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# *The Economic Gains from Equity*

**ABSTRACT** How much larger would the US economic pie be if labor market outcomes were more equitably distributed by race and ethnicity? Using data from the Current Population Survey (1990–2019), we estimate the improvements in labor contribution to aggregate output associated with making the outcomes for Black, Hispanic, and other minority groups at least as favorable as those for non-Hispanic white individuals in employment, hours worked, educational attainment, educational utilization, and earnings. We find significant economic gains, measured in trillions of dollars of GDP. Our results indicate that ensuring all Americans have an equitable opportunity to participate in the economy is an economically significant way to increase aggregate prosperity.

In 1964 President Lyndon B. Johnson signed the Civil Rights Act, prohibiting discrimination based on race, color, religion, sex, or national origin. The signing marked a shift in American law that was intended to

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remove barriers and deliver more equal opportunities, including in the labor market. Today, significant gaps in outcomes by race and ethnicity remain. Indeed, an extensive literature documents persistent, and even widening, disparities in employment and earnings in the United States that leave Black, Hispanic, and other minorities well behind their non-Hispanic white counterparts. The research also shows these differences in outcomes, the gaps, are only partially explained by measurable differences in education, experience, and other characteristics related to productivity.[1] The result is that nearly sixty years after the passage of the Civil Rights Act, and despite the countless policies and programs that have followed, race and ethnicity remain significant predictors of labor market success in the United States (Rodgers 2019).

We argue that these facts present an economic problem.[2] If talent and innate preferences are evenly distributed by race and ethnicity—a premise that seems hard to refute—persistent racial and ethnic disparities represent misallocation and lost production.[3] In other words, the persistence of systemic disparities is costly, and eliminating them has the potential to produce large economic gains (Hsieh and others 2019; Turner 2018; Treuhaft, Scoggins, and Tran 2014).

Of course, the benefits go well beyond the inclusion of previously sidelined or underutilized resources. The opportunity to use one's talents fully, unbridled by prejudgment or other artificial barriers, is at the foundation of a dynamic economy. Individuals invest in themselves based on the returns they expect to receive. Persistent barriers and systemically lower payoffs to effort depress these incentives, potentially leading to lower human capital investment and further solidification of gaps in outcomes.[4] In other words, more equitable outcomes matter both for the level of GDP and for the process of sustained economic growth. This means that changing opportunity affects both current and future economic output.

1. This literature spans multiple disciplines. For example, see Williams and Wilson (2019), Wilson and Jones (2018), Cajner and others (2017), Daly, Hobijn, and Pedtke (2017), and Pager and Shepherd (2008).

2. Several researchers, including Williams and Spriggs (1999), Mason and Williams (1997), and Darity and Williams (1985), have noted that standard economics models would not naturally reach this conclusion. Our paper builds on their insights. We elaborate on their points later in the discussion.

3. We are not the first to recognize this; see Bostic (2020), Cook (2020), Peterson and Mann (2020), and Daly (2021).

4. Although not the subject of this paper, these barriers also lead to gaps by race and ethnicity in consumption, savings, and wealth, which leave individuals, families, and communities more vulnerable to economic shocks; see Bhutta and others (2020).

In this paper, we offer some initial estimates of what the gains to the labor contribution to GDP might be from equalizing labor market outcomes across race and ethnicity.[5] Specifically, using data from the Current Population Survey (CPS, 1990–2019), we estimate the impact on aggregate output of making the labor market outcomes of Black, Hispanic, and other minority groups at least as favorable as those of the non-Hispanic white population, the long-standing majority group in the United States.[6] Our findings point to considerable gains, measured in trillions of dollars of GDP. We then ask whether the gains from more equal outcomes have changed over time. We find that the benefits from equalizing outcomes have risen, owing to the persistence of economic disparities and the rising share of the population that experiences them. Finally, we consider the extent to which closing each outcome gap would contribute to increases in overall output. Out of the measures we consider, we find that eliminating racial and ethnic disparities in employment rates and educational attainment makes the largest contributions. Additional meaningful gains could come from eliminating residual earnings gaps not explained by these and other productivity-related indicators.

The remainder of the paper is structured as follows. We begin by documenting gaps in measures of labor market success by race and ethnicity over the past three decades in section I. We then briefly discuss the related literature, calling out where our work contributes in section II. In section III, we lay out our framework and describe our results. We conclude in section IV with a discussion of possible further considerations and research, including issues policymakers, the private sector, and American society will have to grapple with to obtain the kinds of gains we document.

## I. Labor Market Outcomes by Race and Ethnicity

Although gaps in labor market outcomes by race and ethnicity are often discussed and fairly well known, the extent of the gaps and their persistence bears reviewing. To do this we use CPS data from 1990 through 2019.[7] To avoid concerns about differences in schooling or retirement behavior, we focus on civilian noninstitutionalized adults age 25–64. We further

5. Examples of similar exercises can be found in Peterson and Mann (2020), Noel and others (2019), and Turner (2018).

6. We consider this a reasonable benchmark to make the point that unequal labor market outcomes translate into lower aggregate output and that greater equity increases overall prosperity.

7. We restrict our analysis to the outgoing rotation groups of the CPS basic monthly files.

restrict our baseline sample to people who are not self-employed.[8] We divide this population into eight mutually exclusive groups defined by gender and race or ethnicity.[9] Although there is no perfect way to categorize individuals by race or ethnicity, we follow what is commonly done in the literature. Specifically, we define four mutually exclusive race/ethnicity groups based on self-reported designations: non-Hispanic white, non-Hispanic Black, Hispanic, and all remaining non-Hispanic, non-white, and non-Black individuals (e.g., Asian, Pacific Islander, American Indian).[10] Throughout the paper we refer to these groups as white, Black, Hispanic, and API+, respectively.

To assess relative labor market success across groups, we consider five metrics: employment, hours worked, earnings, educational attainment, and educational utilization. We define employment using the variable *monthly labor force recode*, restricting our sample to the values "employed-at work" and "employed-absent." We aggregate these responses annually and compute the average share of employed individuals in each year. Conditional on being employed, we then compute hours worked and earnings. We define hours worked as usual weekly hours worked over all jobs, and we similarly average this value over our sample and on an annual basis. We measure earnings as average hourly earnings, defined as usual weekly earnings divided by usual weekly hours adjusted for inflation using the personal consumption expenditures price index.[11]

We categorize educational attainment as the maximum education completed across four mutually exclusive categories: high school or less, some college, bachelor's degree, and postgraduate studies. Finally, we compute a measure of educational utilization for employed individuals with a bachelor's degree or higher. This measure is intended to capture the fact

8. We make this restriction due to a change in the collection of hours data in 1994 for the self-employed that limits the accuracy of comparisons over time. In analysis not shown, we repeat everything to include the self-employed along with all other employed people and the results are qualitatively similar.

9. The question in the CPS files that we use to define our gender variable asks, "What is _____'s sex?" In keeping with the literature, we refer to the distinctions of men and women as gender.

10. We recognize that the final group is quite heterogeneous. Unfortunately, given the limits of sample size in the CPS data, we are unable to reliably divide this group into smaller and more representative categories.

11. To account for discontinuities in CPS top-coding, we adjust top-coded earnings following methods developed by the Center for Economic Policy Research (CEPR Data, CPS ORG Programs, https://ceprdata.org/cps-uniform-data-extracts/cps-outgoing-rotation-group/cps-org-programs/). Employed individuals with missing earnings values are assigned zero earnings.

that many racial and ethnic minorities are overeducated for the jobs they hold (Williams and Wilson 2019; Rose 2017).[12] We measure educational utilization for individuals by comparing their educational attainment to what is required by their occupation. For simplicity we define required education as needing or not needing a bachelor's degree. Following Williams and Wilson (2019), we estimate required education, at the four-digit occupation level, by computing the percentage of individuals in that occupation that have less than a bachelor's degree (e.g., with some college or high school or less). If 50 percent (or more) of workers in a four-digit occupation group have less than a bachelor's degree, we classify that occupation as not requiring a bachelor's degree. We repeat this for each year in our sample. We then compare these requirements to the educational attainment of the workers in our sample. Workers with more education than their occupation requires are considered underutilized. All other workers are classified as fully utilized.

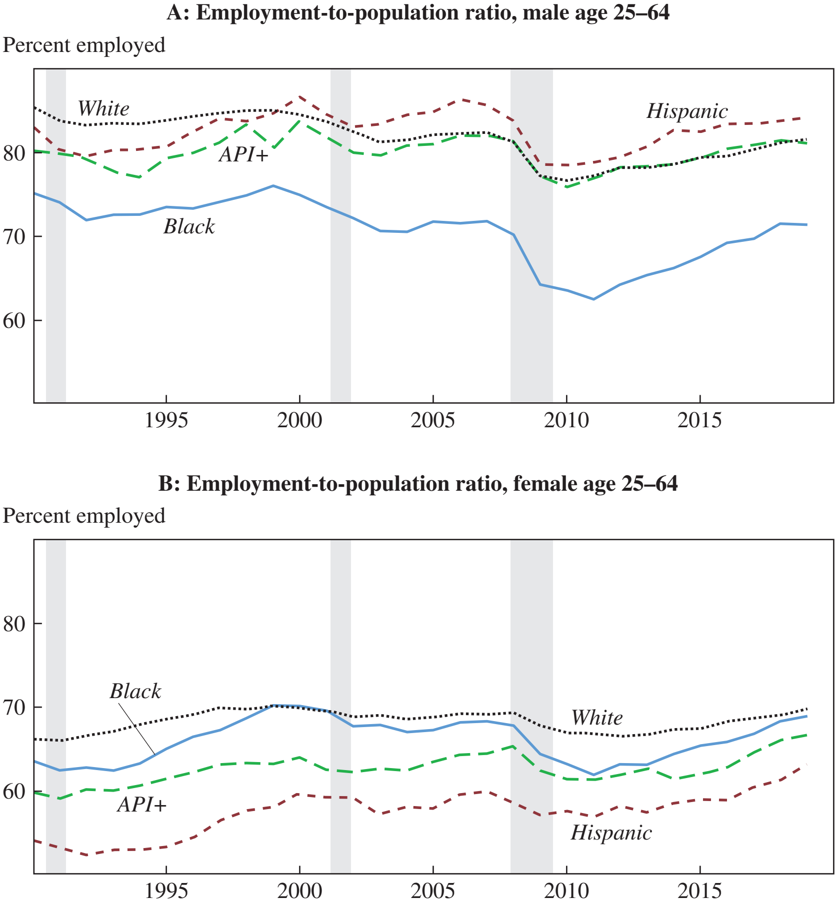
### I.A. Levels and Trends

We begin with employment, shown in figure 1, which plots the percentage of the population age 25–64 employed in each year by gender and race. Several things stand out in these charts. First, employment rates for all fluctuate with the business cycle, moving up in good times and down in bad times. Second, there are considerable differences by gender. Among men, shown in panel A, the secular trend in employment is downward, meaning that employment rates are lower today than they were in 1990. Looking more specifically at differences by race and ethnicity, clear differences emerge. Employment rates for Black men are consistently lower than for all other groups. For example, in 2019 the employment rate of white, Hispanic, and API+ men was just over 80 percent; the employment rate for Black men was just over 70 percent. Over the entire sample period, the average employment gap between white and Black men is about 11 percentage points. Although the gap between Black and white men narrows somewhat during expansions (Aaronson and others 2019), the main finding is that Black men are far less likely to be employed than other men.

