# Racial diversity and inclusion without equity? Evidence from executive compensation*


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**Abstract**

The structure of managerial compensation, excluding CEOs, varies by ethnicity and race. Black, Hispanic, and Asian C-suite executives receive less equity-based pay than their White counterparts. As minority executives' tenure increases or they move to firms with minority CEOs or firms near recent Black Lives Matter events, pay structure similarity improves. When this similarity increases, the pay gap between White and minority executives tightens, firm performance improves, financial fraud declines, and the CEO-to-median-worker pay ratio narrows. Race-based pay disparities are influenced by both minority executives' preferences and corporate cultures where the idiosyncratic backgrounds of different executives take time to coalesce.



***Keywords:*** Race; Diversity, equity, and inclusion; Executive compensation; CEO pay ratio, Black Lives Matter

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## 1. Introduction

Sparked by global social movements, interest among investors in diversity, equity and inclusion (DEI) remains strong. Indeed, The Principles for Responsible Investment—a United Nations-supported international network of financial institutions that endorse companies making a positive impact on society—advise investors to include DEI in their investment decisions.[1] As a result, many firms are setting more targets around DEI,[2] and US regulators now mandate or are considering mandating diversity quotas in corporate managerial teams.[3] Notably, while diversity and inclusion often garner substantial attention, the "*equity*" part of DEI is often overlooked. In this paper, we fill this crucial gap and study the "*equity*" component by analyzing the pay structure of racial minority executives in US firms that have already achieved diversity and inclusion.

Throughout the paper, we use the terms "ethnic minority," "racial minority," and "non-White" to encapsulate Black, Hispanic (or Latino), Asian, and Native American executives. Yet, while we use "race/racial" and "ethnic/ethnicity" interchangeably, there are notable differences between these terms, which affect how researchers in specific disciplines classify the people they study.[4]

Companies structure executive pay to provide their top managers with incentives to improve firm performance and with the chance to maximize their own compensation. Therefore, we view the degree of *pay structure similarity* across racial dimensions as a proxy for the extent the firm's *corporate culture* truly promotes *equity*. In our setting, equity refers to fair practices and policies that ensure all workers can succeed—irrespective of their demographic background.

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[1] See: forbes.com/sites/bonniechiu/2022/03/01/investors-are-waking-up-to-market-potential-of-diversity-equity-and-inclusion/?sh=4d4f5f665597

[2] For example, while 2.5% of US companies linked pay provisions to workplace diversity in 2018, 11% did it in 2021 (ft.com/content/86102111-3361-43e6-8e86-3dc6dfe7bb6f).

[3] In August 2021, the Securities and Exchange Commission approved Nasdaq rules that mandate companies listed on the exchange to staff their boards with at least two "diverse" directors.

[4] See, for example, Flanagin, Frey, and Christiansen (2021).

To measure pay structure similarity among White and non-White managers serving in the top executive team, we implement the two-step procedure outlined by Cabezón (2024). First, we create a vector consisting of the eight main components of total compensation: salary, restricted bonus, performance-based stock awards, restricted stock awards, option awards, non-equity incentives, other compensation, and change in pensions. Because we measure each component with a monetary value, the vector of payments is comparable across firms. We standardize each element by total compensation, such that the sum of all the elements of each vector equals one. Consequently, the vector measures the *structure* of the executive's pay rather than the level.

Initial vector analyses show that when compared to White executives, ethnic minority executives draw a higher fraction of their compensation in salary and bonuses and a lower fraction in equity compensation (i.e., equity and stock options). This evidence indicates that, on average, the compensation structure in the C-suite varies according to race/ethnicity, as ethnic-minority executives receive significantly less stock-based pay than their White counterparts. We find evidence of this disparity for all top executive positions except for that of CEO.

