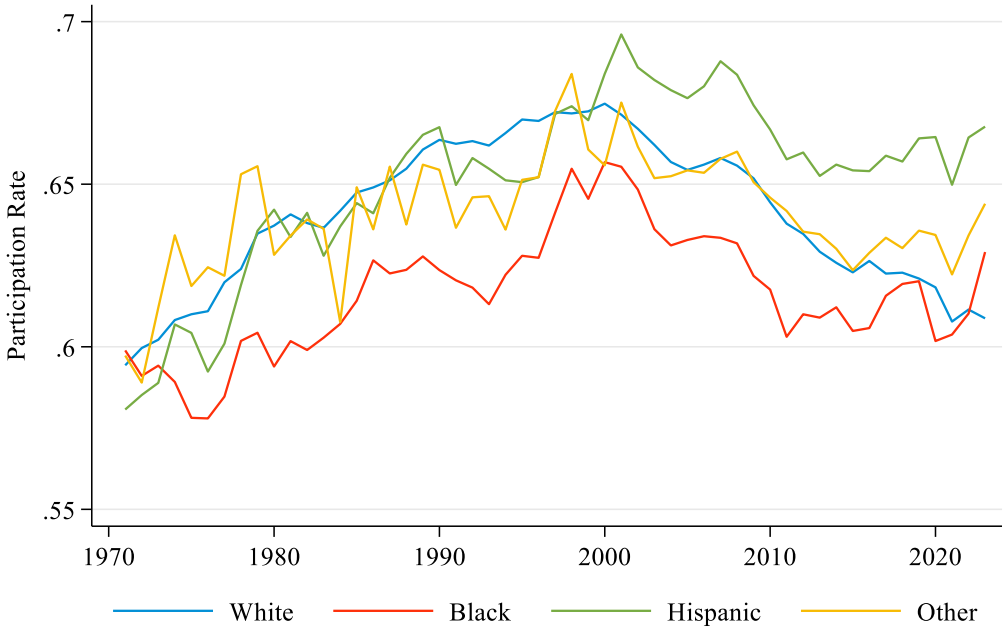
Appendix A: Supplemental Material

Table A.1. Oaxaca-Blinder Decomposition Results, 2022.

Comparison group	Observed Gap	Total Explained	Total Unexplained	Explained: Education	Explained: age	Explained: Incarcerated	Explained: State	Explained: Marital Status	Explained: Foreign Born
Female, Black	-1.65	-2.87	1.22	-2.79	0.03	-0.14	-0.27	0.79	-0.48
Female, Asian	-3.06	-4.55	1.49	2.30	0.00	0.18	-0.27	-0.57	-6.19
Female, Other	-3.97	-2.11	-1.87	-1.36	0.07	-0.14	-0.32	0.45	-0.79
Female, Hispanic	-8.28	-7.70	-0.59	-3.92	0.02	0.09	-0.69	0.37	-3.56
Male, Black	-13.60	-8.21	-5.39	-1.63	0.24	-3.82	-0.03	-3.11	0.13
Male, Asian	2.07	2.81	-0.74	2.00	0.13	0.75	-0.33	0.25	0.02
Male, Other	-7.03	-3.02	-4.00	-0.56	0.39	-1.04	-0.26	-1.58	0.03
Male, Hispanic	-1.29	-2.12	0.83	-1.76	0.24	-0.55	-0.33	-1.10	1.38