The pattern for women is quite different. Overall, women have lower employment rates than their male counterparts. Among women, white women have higher employment rates than their Black, Hispanic, or API+

12. Related literature finds that barriers to entry for racial and ethnic minorities have resulted in a misallocation of talent across industry and occupation (Hsieh and others 2019; Bell and others 2019).

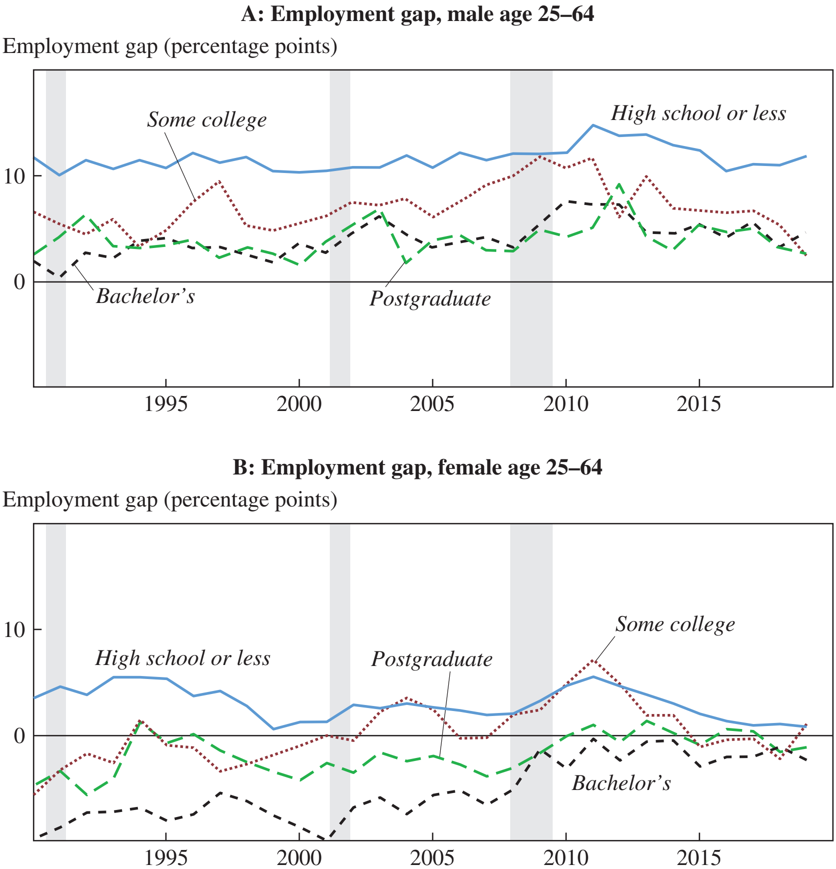
**Figure 1.** Trends in Employment




Source: Authors' calculations using CPS data.

counterparts. Black women have the next highest employment rates, although the gap between white and Black women fluctuates considerably over the business cycle, widening in recessions and narrowing again well into expansions. Employment rates since the Great Recession for API+ women are similar to those of Black women, however they exhibit very little cyclicality over the sample. Hispanic women's employment rates are substantially lower and have been hovering slightly below 60 percent since 2000. The exception to this is in the final years of the last expansion. Between 2016 and 2019, employment rates for Hispanic women rose 4.3 percentage points.

**Figure 2.** White/Black Trends in Employment Gaps by Education




Source: Authors' calculations using CPS data.

Importantly, as many have noted, these differences in employment do not fully owe to differences in education (Spriggs and Williams 2000; Williams and Wilson 2019; Daly, Hobijn, and Pedtke 2017; Cajner and others 2017). This can be seen in figures 2, 3, and 4, which show how employment rates across groups differ regardless of education level. The charts plot employment rate gaps by education between white men and women and their Black, Hispanic, and API+ counterparts, for example, the percentage point difference between white male employment rates and Black male employment rates.

Starting with figure 2, it is clear that educational attainment alone does not close gaps in employment between white and Black men. That said, gaps do shrink with increased educational attainment. For example, in 2019 the employment gap for Black men with a bachelor's degree was about 5 percentage points, compared to over 11 percentage points for Black men with high school or less. Although the gaps have fluctuated somewhat over time, by and large they are the same in 2019 as they were in 1990. This holds for all education levels. As was the case in the more aggregated trends, the pattern for women is different. For much of the sample, Black women with a bachelor's degree or postgraduate education have had higher employment rates than similarly educated white women. The gaps in employment have been falling over time, although Black women with a bachelor's degree remain slightly more likely to be employed. In contrast, Black women with some college or high school or less education have frequently had lower employment rates than their white counterparts. These gaps have also closed over time.

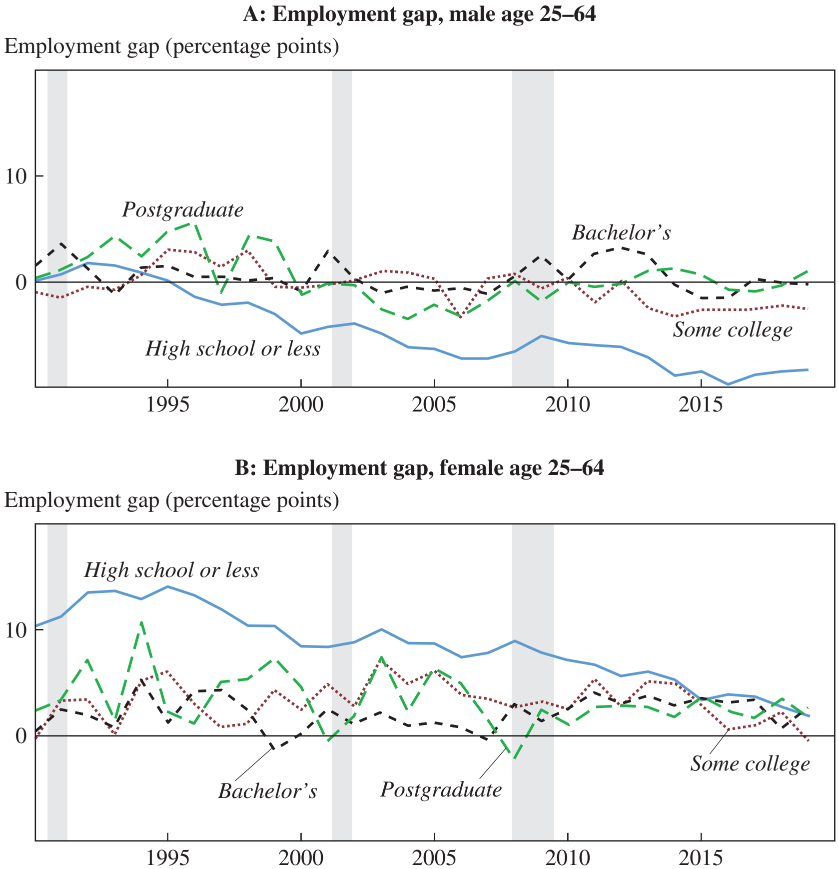
Figure 3 shows the same plot for Hispanic men and women. Recall that Hispanic men generally have higher employment rates than white men. The figure shows that this is especially true for Hispanic men with high school or less. Hispanic men with a bachelor's or postgraduate degree are employed at about the same rate as their white counterparts, resulting in a minimal employment gap. Similar to the pattern for Black women, the employment gaps for Hispanic women at all education levels have been converging toward zero, although some gaps remain.

The data in figure 4 show employment gaps for API+ men and women. For API+ men, the gaps have been trending down over time for all education levels. However, gaps do remain for API+ men with less than a postgraduate degree.[13] The pattern by education is completely reversed for more educated API+ women, with larger employment gaps and lower employment rates.

Turning to hours (figure 5), among those who are employed, white men work more hours than Black, Hispanic, or API+ men. In the early 2000s, the gap between white and API+ men began to decrease, while the values for both groups mostly leveled off in the recent expansion. The gaps in hours between white men and Black and Hispanic men have begun to narrow, as hours for Black and Hispanic men have risen. The growth in hours worked for these two groups was especially noticeable in the last expansion. In 2019, the hours gap was at the lowest level recorded over the period, at about 1.7 hours per week between Black and white men, and 1.4 hours per week between Hispanic and white men. Again, for women, the patterns

13. As mentioned earlier, the majority of the API+ sample is Asian American, with higher than average levels of educational attainment.

**Figure 3.** White/Hispanic Trends in Employment Gaps by Education

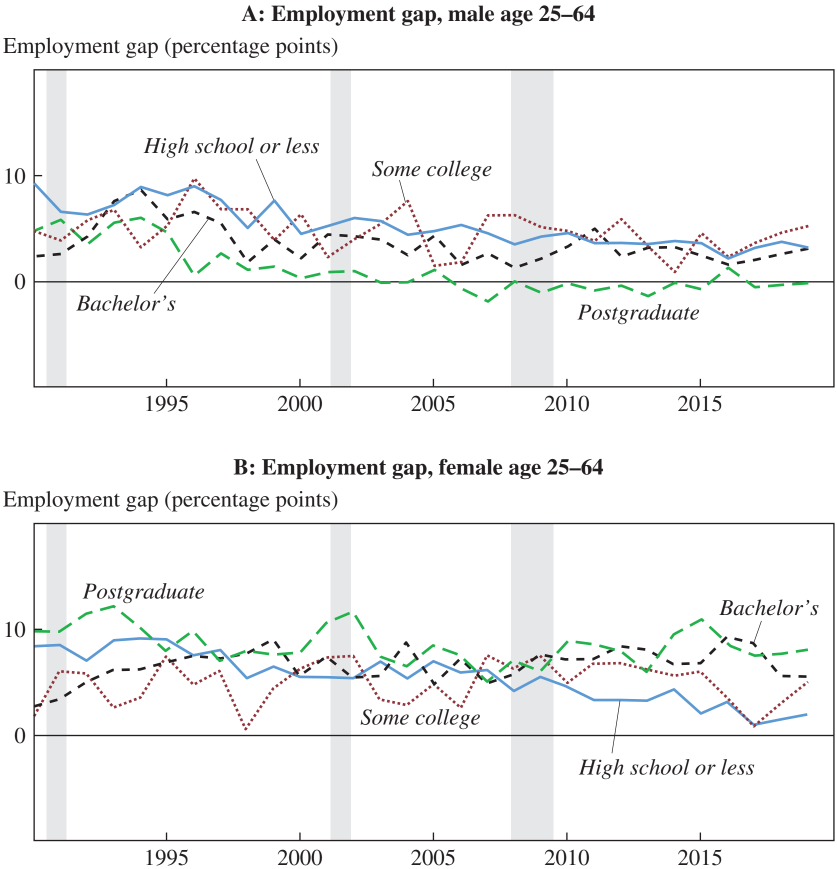



Source: Authors' calculations using CPS data.

are significantly different. Black and API+ women work more hours than their white or Hispanic counterparts. That said, during the last expansion, hours worked among white women grew somewhat, narrowing the gap. Hours for Hispanic women fell during the Great Recession and only started to climb again in 2017.

