RESEARCH BRIEF

Task-Based Discrimination

Based on BFI Working Paper No. 2021-40, "Task-Based Discrimination," by Erik Hurst, Frank P. and Marianne R. Diassi Distinguished Service Professor of Economics, UChicago's Booth School; Yona Rubinstein, Professor, London School of Economics; and Kazuatsu Shimizu, BFI Pre-Doctoral Research Professional

KEY TAKEAWAYS

- The mean demographically adjusted racial wage gap fell substantively between 1960 and 1980. However, since 1980, the racial wage gap has remained roughly constant.
- This pathbreaking work shows how the changing demand for certain tasks interacts with notions of discrimination and racial skill gaps in driving trends in wages across racial groups.
- The evolution of the racial wage gap between Black and White men reflects both race-specific and aggregate forces. Between 1960 and 1980, declining taste-based discrimination, a narrowing of the racial skill gap, and changes in aggregate task prices all worked to narrow the racial wage gap. However, since 1980, the effect of declining racial skill gaps and discrimination was offset by the increasing returns to *Abstract* tasks.

One puzzle for researchers in recent decades surrounds two seemingly contradictory facts: The wage gap between Black and White men has remained stubbornly large in recent decades while, over the same period, racial discrimination has steadily declined. This divergence has occurred even as the racial gap in test scores, conditional on education, has also narrowed.

What explains this mystery? In "Task-Based Discrimination," Erik Hurst, Yona Rubinstein, and Kazuatsu Shimizu introduce a new model of discrimination that suggests the answer lies with a phenomenon they term *task-based discrimination*. This pathbreaking model describes how the changing demand for certain tasks interacts with notions of discrimination and racial skill gaps in driving trends in wages across racial groups. Discrimination as revealed in wage gaps, in other words, may have evolved or developed along with the changing nature of work. Their key finding, that the Black-White wage gap would have shrunk by about 7 percentage points between 1980 and 2018 if the wage premium to task requirements were held at their 1980 levels, has important implications for policymakers and others interested in understanding wage gaps.

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Four Occupational Task Measures

Abstract: Indicates the degree to which the occupation demands analytical flexibility, creativity, reasoning, and generalized problem-solving, as well as complex interpersonal communications such as persuading, selling, and managing others.

Occupations include various medical professionals, various engineers, various managers, accountants, software developers, high school teachers, college professors and judges.

Routine: Measures the degree to which the task requires the precise attainment of set standards and/or repetitive manual tasks.

Occupations include secretaries, dental hygienists, bank tellers, machinists, textile sewing machine operators, dressmakers, x-ray technology specialists, meter readers, pilots, drafters, auto mechanics, and various manufacturing occupations.

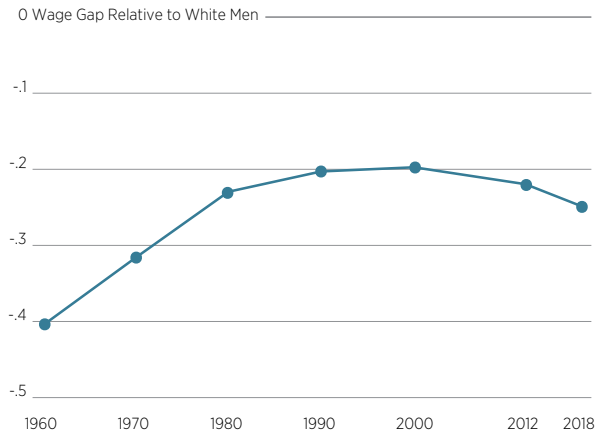
Manual: Measures the degree to which the task demands eye, hand, and foot coordination.

Occupations include athletes, police and firefighters, drivers (taxi, bus, truck), skilled construction (e.g, electricians, painters, carpenters) and landscapers/groundskeepers.

Contact: Measures the extent that the job requires the worker to interact and communicate with others, both within and without the organization.

Occupations include various health care workers, waiter/waitress, salesclerks, lawyers, various teachers, and various managers.

Figure 1 · Trends in Black-White Wage Gaps Since 1960, Census/ACS Data



Notes: This figure shows the trend in the demographically adjusted Black-White gap in log wages using Census/ACS sample. Wage gaps are conditional on individual age and education dummies.