Our baseline finding—showing that pay structure similarity in the C-suite varies by race—proves robust to numerous control variables and fixed effects. For example, adding firm fixed effects prevents the possibility that unobserved time-invariant firm-specific factors drive the results. Time-varying economic fundamentals and/or non-economic factors in an industry cannot explain our results either because our industry-by-year fixed effects absorb observed and unobserved time-varying heterogeneity across industries. More importantly, we add *business area*-by-firm fixed effects and *position*-by-industry-by-year fixed effects. Thus, our findings are also present and statistically significant when comparing executives with similar jobs in the same business area (e.g., Operations, Marketing, Finance or Accounting, Information) in the same firm

in different years and also when comparing executives holding the same job position or title (e.g., Chief, President, VP) in different companies that operate in the same industry in the same year.

Next, we study whether the differences in ethnic pay structure are related to different pay levels. To do so, for every firm in each year, we evaluate the *similarity* between the average compensation structure vector for White executives and the average compensation structure vector for their ethnic-minority counterparts. Specifically, we calculate the dot product or *cosine similarity* score of the two vectors, which can take values from zero to one. At the extremes, two vectors with the same orientation have a cosine similarity score of one, while two orthogonal vectors have a similarity score equal to zero.

The results indicate an inverse association between pay structure similarity and the pay gap for ethnic minority executives. The estimates reveal that a one-standard-deviation decrease in racial pay structure similarity is related to an average increase of 10% in the ethnic-minority pay gap. This novel finding proves robust to several control variables as well as to the introduction of Industry, Year, Firm, and Industry by Year fixed effects in our regression analyses. Importantly, the inverse association between the ethnic-minority pay structure and the racial pay gap for top executives suggests that the deficit in equity incentives in the pay structure of non-Whites limits their opportunity to earn as much money as White executives working in the same firm, on average.

After finding that the structure of compensation among C-suite executives differs by ethnicity and that this difference is related to lower overall pay for racial minority executives, we study two hypotheses that could explain this racial-based disparity in pay structure. The first hypothesis states that racial minority executives prefer (and therefore receive) more cash and less equity-based pay than their Caucasian counterparts. Non-mutually-exclusive rationales for the *preferences*

*hypothesis* include increased risk aversion from austere life experiences and limited expected employment duration. The latter issue could be due to the expected length of working permits in the US or to the likelihood of securing a better job in another firm seeking to increase its own racial diversity.

The alternative hypothesis posits that race-based differences in compensation structure occur in corporate cultures where diverse idiosyncratic backgrounds take time to integrate.[5] This situation creates *information asymmetry* between White and minority executives. Consequently, pay structure disparities may stem from inferior social networks, from variations in negotiation power, from differences in career mentorship or sponsorship, from biases in skill assessment, or from the affinity between minority executives and the CEO or the members of compensation committee. The latter point is important because, as noted by Ahern et al. (2015), such affinity improves the communication between negotiating parties. Moreover, the possibility of lower quality social networks and its relation to worse labor market outcomes is in line with recent findings by Evsyukova, Rusche, and Mill (2024).

We recognize that the rationales supporting the *preferences* hypothesis (e.g., risk aversion) and those underlying the *information asymmetry* hypothesis (e.g., idiosyncratic backgrounds) are not directly observable. It is also possible that, in some situations, the racial disparity in pay structure we find results from the joint impact of both hypotheses. Thus, while our hypotheses are not mutually exclusive, we perform several tests to distinguish them as much as possible in order to gain insights about the compensation structure setting process.

[5] Idiosyncratic background refers to the personal history or set of experiences that are highly unique and specific to a group of individuals, meaning they have distinct traits, habits, or perspectives that significantly distinguish them from others, often due to their unique upbringing, societal influences, or personal development.

We first use the overconfidence measure developed by Malmendier and Tate (2005). While Goel and Thakor (2008, p.2758) note that "with a sufficiently high cross-sectional correlation, most of the presumed effect of overconfidence would be captured by risk tolerance in empirical tests," they also note that there is no direct test supporting this possibility. Yet, the overconfidence measure appears well-suited for our purposes because it was developed and used to track executives' option exercise *preferences* based on their individual characteristics. Our baseline finding is robust to controls for the executives' overconfidence. Moreover, according to our tests, the racially-based difference in pay structure we document does not change with the overconfidence level of the executives.