Previous authors have found similar gaps in a range of other labor market outcomes, including labor force participation, unemployment, and underemployment (Cajner and others 2017) and separation rates and job finding rates (Daly, Hobijn, and Pedtke 2017). Moreover, these authors show that the outcomes cannot be fully explained by differences in age, education,

**Figure 4.** White/API+ Trends in Employment Gaps by Education

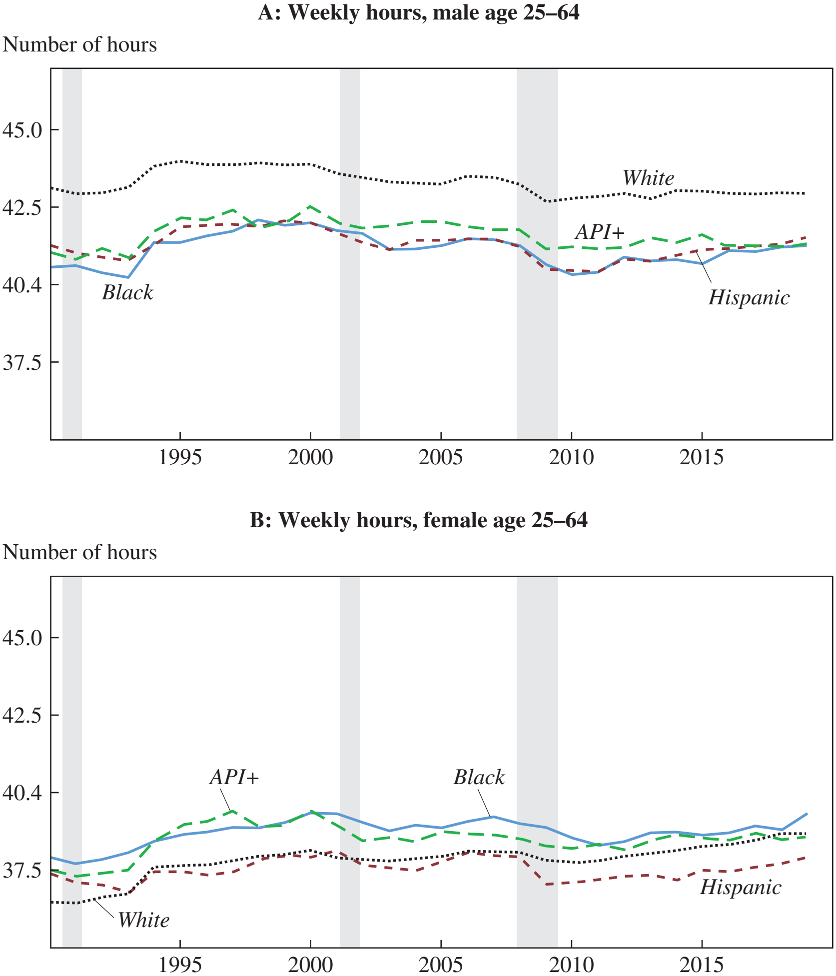



Source: Authors' calculations using CPS data.

experience, or occupation and industry but rather reflect unmeasured factors.[14] The persistent and large differentials in the employment of racial and ethnic minorities, even after controlling for educational attainment, point to considerable underutilized human resources that, if more equitably allocated, could boost aggregate output (Stewart and others 2021).

14. One well-studied unmeasured factor is discriminatory practices. Using specialized data and experiments, several authors have documented discriminatory practices or biases as an ongoing barrier in the labor market. See Neumark (2018), Altonji and Blank (1999), Bertrand and Mullainathan (2004), and Pager, Western, and Bonikowski (2009).

**Figure 5.** Trends in Hours



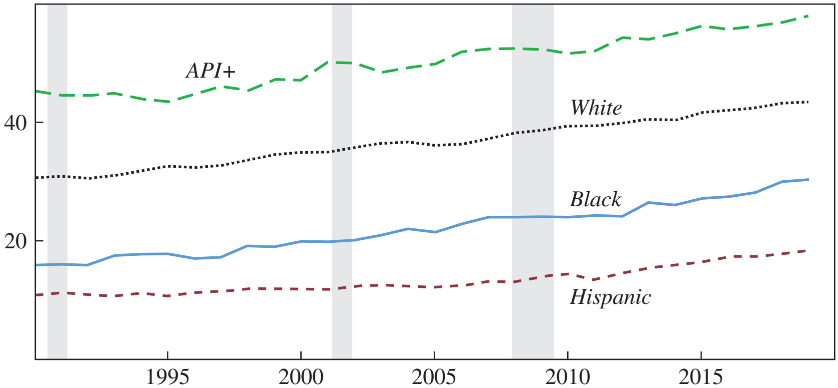

Source: Authors' calculations using CPS data.

Although educational attainment is not a remedy for all the gaps by race and ethnicity we observe, ongoing differences in education do play a role in determining differences in labor market outcomes. As such, we highlight them here. Figure 6 shows large and persistent differences in educational attainment across groups. The figure plots the share of men and women with a bachelor's degree or more by race and ethnicity from 1990 to 2019. Several things are worth noting. First, API+ have the largest share of the

**Figure 6.** Trends in Educational Attainment

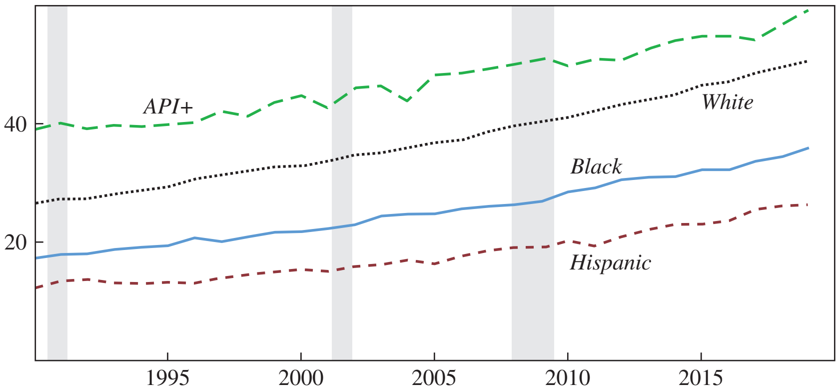
**A: Share of population with a bachelor's degree or higher, male age 25–64**

Percent share




**B: Share of population with a bachelor's degree or higher, female age 25–64**

Percent share




Source: Authors' calculations using CPS data.

population with a bachelor's or higher, driven largely by the very high college completion rates of Asian Americans, which is the largest subgroup of API+.[15] This holds for both men and women. White men and women have the next highest shares, followed by Black and then Hispanic men and women. These trends are consistent with findings by Espinosa and others (2019) on racial gaps in college completion.

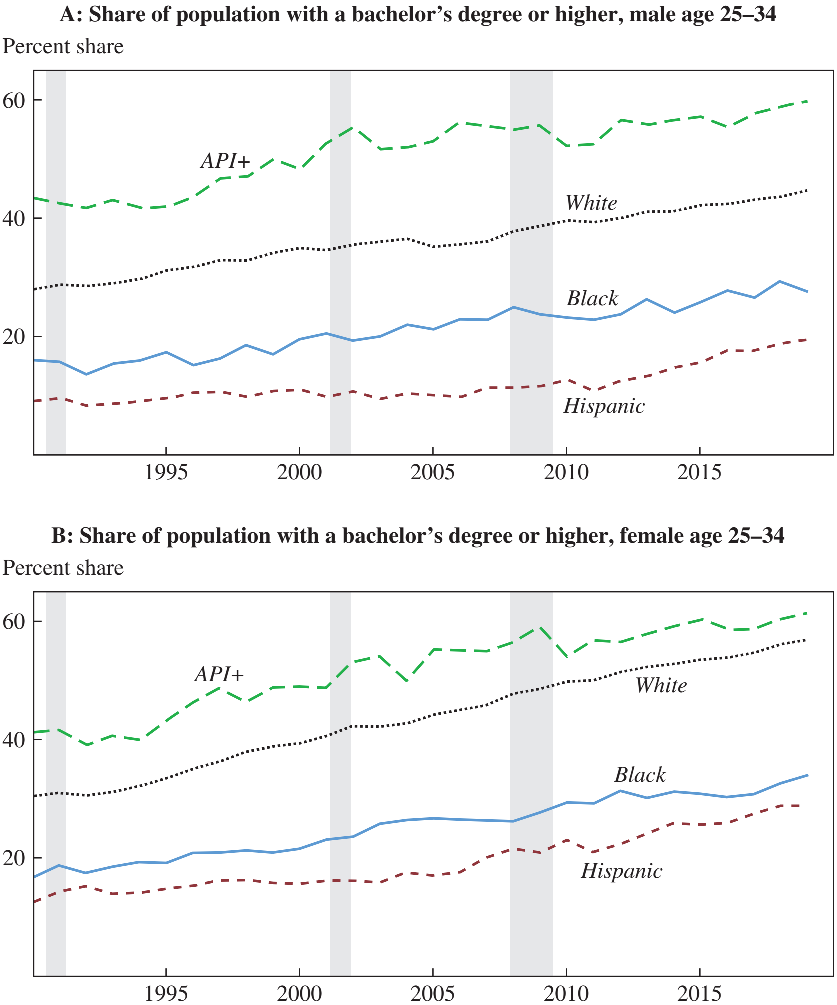
15. Among Asian Americans, there is significant variation in the educational experiences of ethnic subgroups (Espinosa and others 2019).

The differences across groups are large. For instance, in 2019, 58 percent of API+ men had a bachelor's degree or higher compared to 43.4 percent of white men, 30.4 percent of Black men, and 18.4 percent of Hispanic men. For women, the percentages were 59.1, 50.5, 35.9, and 26.3, respectively. These differences are larger than they were at the start of the sample for Black and Hispanic women as compared to white women. In fact, the gaps between white and Black women increased in the second half of the sample, as the rate of white women completing a bachelor's degree or higher increased, while the rate for Black women stayed relatively constant. Notably, we find these patterns are insensitive to the age range of the sample, suggesting that these gaps are not simply a reflection of past differences in educational access that have not yet aged out of the sample we study. Indeed, figure 7 shows that gaps in educational attainment are also large among those age 25–34, suggesting that differences in educational attainment continue to be an issue for racial and ethnic minorities.