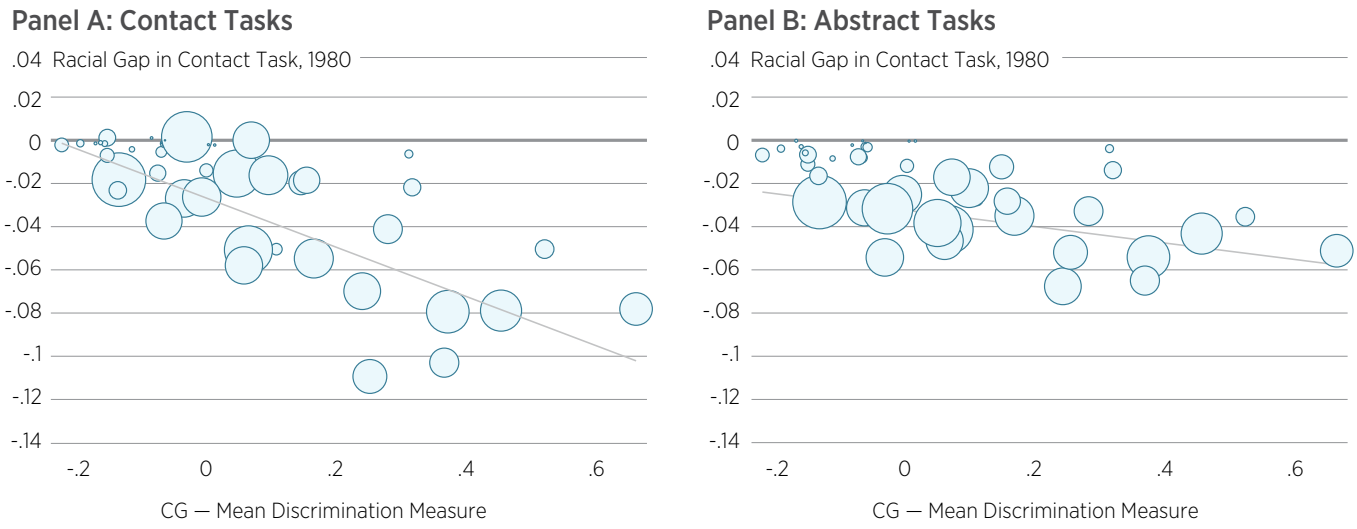
Less discrimination and continuing disparity?

To begin our review of the authors findings, let's begin with a look at the accompanying Figure 1, which displays the demographically adjusted log wage gap between White and Black men over the last six decades in the United States. As we can see, the mean demographically adjusted racial wage gap fell substantively between 1960 and 1980. However, since 1980, the racial wage gap has remained roughly constant at around 20 log points. This stagnation has occurred even with a notable drop in reported measures of racial discrimination in national opinion surveys, and the narrowing of the racial gap in test scores conditional on education in household surveys.

Taken together, the stagnation of Black's relative wages since the early 1980s, along with a decline in reported discriminatory attitudes against Blacks and the narrowing of racial gaps in cognitive achievement, are not fully explained by existing economic theories. The authors' new model of task-based discrimination addresses this gap by integrating notions of both taste-based discrimination (where employers hold less favorable attitudes toward minorities) and statistical-based discrimination (where employers use group data about human capital, for example, and project those data onto an individual) into a unified model of discrimination.

This model allows the authors to analyze how the changing demands for certain tasks interact with notions of discrimination and racial skill gaps in driving trends in wages across racial groups. At the heart of the model is that different occupations require a different mixture of tasks, which in turn demand certain market skills and degrees of interaction among workers and customers.

Figure 2 · Racial Gaps in Contact and Abstract Tasks vs Survey Measures of Taste Based Discrimination, State Level Variation



Notes: This figure shows state-level conditional racial gaps in the Contact task content of jobs (Panel A) and the Abstract task content of jobs (Panel B) against the Charles-Guryan mean measures of state level prejudice. Racial gaps in the task content of jobs measured using the 1980 U.S. Census. Gaps are conditioned on age and education as in equation (1. Each observation is a U.S. state with the size of circle measuring the number of Black individuals in the state in the 1980 Census.