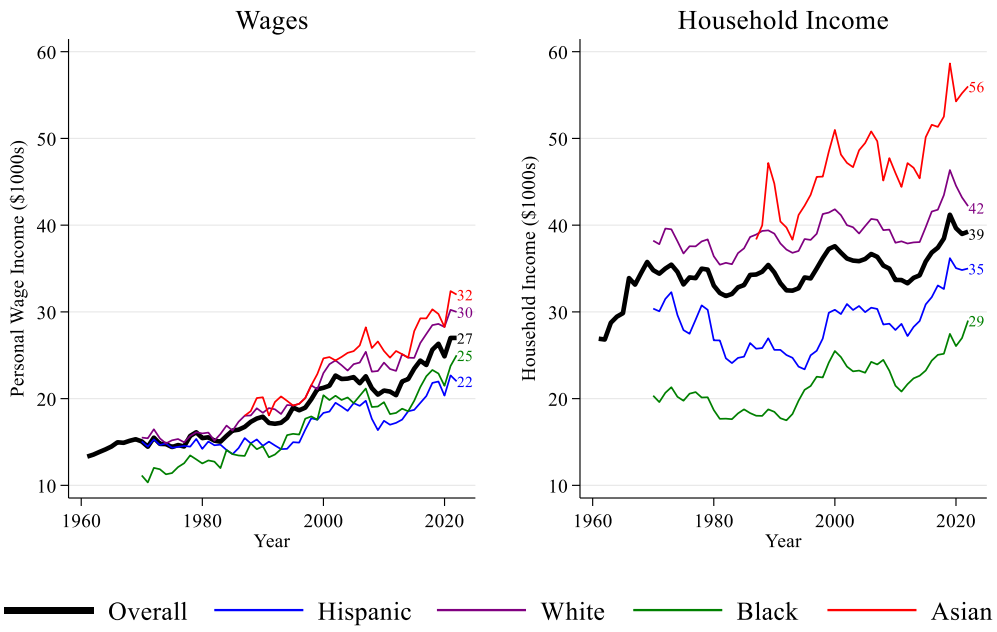
Note: All cells represent percentages.

Figure A.1. Labor Force Participation Rate by race



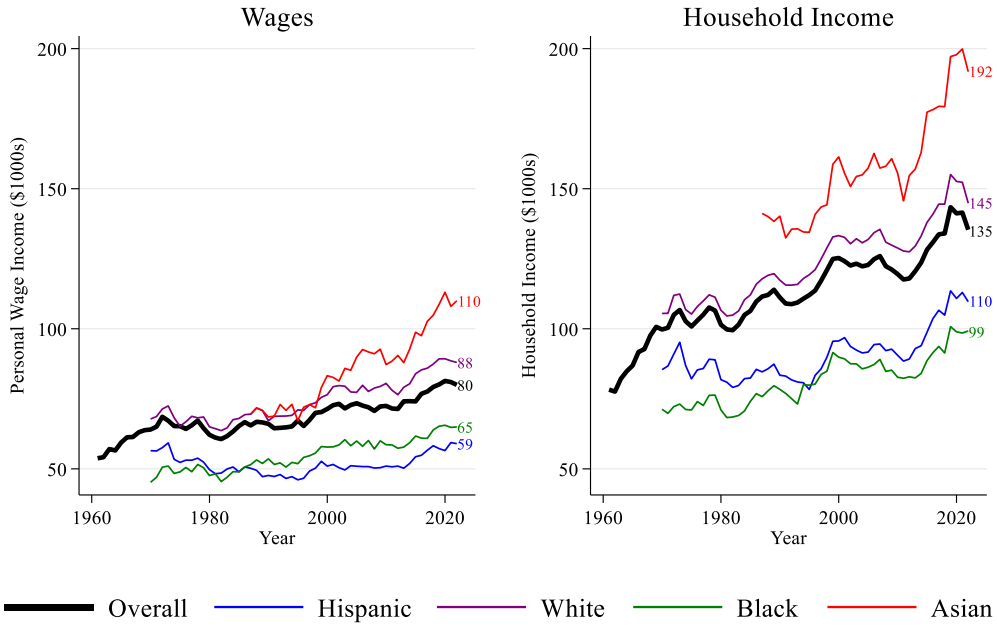
Source: Author's calculations using CPS-ASEC (March supplement). All groups are non-Hispanic unless otherwise noted. 'Other' includes all non-Hispanic race/ethnicity categories other than white and Black alone. It includes non-Hispanic Asians and those of multiple races.

Figure A.2. Income for 25th percentiles



Source: Current Population Survey (ASEC, via IPUMS) 1962-2023. All groups non-Hispanic unless otherwise noted. Sample only includes workers with positive earnings. Dollars are expressed in 2022 dollars. Sample excludes persons and households earning less than $1,000 a year. Race of household based on race of householder.

Figure A.3. Income for 75th percentiles



Source: Current Population Survey (ASEC, via IPUMS) 1962-2023. All groups non-Hispanic unless otherwise noted. Sample only includes workers with positive earnings. Dollars are expressed in 2022 dollars. Sample excludes persons and households earning less than $1,000 a year. Race of household based on race of householder.