Even when gaps in educational attainment are closed, research has found that racial and ethnic minorities are not always in occupations consistent with their degrees (Williams and Wilson 2019; Abel and Deitz 2016). Figure 8 shows trends in educational utilization by group. Recall that being utilized is defined as being in an occupation that requires the level of education acquired. The figure plots the share of people with a bachelor's degree or more who are in an occupation requiring that level of education, by gender, race, and ethnicity. For both men and women, utilization rates of white and API+ workers are higher than those of Black and Hispanic workers. The gap is especially large for Black and Hispanic men. Black and Hispanic women have higher utilization rates than their male counterparts. Notably, the gaps in utilization for both genders have grown over time as white and API+ workers have become better utilized while utilization rates for Black and Hispanic workers have remained steady. In 2019, the last year of our sample, the utilization gap between white workers and both Black and Hispanic workers stood over 8 percentage points for both men and women.

The final trends we highlight are for earnings. Figure 9 shows real average hourly earnings for employed workers (in 2019 dollars). Starting with men, there is a sizable gap between the earnings of white and API+ workers and the earnings of Black and Hispanic workers. Over the sample, Black men have earned about 73 percent of what white men earn; Hispanic men earned about 68 percent of what white men earned. Although the gaps in earnings for females are smaller, they have notably widened over time. In 1990, the average Black female earned about 87 percent of what the

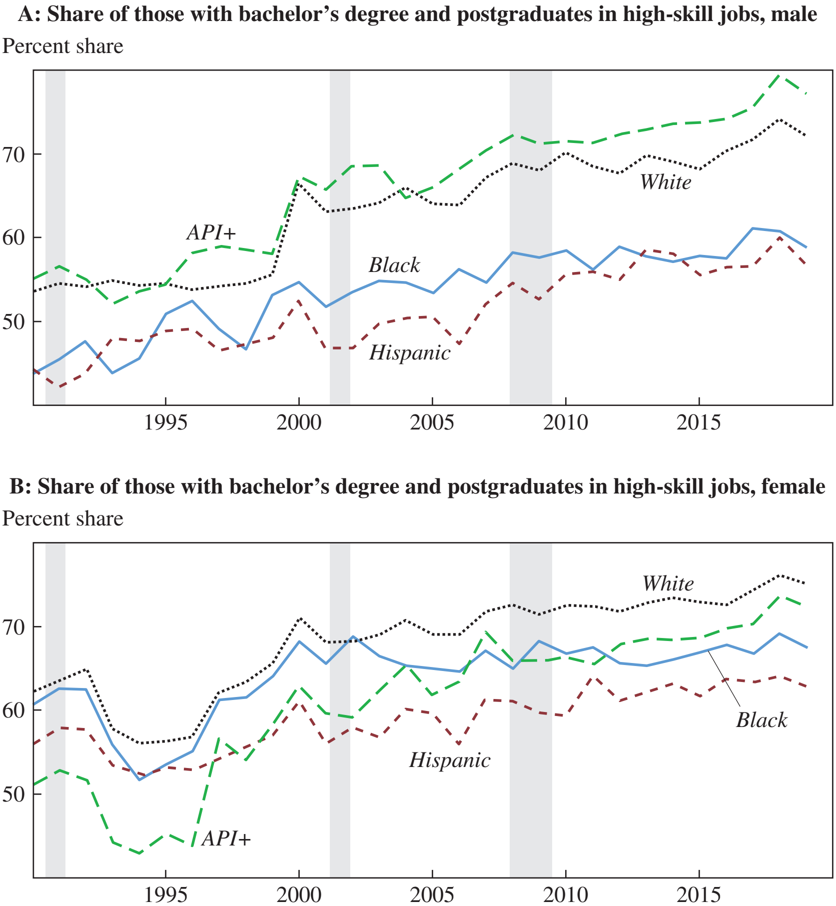
**Figure 7.** Trends in Educational Attainment




Source: Authors' calculations using CPS data.

average white female earned. As of 2019, the average Black female earned only 82 percent of what the average white female earned. Similarly, the gap in earnings between white and Hispanic women has increased. In 1990 the average Hispanic female earned 81 percent of what the average white female earned; in 2019 this number had fallen to just 76 percent. These trends are consistent with findings from Wilson and Rodgers (2016).

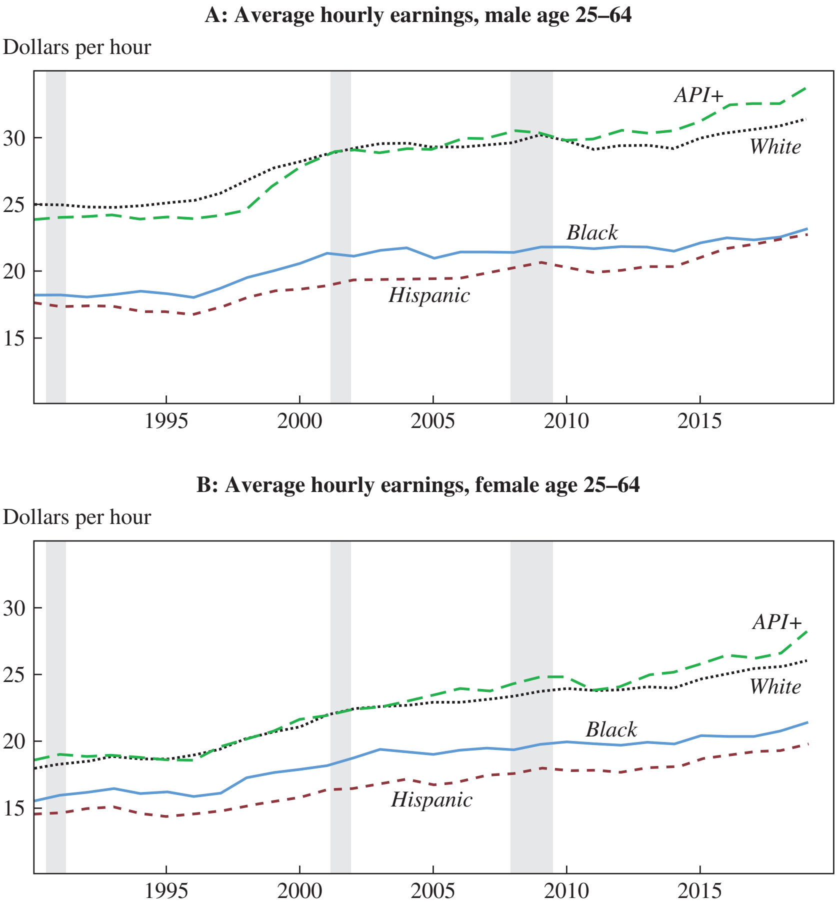
**Figure 8.** Trends in Educational Utilization (Age 25–64)




Source: Authors' calculations using CPS data.

Of course, these earnings disparities reflect in part the differences in educational attainment and educational utilization highlighted previously. But as with employment gaps, differences in education cannot account for all of the earnings gaps. One way to see this is to look at earnings gaps by educational attainment, plotted in figures 10 and 11. The figures show the white/Black, white/Hispanic, and white/API+ earnings gaps by education, computed as white average hourly earnings less the average hourly earnings for other racial or ethnic groups. The results are striking. Among men, the white/Black earnings gap is consistently larger for those

**Figure 9.** Trends in Real Average Hourly Earnings in 2019 Dollars

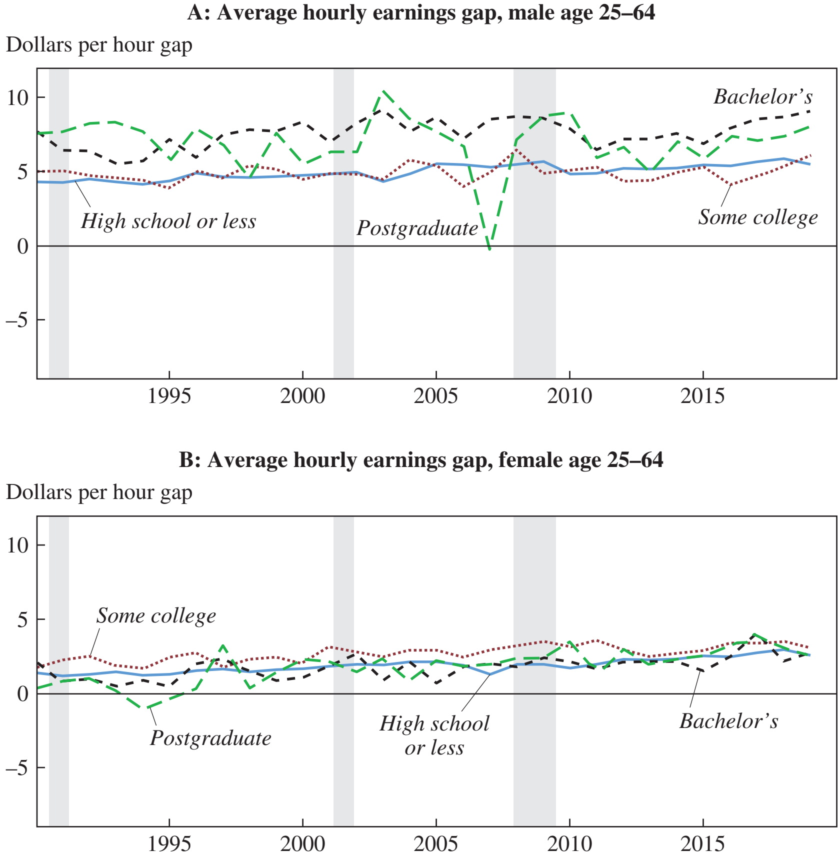



Source: Authors' calculations using CPS data.

with a bachelor's degree or higher, but sizable gaps exist for all education groups. Black women have a smaller earnings gap after controlling for education, but it has been steadily growing since 1990 for all education levels.