Consequently, and importantly, the relative intensity of taste-based versus statistical discrimination varies across occupations depending on the exact mix of tasks required in each occupation.[1] The expectation, then, is that taste-based discrimination would be more prevalent in occupations with more social interactions, while statistical discrimination would take prominence in tasks where there are large racial skill gaps. The authors employ their analytical framework to interrogate these assumptions and they offer the following three contributions:

1. New facts about labor sorting

The authors characterize occupational skills along four key labor demand factors—*Abstract, Routine, Manual,* and *Contact*—described in the accompanying sidebar. The last measure, Contact, is new to the research literature and provides a measure of labor market activities where taste-based discrimination is likely to be the most salient because the task requires interacting with others who may have discriminatory preferences. Working face-to-face among co-workers or customers, in other words, brings out the worst in taste-based discriminators.

There was a large racial gap in the extent to which workers sort into jobs that require *Abstract* tasks in 1960, the authors show, and that gap has remained essentially constant through 2018. This finding holds regardless of whether the authors control for trends in racial gaps in accumulated levels of schooling. Conversely, they show that there has been a large racial convergence in the *Contact* task content of jobs between 1960 and 2018. The large racial gap in the extent to which workers sort into jobs that require *Contact* tasks that existed in 1960 has almost disappeared by 2018.

2. New model of occupational choice with discrimination

The authors developed a new model of occupational choice that, among many other details described in the paper, allows for: (1) individuals of differing races who differ in the mean skill levels they have, (2) the taste-based discrimination they face in different tasks, (3) skills to be noisily observed by employers so as to have a meaningful notion of statistical discrimination, and (4) a non-employment option so to match differential trends in employment rates by race.

Using this model, the authors find that the stagnation in the racial wage gap post-1980 is a product of two off-setting forces. On the one hand, a narrowing of racial skill gaps and declining discrimination between 1980 and 2018 caused the racial wage gap to narrow by 6 percentage points during this period, all else equal. On the other hand, the changing returns to tasks since

[1] To assess whether Black and White workers sort into different jobs, preform different tasks, and earn different amounts, the authors use data from the following to measure the skills demanded in each occupation: (i) the US Department of Labor's Dictionary of Occupational Titles (DOT) and (ii) the Occupational Information Network (O*NET) sponsored by the US Department of Labor/Employment and Training Administration (USDOL/ETA). The DOT was constructed in 1939 to help employment offices match job seekers with job openings. It provides information on the skills demanded of over 12,000 occupations. The DOT was updated in 1949, 1964, 1977, and 1991, and replaced by the O*NET in 1998.

1980—particularly the increasing return to *Abstract* tasks—widened the racial wage gap by about 6.5 percentage points during the same period. A rise in the return to *Abstract* tasks disadvantages Blacks because they are underrepresented in these tasks due to racial skill gaps and discrimination.

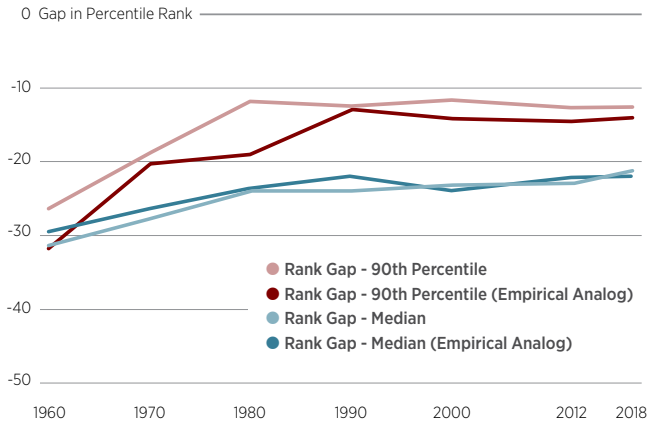
Moreover, to the extent that discrimination associated with *Abstract* tasks is important, the rising return to *Abstract* tasks will even favor Whites relative to Blacks with the same underlying levels of skills. In sum, the estimated model highlights that race specific barriers have continued to decline in the US economy post 1980, but the rising relative return to *Abstract* tasks has favored Whites since 1980. As a result, the Black progress stemming from narrowing racial skill gaps and/or declining discrimination did not translate into Black-White wage convergence during this period.