Although the earnings gaps for Hispanic men are somewhat smaller, gaps do exist for all levels of educational attainment. Similar to the pattern for Black men, increased education does not mean a smaller earnings gap. Hispanic men with a bachelor's or postgraduate degree have roughly the

**Figure 10.** White/Black Trends in Real Average Hourly Earnings Gaps by Education in 2019 Dollars

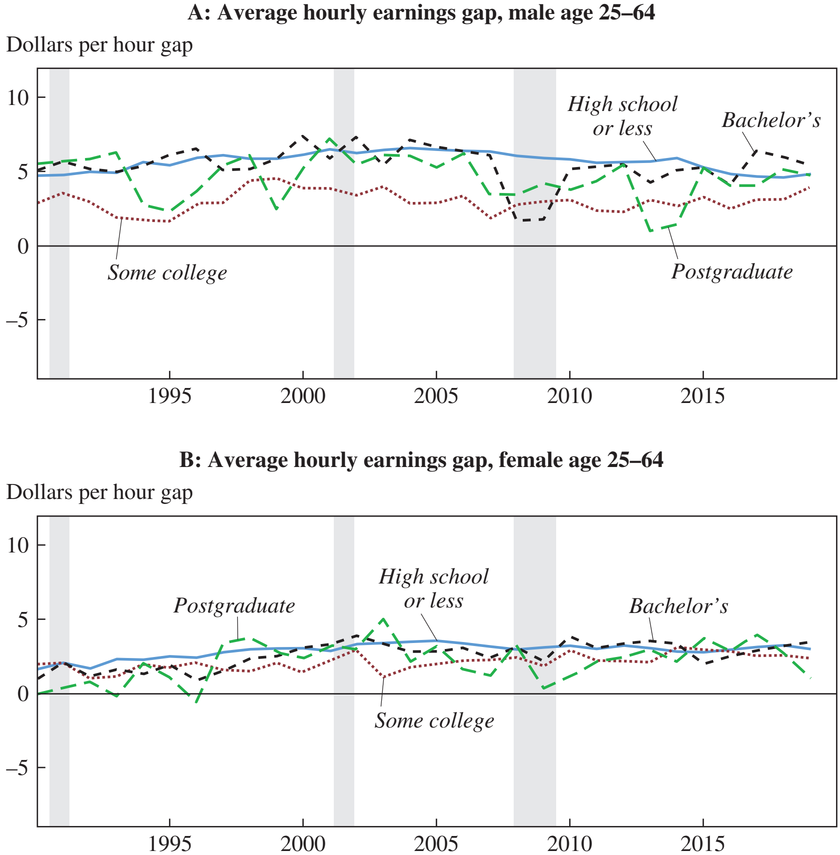



Source: Authors' calculations using CPS data.

same earnings gaps in 2019 as Hispanic men with a high school education or less. Hispanic women have even smaller earnings gaps, but like their male counterparts, there is little difference in the gaps by education.

Finally, figure 12 shows the patterns in earnings by education for API+ men and women. Among API+ men, those with less than a bachelor's degree have positive, although relatively small, earnings gaps compared to equally educated white men. In contrast, API+ men with a bachelor's degree or more earn more than their white counterparts on average, producing a negative earnings gap. This was not always the case, but it started to shift

**Figure 11.** White/Hispanic Trends in Real Average Hourly Earnings Gaps by Education in 2019 Dollars

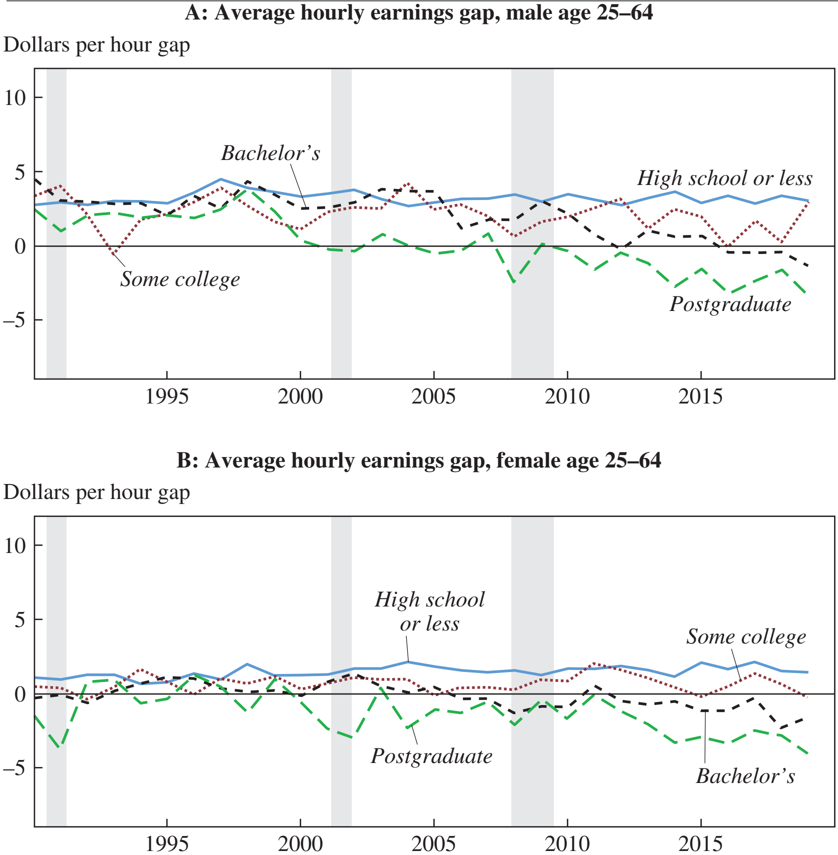



Source: Authors' calculations using CPS data.

in the 2000s for postgraduates and in the 2010s for those with a bachelor's degree. A similar pattern can be seen for API+ women. There are relatively small gaps for those with high school or less and negative gaps for those with a bachelor's degree or more.

Taken together, these trends document large and persistent gaps in labor market outcomes by race and ethnicity. These gaps reflect a variety of factors including ones that are easy and hard to measure. Whatever the cause, the disparities highlight inherently large gains from more equal outcomes. We turn to this now.

**Figure 12.** White/API+ Trends in Real Average Hourly Earnings Gaps by Education




Source: Authors' calculations using CPS data.

## II. Closing Labor Market Gaps—Previous Literature

Although most of the research on labor market disparities by race and ethnicity focuses on why gaps exist across groups, a recent set of studies has looked at the toll these disparities take on the economy or, said differently, how much better the economy would be doing if the gaps were erased. The findings point to large gains in GDP. For example, Hsieh and others (2019) examine the effect on aggregate productivity of the convergence in the occupational distribution between 1960 and 2010. They use a structural model to examine how much of the gain in productivity during this period is associated with reductions in barriers to entry for women and Black workers. They estimate that the improved allocation of talent contributed between 20 percent and 40 percent of the total growth in aggregate market output per person during this period. They use a general equilibrium model to decompose the contribution of various forces, namely, discrimination, barriers to human capital formation, and differences in preferences or social norms. They find that lowering human capital barriers explains 36 percent of growth in GDP per person over the period, while declining labor market discrimination explains 8 percent of growth, and changing preferences explain little of the growth during this period.

Taking a nonstructural approach, Peterson and Mann (2020) conduct a simple empirical exercise to estimate the cost of Black inequality in the United States. They find that closing gaps between Black and white adults in wages, higher education, homeownership, and entrepreneurship would have generated significant additional income for saving, investing, and consumption, which would have led to a GDP boost of $16 trillion over the past twenty years and a projected $5 trillion gain over the next five years. Noel and others (2019) consider a similar question but focus on wealth. Through the lens of an Oxford model, they examine what closing the Black/white wealth gap by 2028 would do to aggregate GDP, using income, tangible investments, and stock market investments as components of wealth. They find that closing these gaps would increase aggregate output by 4–6 percent by 2028.

Other authors have considered the impact of closing more specific racial and ethnic gaps. For example, Turner (2018) focuses on closing the racial earnings gap associated with disparities in health, education, incarceration, and employment opportunities. The exercise sets earnings for minority groups, further divided by age and gender, to the average earnings of their non-Hispanic white counterparts. She finds that closing these gaps today would increase GDP by 22 percent by 2050, for a corresponding gain of $8 trillion. In a similar exercise, Treuhaft, Scoggins, and Tran (2014) estimate gains in average annual income and GDP under a hypothetical scenario in which there is no inequality of earnings or employment by race or ethnicity. The authors estimate the actual average annual income and hours of work for each racial and ethnic group, as well as projected values under the assumption that all racial and ethnic groups had the same average annual income and hours of work, by income percentile and age group, as the non-Hispanic white population. The projected values are then applied to the individual level for all racial and ethnic groups other than non-Hispanic white individuals. They find that closing these racial gaps in 2012 would have increased GDP by 14 percent or $2.1 trillion that year.

Each of these empirical studies imagines a counterfactual world in which gaps by race and ethnicity do not exist and then computes the effect on aggregate GDP and some set of its components. Our paper adds to this literature. We make three contributions. First, we consider closing the gap for a wider span of racial and ethnic groups, including Black, Hispanic, and API+. Previous studies have tended to focus on closing gaps for a narrower set of demographic groups, such as Black people and women. Second, we perform our analysis annually for thirty years, from 1990 to 2019, and examine how the potential gains from greater labor market equity have changed over time. Finally, we investigate which outcome gaps among employment, hours, educational attainment, educational utilization, and residual earnings account for the GDP gains we find and whether these key drivers have remained constant or changed over time. These additions expand the scope of past work and provide additional insights into the areas policymakers might focus on to create positive change.

## III. The GDP Gains from Eliminating Racial and Ethnic Gaps

The starting point for our analysis is the basic GDP math that expresses aggregate output, $Y$, as a function of physical capital, $K$, and labor input, $L$, in which we hold the relationship between capital and labor fixed:

$$Y = F(K, L). \tag{1}$$

The size of aggregate output depends on the amount of capital and labor used. This means that the gaps in labor market outcomes, like the ones shown in section I, translate directly into lower aggregate output.

The exercises that follow take this basic GDP math to the CPS data to examine how making the labor market outcomes for Black, Hispanic, and API+ individuals age 25–64 at least as favorable as their non-Hispanic white counterparts would have changed aggregate output in the United States over the past three decades.

### *III.A. Simple Counterfactual*

We begin with a simple exercise that highlights the intuition of our experiments and ties us back to the results of previous research. Using data from the CPS for 2019, we select individuals age 25–64 who are not self-employed. We then compute the shares of this group who report being

**Table 1. GDP Gain from Eliminating Minority Earnings Gaps in 2019**

| | *Overall population age 25–64 (in millions)* | *Group share of sample* | *Group average annual earnings*[a] | *Total group-specific earnings (in trillions)* |
|---|---|---|---|---|
| *Observed labor earnings contribution to GDP* | | | | |
| White | 155 | 0.60 | 46,397 | 4.31 |
| Black | 155 | 0.13 | 32,554 | 0.65 |
| Hispanic | 155 | 0.18 | 32,761 | 0.92 |
| API+ | 155 | 0.09 | 47,430 | 0.68 |
| Total | — | — | — | 6.56 |
| *Counterfactual labor earnings contributions to GDP* | | | | |
| White | 155 | 0.60 | 46,397 | 4.31 |
| Black | 155 | 0.13 | 46,397 | 0.93 |
| Hispanic | 155 | 0.18 | 46,397 | 1.30 |
| API+ | 155 | 0.09 | 47,430 | 0.68 |
| Total | — | — | — | 7.21 |

a. This average is calculated inclusive of zeros, that is, if someone is unemployed, they are still included in the calculation and their earnings are set as zero.

Source: Authors' calculations using CPS data.

Note: Sample excludes self-employed individuals.

Black, Hispanic, API+, and white. Next, we compute average annual labor earnings by group, including those with and without positive earnings to account for differences in employment rates across groups. The data are shown in the top panel of table 1.

Multiplying the population total by that group's population share and by average annual earnings for each group yields the group-specific labor earnings contribution to total GDP. For example, for the white population, this calculation is 155 million $\times$ 0.60 $\times$ 46,397 = 4.31 trillion.

Using these numbers, we consider how much larger the labor earnings contribution to GDP would be if Black, Hispanic, and API+ workers had the same average earnings as white workers. Note that the earnings gaps capture the gaps in the labor market outcomes reviewed in section I as well as other unmeasured factors. This is a simple way to proxy a world in which all the labor market gaps by race and ethnicity that contribute to average earnings gaps are removed. As noted previously, we select the white population as our base group since they have long been the majority in the United States and have historically faced fewer systemic barriers in the labor market.

The results of the counterfactual exercise are reported in the bottom panel of table 1. Note that we do not change the earnings of the API+ group since their average earnings are higher than white individuals.[16] This simple exercise makes an important point: eliminating gaps in average earnings by race and ethnicity, by bringing the average earnings of minorities to at least the level of the white average, would add notably to GDP, about $0.65 trillion in additional labor input in 2019, a 10 percent increase in labor income for the US economy.

Of course, this simple exercise, which relies on closing earnings gaps, falls short of capturing all the gains from closing other gaps in labor compensation in the economy. Assuming the earnings gains apply to all labor income, we can scale up our number using data from the National Income and Product Accounts (NIPA) data from the Bureau of Economic Analysis.[17] NIPA data tell us that aggregate employee compensation in the United States in 2019 was $11.45 trillion. Multiplying our percentage gain in labor income (10 percent) by aggregate employee compensation of $11.45 trillion generates an aggregate gain to GDP of about $1.15 trillion from eliminating gaps by race and ethnicity in 2019 alone. This number is consistent with the numbers generated by prior research, including Peterson and Mann (2020) and Treuhaft, Scoggins, and Tran (2014).

### *III.B. Changes in Gains over Time*

Using this simple counterfactual exercise, we next ask whether the gains from more equal outcomes have risen or fallen over time. Two observations suggest that they might have risen. First, the trends we documented in section I show that while some labor market disparities by race and ethnicity have improved, others, especially for Black men and women, have remained stable or even worsened over time. Second, the population share of racial and ethnic minorities has been rising over the past three decades. This can be seen in table 2, which shows shares of the adult population age 25–64 who are not self-employed, by race and ethnicity. In 1990, 76 percent of this population was white, compared to 60 percent in 2019. Over the same period, the Hispanic share of the US population rose rapidly, increasing from 9 percent in 1990 to 18 percent in 2019. The API+ population share also rose and accounted for 9 percent of the US population in 2019. The share of the Black population remained relatively constant. Overall, this

16. This is a practice we maintain throughout the paper. Given the significant heterogeneity within the API+ group (Kochhar and Cilluffo 2018), our results for this group should be interpreted with caution.

17. Bureau of Economic Analysis, "Personal Income," table 6.2D; https://www.bea.gov/data/income-saving/personal-income.

**Table 2.** Share of Racial and Ethnic Minorities in US Population (Age 25–64)

| | *1990* | *2000* | *2010* | *2019* |
|---|---|---|---|---|
| White | 0.76 | 0.70 | 0.66 | 0.60 |
| Black | 0.12 | 0.12 | 0.12 | 0.13 |
| Hispanic | 0.09 | 0.12 | 0.15 | 0.18 |
| API+ | 0.04 | 0.06 | 0.07 | 0.09 |

Source: Authors' calculations using CPS data.
Note: Sample excludes self-employed individuals.

**Table 3.** Changes over Time in GDP Gain from Eliminating Minority Earnings Gaps

| | *Level gains (2019 $ in trillions)* | | | | *Percent gains* | | | |
|---|---|---|---|---|---|---|---|---|
| | *1990* | *2000* | *2010* | *2019* | *1990* | *2000* | *2010* | *2019* |
| White | — | — | — | — | — | — | — | — |
| Black | 0.15 | 0.19 | 0.25 | 0.28 | 4.04 | 3.80 | 4.56 | 4.21 |
| Hispanic | 0.11 | 0.22 | 0.31 | 0.38 | 3.06 | 4.46 | 5.67 | 5.81 |
| API+ | 0.02 | 0.02 | 0.02 | — | 0.45 | 0.31 | 0.35 | — |
| Total | 0.28 | 0.43 | 0.58 | 0.66 | 7.55 | 8.57 | 10.58 | 10.02 |

Source: Authors' calculations using CPS data.
Note: Sample excludes self-employed individuals.

suggests that the labor market gaps described in section I affect an increasing share of the US population.

Table 3 shows how these facts have affected the gains from equalizing outcomes as computed in table 1 over time. The table reports gains to group-specific earnings and total economy-wide labor earnings from bringing average earnings for minorities to at least the level of the non-Hispanic white population for 1990, 2000, 2010, and 2019. The gains are the difference between observed group-specific labor earnings each year and the counterfactual group-specific labor earnings.[18]

Beginning with the last line of the table, total GDP gains from eliminating gaps in earnings have grown considerably over time, rising from $0.28 trillion in 2019 dollars in 1990 to $0.66 trillion in 2019. Note that the value of $0.66 trillion in 2019 is the difference of the observed and counterfactual group-specific labor earnings contributions in table 1, $7.21 trillion–$6.56 trillion. Since these numbers might be rising simply because the economy has grown, we also show percentage gains to GDP in the right panel of table 3. In percentage terms, counterfactual gains from labor income have risen from about 7.6 percent in 1990 to 10 percent in 2019.

18. As in the previous exercise, if average earnings for a group are higher than for non-Hispanic white workers, we do not change them.

The patterns by race and ethnicity are also informative and capture the changes in trends in labor market gaps and population shares we discussed. For example, for Black individuals, the percentage gains from equalizing earnings to those of white individuals have remained relatively steady, boosting the labor earnings contribution to GDP by between 3.8 and 4.6 percent over the sample period. The percentage gains from equalizing earnings of Hispanic workers and non-Hispanic white workers has grown over time, owing largely to the rising share of the Hispanic population. For the API+ group, the contributions from closing gaps with the non-Hispanic white population have fallen as that group has experienced improved outcomes over time. However, as mentioned previously, this is a very heterogeneous group, so the average experience does not reflect the outcomes of many.

These simple counterfactual exercises show the potential gains to aggregate labor earnings and aggregate labor output if average earnings for racial and ethnic minorities were at least as high as white individuals. The results point to significant boosts to GDP that have been rising over time in both absolute and percentage gains. We now consider the factors contributing to these potential gains.

### *III.C. Drivers of the Gains*

The exercises so far show the inherently large gains to GDP from eliminating gaps in average annual earnings by making racial and ethnic minorities at least as well off as the average white individual. We now turn to understanding the key drivers of the gains we've computed. As shown in section I there are many disparities in labor market outcomes that add up to differences in average earnings across groups. To identify the specific contributions of these disparities, we perform a more detailed counterfactual analysis that sequentially eliminates gaps in employment, hours, educational attainment, and educational utilization. Previous research has shown that these factors are important determinants of earnings differentials by race and ethnicity.[19]

19. See, for example, Daly, Hobijn, and Pedtke (2017), Altonji and Blank (1999), and O'Neill (1990). We recognize that other measurable factors also matter, such as industry and occupation (Matthews and Wilson 2018; Daly, Hobijn, and Pedtke 2017; Del Rio and Alonso-Villar 2015) and geographic location (Cajner and others 2017; Parks 2012), as well as a host of other factors that are more difficult to measure, including differences in educational quality (Card and Krueger 1992), differences in career ladder opportunities (Daly, Hobijn, and Pedtke 2020), and discrimination, current or historical (Darity and Mason 1998; Daly, Hobijn, and Pedtke 2017; Cajner and others 2017). Although we do not separately quantify them in this analysis, their effects are accounted for in the remaining differences in average earnings once differences in employment, hours, education, and educational utilization have been eliminated.

Our more detailed counterfactual exercises imagine a world in which these gaps are eliminated one by one and compute the gains to GDP associated with each. Recognizing the heterogeneity of outcomes by age and gender, we also disaggregate the data by age and gender.

DATA AND METHODS Before we can perform our more detailed counterfactual analysis, we need to make several adjustments to the data. Beginning with the same CPS sample used in the simple counterfactual, which covers civilian noninstitutionalized adults age 25–64 who are not self-employed, we collapse the data into groups defined by thirty-two mutually exclusive age, gender, and race/ethnicity cells: two genders (male and female), four race/ethnicity groups (white, Black, Hispanic, and API+), and four ten-year age ranges (25–34, 35–44, 45–54, and 55–64). For each of these thirty-two groups, we then compute group-specific values for our analysis variables: employment, hours, educational attainment, educational utilization, and earnings.[20]

Using these data and equation (2), we can recover the observed labor earnings contribution to GDP shown in table 1 as well as the group-specific contributions by race and ethnicity:

$$Y_L = \sum_r Y_{Lr} = \sum_r \left(P * \alpha_r\right) * w_r. \tag{2}$$

$Y_L$ is the group-specific labor contribution to GDP, $P$ is the population age 25–64 who are not self-employed, $\alpha_r$ is the population share of a given race/ethnicity group, and $w_r$ is the group-specific average earnings. The labor contribution to GDP is the sum of the group-specific contributions. Substituting the white earnings value for racial and ethnic groups with negative earnings gaps, $w_{white} > w_{own}$, as in equation (3), produces the simple counterfactual (SC) shown in table 1:

$$Y_L^{SC} = \sum_r Y_{Lr} = \sum_r \left(P * \alpha_r\right) * w_r^{SC}. \tag{3}$$

Following this same logic, it is straightforward to perform a more detailed counterfactual exercise that adjusts the drivers of the observed earnings gaps of the employed, including employment, hours worked, education, and education utilization. And we can do this over more narrowly defined

20. These variables are defined as in section I. We adjust all values to reflect annual totals.

groups that separate the data by age, gender, and race/ethnicity. Equation (4) shows how this is done:

$$Y_L = \sum_{a,g,r} Y_{L_{a,g,r}} = \sum_{a,g,r} \left(P * \alpha_{a,g,r}\right) * e_{a,g,r} * h_{a,g,r} * w_{a,g,r}, \tag{4}$$

where $Y_{L_{a,g,r}}$ is the group-specific labor contribution to GDP, $P$ is the population age 25–64 who are not self-employed, $\alpha_{a,g,r}$ is the population share of a given age/gender/race/ethnicity group, $e_{a,g,r}$ is the group-specific employment rate, $h_{a,g,r}$ is the group-specific average hours, and $w_{a,g,r}$ is the group-specific average hourly wage. The counterfactual labor contribution to GDP, $Y^C_{L_{a,g,r}}$, is the sum of the age/gender/race/ethnicity group-specific contributions accounting for adjustments to the underlying variables. The specific steps of this calculation are as follows.