3. New insights into taste-based discrimination.

What are the race-specific forces, over time, that are due to changes in racial skill gaps, changes in taste-based discrimination, and changes in statistical discrimination? The authors find that the decline in the racial gap in *Contact* tasks over time was driven primarily by the decline in taste-based discrimination associated with these tasks; neither skills nor information play a central role in explaining this convergence. This reveals that racial gaps in *Contact* tasks are a good proxy for taste-based discrimination.

Quantitatively, the authors estimate that at least 50 percent of the decline in the racial wage gap between 1960 and 2018 can be attributed to declining taste-based discrimination. In contrast, racial gaps in *Abstract* tasks reflect a combination of racial gaps in related skills, taste-based discrimination and statistical discrimination. In particular, they find that even a little bit of noise in the extent to which *Abstract* skills are observed by employers can lead to quantitatively large amounts of statistical discrimination.

Figure 3 · Racial Gap in Percentile Ranks of Wage



Notes: This figure shows the model implied racial rank gaps for different percentiles against their empirical analogs. In particular, the solid black line (with squares) shows the relative rank gap.

> The authors' new model of task-based discrimination integrates notions of both taste-based discrimination (where employers hold less favorable attitudes toward minorities) and statistical-based discrimination (where employers use group data about human capital, for example, and project those data onto an individual) into a unified model of discrimination.

Existing literature has shown that traits like self-motivation, self-determination, and extroversion are predictive of future wages and can be important in explaining racial wage gaps. The authors add to this literature by showing that cognitive skills are most predictive of entry into occupations that require *Abstract* tasks, while social skills are most predictive of those that require *Contact*. The authors further document large but declining racial gaps in cognitive skills over time but find no racial gaps in social skills.

The authors stress that racial gaps in skills are endogenous, meaning that taste-based discrimination could be responsible for Black-White differences in measures of cognitive test scores. Such caveats are key when considering whether current racial wage gaps are explained by taste-based discrimination or differences in market skills. Regardless, the existence of such gaps implies that changes in task returns can have meaningful effects on the evolution of racial wage gaps, even when discrimination and the skill gaps remain constant over time.

Bottom line: The evolution of the racial wage gap between Black and White men reflects both race-specific and aggregate forces. Between 1960 and 1980, declining taste-based discrimination, a narrowing of the racial skills gap, and changes in aggregate task prices all worked to narrow the racial wage gap. However, since 1980, the effect of declining racial skill gaps and discrimination was offset by the increasing returns to *Abstract* tasks.

Conclusion

This work provides a unified framework that incorporates notions of taste-based and statistical discrimination, group differences in skills, and changing returns to labor market tasks to explain one of the most vexing labor market questions of the last 50 years: the

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evolution of wage gaps across groups. The authors find that declining taste-based discrimination explains at least half of the declining racial wage gap between 1960 and 2018. Further, they find that the constant wage gap between Black and White men post-1980 is due to two offsetting effects:

- The racial skill gap narrowed, and taste-based discrimination fell post-1980 resulting in the wages of Black men converging to those of White men, all else equal.

- During the same period, though, the return to Abstract skills rose, which disadvantaged Blacks relative to Whites. This latter effect resulted in an increasing racial wage gap, all else equal.

A narrowing skills gap, though, is still a gap, and among some skills those gaps are still quite large. Why do these gaps persist? Though this question is beyond the scope of their model, the authors speculate that current or past levels of taste-based discrimination can be responsible for Black-White differences in measures of cognitive test scores. Policymakers take heed: Such caveats should be considered when segmenting current racial wage gaps into parts due to taste-based discrimination and to differences in market skills.

Regardless of the reason for racial skill gaps associated with given tasks, the existence of such gaps implies that changes in task returns can have meaningful effects on the evolution of racial wage gaps, even when discrimination and skill gaps remain constant over time.

CLOSING TAKEAWAY

The stagnation in the racial wage gap post-1980 is a product of two off-setting forces. On the one hand, a narrowing of racial skill gaps and declining discrimination between 1980 and 2018 caused the racial wage gap to narrow by 6 percentage points during this period, all else equal. On the other hand, the changing returns to tasks since 1980—particularly the increasing return to Abstract tasks—widened the racial wage gap by about 6.5 percentage points during the same period.

READ THE WORKING PAPER

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