***Step 1: Adjust employment rates*** Calculate the counterfactual employment rate as the white employment rate for each age/gender group:

$$e^C_{a,g,r} = e_{a,g,white}. \tag{5}$$

Substitute the counterfactual employment rate for the observed employment rate in all cases where

$$e^C_{a,g,r} > e_{a,g,own}. \tag{6}$$

Recompute labor input with the adjusted employment rate, holding hours, education, education utilization, and average earnings at the own group-specific values:

$$Y^C_{L_{a,g,r}} = \left(P * \alpha_{a,g,r}\right) * e^C_{a,g,r} * h_{a,g,r} * w_{a,g,r}. \tag{7}$$

The difference between the employment-adjusted counterfactual contribution and the observed contribution of labor earnings to GDP is the GDP effect of closing employment gaps by race and ethnicity. The next step is to add the hours adjustment.

***Step 2: Average weekly hours*** Conditional on employment, calculate the counterfactual average weekly hours as the non-Hispanic white hours for each age/gender group:

$$h^C_{a,g,r} = h_{a,g,white}. \tag{8}$$

Substitute the counterfactual hours for the observed hours in all cases where

$$h^{C}_{a,g,r} > h_{a,g,own}. \tag{9}$$

Recompute labor input with adjusted employment rate and hours, holding education, education utilization, and average earnings at the own group-specific values:

$$Y^{C}_{L_{a,g,r}} = \left(P * \alpha_{a,g,r}\right) * e^{C}_{a,g,r} * h^{C}_{a,g,r} * w_{a,g,r}. \tag{10}$$

The difference between the employment-adjusted counterfactual contribution and the employment- and hours-adjusted counterfactual contribution is the additional GDP effect of closing hours gaps by race and ethnicity. We next turn to education and education utilization.

***Step 3: Educational attainment*** Adjustments to education and education utilization affect the return on labor input, or average earnings, $w_{a,g,r}$. So we begin by adjusting the distribution of education by race and ethnicity for each of our age/gender cells using the following steps.

Conditional on employment, shift the whole vector of education (*ed*) for a race/ethnicity group if the sum of the shares of those with some college, a bachelor's degree, or a postgraduate degree is less than the non-Hispanic white share for that age/gender group:

$$ed^{C}_{a,g,r} = ed_{a,g,white}. \tag{11}$$

Substitute the counterfactual educational distribution for the observed educational distribution in all cases where

$$ed^{C}_{a,g,r} > ed_{a,g,own}. \tag{12}$$

Recompute labor input with adjusted employment rate, hours, and education, holding education utilization, and average earnings at the own group wage for an age/gender/race/ethnicity group conditional on being employed.

Equalizing the distribution in education by race and ethnicity so that it is at least at the level of the white population, boosts the average wage for the affected groups, $w^{C'}_{a,g,r}$:

$$Y^{C}_{L_{a,g,r}} = \left(P * \alpha_{a,g,r}\right) * e^{C}_{a,g,r} * h^{C}_{a,g,r} * w^{C'}_{a,g,r}. \tag{13}$$

The difference between the employment- and hours-adjusted counterfactual contribution and the employment-, hours-, and education-adjusted counterfactual is the additional GDP effect of closing gaps in the education distribution by race and ethnicity. The next step is to add in utilization.

***Step 4: Education utilization*** Conditional on employment, calculate the counterfactual utilization distribution ($u$) as the white utilization:

(14) $$u^{C}_{a,g,r} = u_{a,g,white}.$$

Substitute the counterfactual utilization distribution for the observed utilization distribution in all cases where

(15) $$u^{C}_{a,g,r} > u_{a,g,own}.$$

Recompute labor input with the adjusted employment rate, hours, education, and education utilization, holding average earnings at the group-specific wage conditional on employment. Like the adjustment to the distribution of education, changing education utilization for racial and ethnic minorities so that they are at least as well utilized as white individuals boosts average earnings for the group, expressed as $w^{C''}_{a,g,r}$:

(16) $$Y^{C}_{L_{a,g,r}} = \left(P * \alpha_{a,g,r}\right) * e^{C}_{a,g,r} * h^{C}_{a,g,r} * w^{C''}_{a,g,r}.$$

The difference between the employment-, hours-, and education-adjusted counterfactual contribution and the employment-, hours-, education-, and education utilization–adjusted counterfactual contribution is the additional GDP effect of closing gaps in the utilization distribution by race and ethnicity.

***Step 5: Residual earnings*** The final step in the process is to calculate the contribution of residual average earnings gaps that are not explained by differences in employment, hours, education, and education utilization. We compute this residual as

(17) $$w^{res} = Y^{SC}_{L} - Y^{C}_{L}.$$

This difference is the contribution to total gains made by factors not accounted for in our analysis. These could be other observable factors, such as industry and occupation, as well as less observable ones, such as discrimination or other barriers.

**Table 4.** GDP Gains and Percentage Contribution from Eliminating Minority Labor Market Gaps

| | *Employment rate* | *Hours* | *Education* | *Utilization* | $w^{res}$ | *Total CPS* | *Total NIPA* |
|---|---|---|---|---|---|---|---|
| *Labor earnings contribution—level gains in trillions of 2019 dollars* | | | | | | | |
| 1990 | 0.07 | 0.02 | 0.04 | 0.00 | 0.14 | 0.27 | 0.46 |
| 2019 | 0.15 | 0.06 | 0.19 | 0.04 | 0.29 | 0.73 | 1.28 |
| *Labor earnings contribution—percentage gains* | | | | | | | |
| 1990 | 2.1 | 0.7 | 1.2 | 0.1 | 3.8 | 7.9 | — |
| 2019 | 2.2 | 0.9 | 2.9 | 0.6 | 4.5 | 11.1 | — |
| *Share contribution to GDP* | | | | | | | |
| 1990 | 26.5 | 8.6 | 15.2 | 1.7 | 48.0 | | |
| 2019 | 20.0 | 8.3 | 26.3 | 5.6 | 39.8 | | |

Source: Authors' calculations using CPS data.
Note: Sample excludes self-employed individuals.

### *III.D. Main Results*

The results of our more detailed counterfactual exercise are displayed in table 4. For simplicity the table shows results for 1990 and 2019.[21] The first thing to note is that the estimated gains from our more detailed counterfactual are slightly larger in each year than in the simple counterfactual. For example, in 2019 the estimated gains from the detailed counterfactual are \$0.73 trillion, as compared to \$0.65 trillion in the simple counterfactual. This reflects the additional disaggregation by age and gender incorporated into this exercise, primarily the significant heterogeneity by gender reported in section I, although age also matters. Importantly, as we will show, the additional disaggregation does not affect the patterns over time, just the levels and percentage gains relative to observed GDP.

The second thing to note is that, as in the simple counterfactual results reported in table 3, the gains from closing gaps by race and ethnicity have risen over time, in both absolute and percentage terms. This can be seen in the second-to-last column of the first two panels of table 4. Looking at the level gains, closing labor market gaps related to earnings of non-self-employed individuals age 25–64 in 1990 would have resulted in \$0.27 trillion of additional GDP. Scaling this to apply to all labor compensation for all workers, using the NIPA data, the total gain to GDP would have been \$0.46 trillion, as shown in the final column of the first two panels. By 2019, these values had risen to \$0.73 trillion and \$1.28 trillion, respectively.

21. The results for the other years in our sample follow the trends reported in table 3.

Turning to the drivers of the gains, as seen in the bottom panel of table 4, the results show that employment and educational attainment make the largest contributions among the analysis variables, although their relative importance has shifted over time.[22] For example, in 1990, differences in employment were more important than differences in education. The reverse was true in 2019. Turning to hours and utilization, they matter but their effects are small relative to employment and education. That said, over time, educational utilization, like educational attainment, has become an increasingly important contributor to the potential gains from greater labor market equity. The importance of hours has stayed relatively constant over the period.

Finally, consistent with prior research, residual earnings gaps, $w^{res}$, play a large role in generating the overall gains to GDP we compute. This is consistent with prior research that finds significant earnings gaps remain for racial and ethnic minorities even when controlling for a large number of explanatory factors (Daly, Hobijn, and Pedtke 2017; Cajner and others 2017). In our analysis, residual earnings gaps account for about 48 percent of the gains in 1990 and 40 percent in 2019.

DIFFERENCE IN DRIVERS ACROSS RACE/ETHNICITY AND GENDER The main results presented in the prior sections highlight the important role that employment, education, and residual earnings play in explaining the total gains to GDP that we calculate in our simple counterfactual. In this section, we further examine the relative importance that these factors play within each racial or ethnic minority group. We also examine whether these overall patterns differ when considering both race/ethnicity and gender. Table 5 shows the percentage contribution to the group-specific GDP gains of each of our key drivers: employment, hours, education, utilization, and $w^{res}$, for our three race/ethnicity groups in 1990 and 2019. The sum across the columns equals 100, with rounding error. The first panel shows the contributions for the total sample, which is a replication of the last panel in table 4, repeated for convenience of comparison across groups. The next three panels repeat the exercise for Black, Hispanic, and API+ groups, inclusive of both men and women.

Comparing the last three panels, it is immediately clear that the drivers of the overall gains differ considerably by race and ethnicity. For Black individuals, education plays less of a role and residual earnings gaps play

22. When comparing these findings to prior research it is important to keep in mind that we have made sequential adjustments, meaning that as we move across the table the values show the additional gains to GDP from adjusting each variable.

**Table 5. Share Contribution to Group-Specific GDP Gains by Race**

| | *Employment rate* | *Hours* | *Education* | *Utilization* | $w^{res}$ |
|---|---|---|---|---|---|
| *All* | | | | | |
| 1990 | 26.5 | 8.6 | 15.2 | 1.7 | 48.0 |
| 2019 | 20.0 | 8.3 | 26.3 | 5.6 | 39.8 |
| *Black* | | | | | |
| 1990 | 23.6 | 8.6 | 16.9 | 1.2 | 49.6 |
| 2019 | 21.8 | 5.5 | 18.2 | 4.8 | 49.6 |
| *Hispanic* | | | | | |
| 1990 | 22.3 | 6.0 | 29.0 | 1.5 | 41.2 |
| 2019 | 12.8 | 6.7 | 41.2 | 6.9 | 32.4 |
| *API+* | | | | | |
| 1990 | 41.9 | 13.3 | –1.1 | 3.7 | 42.2 |
| 2019 | 46.4 | 24.4 | –5.8 | 4.4 | 30.5 |

Source: Authors' calculations using CPS data.
Note: Sample excludes self-employed individuals.

a much larger role. This is true in both 1990 and 2019. Notably, for Black individuals there is no change in the role that residual earnings gaps play over time, consistent with the literature that finds little progress in reducing residual earnings gaps over the sample period (Daly, Hobijn, and Pedtke 2017; Cajner and others 2017). For Hispanic individuals, the role of gaps in educational attainment and educational utilization increased notably between 1990 and 2019, as the role of employment fell. In 2019, closing gaps in education, once gaps in employment and hours were eliminated, accounted for 41 percent of the overall gains to GDP from the Hispanic group. Finally, for API+, closing gaps in employment are the primary driver of gains, accounting for 42 percent of the total gains in 1990 and 46 percent in 2019. Hours also matter more for API+ than for other groups.

Our final table further disaggregates the results to consider race and gender. The trends in section I pointed to large differences by gender in many of the key variables. Table 6 repeats the analysis in table 5 by race and gender. Beginning with the results for Black men and women, a couple of differences stand out. First, employment gaps and hours gaps play a larger role for Black men than Black women, especially in 2019. Second, gaps in educational attainment, adjusting for employment and hours, are significantly more important for Black women than for Black men. For both groups, closing residual earnings gaps explains about half of the total computed gains to GDP.

**Table 6.** Share Contribution to Group-Specific GDP Gains by Race and Gender

| | *Employment rate* | *Hours* | *Education* | *Utilization* | $w^{res}$ |
|---|---|---|---|---|---|
| *Black males* | | | | | |
| 1990 | 22.8 | 11.2 | 14.4 | 1.3 | 50.3 |
| 2019 | 26.0 | 7.8 | 11.4 | 4.2 | 50.7 |
| *Black females* | | | | | |
| 1990 | 26.2 | 0.0 | 25.4 | 0.9 | 47.5 |
| 2019 | 11.5 | 0.0 | 35.2 | 6.6 | 46.8 |
| *Hispanic males* | | | | | |
| 1990 | 9.6 | 9.4 | 29.6 | 1.6 | 49.7 |
| 2019 | 2.1 | 8.3 | 41.5 | 7.6 | 40.5 |
| *Hispanic females* | | | | | |
| 1990 | 44.9 | 0.0 | 27.9 | 1.3 | 25.9 |
| 2019 | 26.4 | 4.8 | 40.7 | 6.0 | 22.0 |
| *API+ males* | | | | | |
| 1990 | 30.2 | 19.5 | –0.7 | 1.8 | 49.4 |
| 2019 | 28.7 | 35.5 | –3.3 | 3.3 | 35.8 |
| *API+ females* | | | | | |
| 1990 | 66.8 | 0.0 | –1.9 | 7.8 | 27.2 |
| 2019 | 73.1 | 7.4 | –9.1 | 6.1 | 22.5 |

Source: Authors' calculations using CPS data.
Note: Sample excludes self-employed individuals.

There are even larger differences between Hispanic men and women when it comes to employment and residual earnings gaps. Employment gaps play a much larger role for Hispanic women than Hispanic men. In contrast, residual earnings gaps play a larger role for Hispanic men compared to Hispanic women. For both Hispanic men and women, closing educational attainment gaps accounts for the largest share of gains to GDP in 2019.

The last two panels show results for API+ men and women. Among API+ men, differences in hours play an outsized role relative to other groups. Moreover, the importance of hours has risen over time. Residual earnings gaps also play an important role, although their contribution has fallen over time. For API+ women, gaps in employment rates are by far the largest contributor, explaining about 67 percent of the gains in 1990 and 73 percent in 2019. The importance of hours gaps has increased over time but remains small relative to API+ men. Residual earnings gaps matter, but similar to Hispanic women, are small relative to most other groups.

The results of this disaggregation highlight an important point. When studying economic outcomes by race and ethnicity it is critical to look beneath simple averages. There are significant differences in experiences by race and ethnicity and by gender that make it vital to be as detailed as the data will permit. Building a complete picture of the gaps across these more narrowly defined groups is vital for shaping our understanding and for building the policies needed to resolve them.

### *III.E Discussion and Caveats*

Our main results show how closing gaps in labor market variables by race and ethnicity, moving all groups to at least the levels of the white population, would boost the overall level of GDP in the nation. The gains are large and point to significant increases in overall economic output from greater labor market equity: \$0.73 trillion in labor earnings in 2019 which, when scaled to match total labor compensation, amount to \$1.28 trillion. Our results also show that the gains from equity have risen over time, as the fraction of racial and ethnic minorities in the population has increased. Adding up the counterfactual contributions over the thirty-year period of our sample, 1990 through 2019, totals \$15.2 trillion in labor earnings, and \$25.6 trillion in total labor compensation.

Given that the population share of racial and ethnic minorities is expected to rise further in the future, the gains from equity will continue to grow. Using population projections from the Census Bureau and our 2019 contribution values, we estimate total gains to labor earnings from closing racial and ethnic labor market gaps.[23] We project gains in labor earnings of \$0.9 trillion in 2030, compared to \$0.73 in 2019, which would scale to even higher values of total labor compensation.

Of course, our calculation does not take into account any of the general equilibrium effects of making these changes. One important general equilibrium effect is that the overall wages could adjust in response to higher employment rates and greater hours worked of racial and ethnic minorities. Our base case assumes that eliminating employment and hours gaps by race and ethnicity has no effect on wages—the economy just scales up to absorb the new labor supply. But theory tells us that some adjustments are likely. Although there is not much recent research on this topic for the overall labor market, there is literature on the impact of immigration on the wages of native workers. In general this literature finds small effects, with wage elasticities ranging from 0.1 to –0.1 (Peri 2014).[24] Applying the largest adjustment

23. US Census Bureau, "Data," https://www.census.gov/programs-surveys/popproj/data/datasets/2017/demo/popproj/2017-popproj.html. We use the main series from data set 1.

24. Peri (2014) reviews twenty-seven empirical studies and finds that two-thirds of them estimate wage elasticities between –0.1 and 0.1.

(−0.1) to our results reduces our estimated gains to labor earnings in 2019 from \$0.73 trillion to \$0.71 trillion. Over the thirty years of our sample, the gains to labor earnings would fall from \$15.2 trillion to \$14.7 trillion, with total labor compensation falling from \$25.6 trillion to \$24.8 trillion.

So far, we have discussed why the results might be lower than our estimate. But they could also be higher. Research has shown that the direct gains to greater equity in the labor market are only the beginning. More equitable allocation of talent by education, employment, and jobs improves innovation, invention, and entrepreneurship, which set the foundation for growth today and growth in the future (Bell and others 2019; Aghion and others 2018). And a growing body of research finds that including more people in the economy from different backgrounds allows for more diverse teams, which contributes to better performance. For example, Kline, Rose, and Walters (2021) find that racially discriminatory hiring practices among firms are negatively correlated with firm profitability, while Herring (2009) finds that among for-profit business organizations, racial diversity in the workforce is associated with positive performance indicators like increased sales revenue, greater market share, and greater relative profits. This type of research suggests that investments and actions by private sector businesses to close labor market gaps can directly benefit their bottom line. All of these impacts are outside of our baseline calculations and could boost the gains beyond what we have measured.

## IV. Conclusion and Future Research

The opportunity to participate in the economy and to succeed based on ability and effort is at the foundation of our nation and our economy. Unfortunately, structural barriers have persistently disrupted this narrative for many Americans, leaving the talents of millions of people underutilized or on the sidelines. The result is lower prosperity, not just for those affected, but for the economy as a whole.

Here we have put forth some initial estimates of the economic gains from equalizing outcomes for minorities to at least the level of the non-Hispanic white population. The gains are large and persistent and likely to increase further in the future. So what is holding us back? If the gains to equity are so large, why haven't we been able to close the gaps?

The answers often lie beyond the economics literature, and a large body of multidisciplinary research points to some of the hurdles. For one, many of the structural barriers we see have become deeply embedded in our society and economy, the result of historic discriminatory policies and practices, such as Jim Crow laws and redlining, which have left enduring impacts on many racial and ethnic minorities (Rothstein 2017; Oliver and Shapiro 1995; Denton and Massey 1993).[25] The accumulation of these inequities over multiple decades and generations suggests that achieving equity will take time and significant investment. It won't be as easy as declaring them gone.

This is clear when looking at the long history of trying to reduce barriers in educational attainment. Eliminating the differences in human capital investment by race and ethnicity will likely take a large influx of resources over a number of years and the returns on investment likely won't accrue until well into the future. But when they are made, the evidence shows they pay off. A good example is the return on high-quality early childhood education programs. García and others (2020) find that such programs improve educational attainment and labor income later in life. In their particular study, they documented a 13 percent annual rate of return, net of the cost of financing the programs. Of course, closing gaps in labor market income also contributes to closing racial wealth gaps (Aliprantis and Carroll 2019). And this is important for future gains, producing the positive cycle of "wealth begets wealth" (Black and others 2020) that has been so important to intergenerational success.

Investments in reducing other gaps will also take up-front investment and likely produce only downstream benefits. This means that future research needs to focus on multiyear analysis that enables policymakers to evaluate the costs and benefits for cohorts and generations rather than just annually, where the investments don't always pencil out. It will also be important for future research to be interdisciplinary, combining the economics of closing gaps with the social and community benefits of improved equity.

All of this work will call for a new mindset—a mindset that sees large gaps by race and ethnicity as inefficient and a sign of misallocation, rather than an unfortunate, but efficient, outcome of a well-functioning market. Williams and Spriggs (1999), Mason and Williams (1997), and Darity and Williams (1985), among others, have noted that prevailing economic models, which assume efficient market outcomes, are challenged to deliver results that highlight the economic losses associated with the existence and persistence of labor market and other disparities.[26] Their point, as we read

25. Other examples that have been cited in the literature are governance structures imposed on Native Americans (Dippel 2014) and the internment of Japanese Americans (Chin 2005).

26. This point was also made by William Spriggs and Sendhil Mullainathan during Racism and the Economy: Focus on the Economics Profession, a virtual session hosted by all twelve district banks of the Federal Reserve System on April 13, 2021.

it, is that if economic models start with the assumption that markets work perfectly, it naturally follows that persistent barriers, which limit productivity, would be removed by profit-seeking entrepreneurs. This then implies that remaining gaps are best explained by differences in productivity, even if hard to measure, or differences in group-specific preferences that drive people to sort by race and ethnicity into specific types or intensities of work. A long literature on persistent gaps follows this model.

But what if we started from a different vantage point and asserted that talent and innate preferences were distributed equally across racial and ethnic groups? This would naturally suggest that disparate outcomes were a misallocation and open the door for researchers to investigate how they might have arisen, including explanations related to historical and current differentials in investment, access, and labor market treatment. With considerable pressures weighing on US economic potential in coming decades, the time seems right to take a new perspective and imagine what's possible if equity is achieved.

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