To further test our hypotheses, we perform two additional tests that exploit differences in pay structure similarity for the same executives that occur after the firm's culture changes. In the first test, we find that racial pay structure similarity in the C-suite improves by 10.5% when the CEO belongs to an ethnic minority. In the second test, we find that when racial minority executives move from firms led by a White CEO to firms led by an ethnic minority CEO, their pay structure similarity improves by 32%. We repeat both tests and find similar results when, instead of tracking the CEO's ethnicity, we use a dummy variable to indicate compensation committees staffed by at least one racial minority director. While all tests include firm and industry-by-year fixed effects, the second test also includes job position fixed effects and executive fixed effects. Consequently, aside from controlling for any time-varying industry characteristics, in the second test we compare executives with the same job position and control for any time-invariant executive characteristics.

The use of the aforementioned fixed effects eases concerns that pay structure outcomes can partly result from unobservable factors. To further mitigate this concern, we use the events associated with the Black Lives Matter (BLM) social movement as a quasi-exogenous shock.

According to the results, when racial minority executives move from firms led by a White CEO to firms headquartered near a recent BLM event, their pay structure similarity improves by 26%.

To further test the information asymmetry hypothesis, we examine whether the racial pay structure gap decreases as the minority executives' tenure in the firm increases. The rationale here is that as time passes, the diverse backgrounds of the executives converge leading to improved communication and information flow. In line with this conjecture, we find that the racial pay structure gap narrows as the tenure of minority executives increases.

Overall, the evidence suggests that, beyond the preferences of minority executives, other forces also account for the compensation structure disparity between White and racial minority executives. Indeed, if the compensation preferences of racial minority executives are stable, their pay structure should be constant irrespective of their tenure with the firm, the race of the CEO, the ethnic makeover of the board's compensation committee, or the location of the firm's headquarters relative to a recent BLM event. Consequently, our evidence indicates that differences in the idiosyncratic backgrounds between minority executives and their White counterparts explain, at least in part, the race-based disparities in executive pay structure we document.

To further consider the role of different idiosyncratic backgrounds in the ethnic-based differences in pay structure, we examine whether racial pay structure similarity varies according to the geography of racial affinity. To this end, we use two different measures of geographical racial affinity: the index of racial animus in US cities based on Google searches and the SDG Racism Index developed by the United Nation's Sustainable Development Solutions Network.[6] Both measures consider factors that are unlikely to be affected by a particular firm's actions and

[6] Chae, Clouston, Hatzenbuehler, Kramer, Cooper, Wilson, Stephens-Davidowitz, Gold, and Link (2015) describe the racial animus index.

thus capture regional cultural variations that are plausibly exogenous to the firm. On average, firms headquartered in locations with lower levels of racial affinity exhibit less racial pay structure similarity. Specifically, a one-standard-deviation increase in the racial animus is associated with an 18.5% decrease in ethnic pay structure similarity. Likewise, firms headquartered in states with an SDG racism index above the median exhibit a 4.5% lower racial pay structure similarity.

It is possible that the differences in pay structure we uncover only affect the allocation of the overall executive compensation budget but not other firm activities. Alternatively, if the disparity in racial pay structure proxies for the extent of *corporate culture* inclusiveness, then such a culture may affect the firm in other contexts. Consistent with this conjecture, we find an inverse association between ethnic-minority pay structure similarity and the CEO-to-median-worker pay ratio. The estimates imply economically important effects. A one-standard-deviation increase in ethnic-minority pay structure similarity is associated with a 5% decrease in the CEO pay ratio.

If the similarity in pay structure among executives captures a corporate culture encouraging fair treatment, full participation, and access and advancement opportunities for *all* employees, then it is likely that workers in such an environment deliver greater contributions and higher output. Supporting this prediction, we find a positive association between ethnic minority pay structure similarity and (a) the market valuation of the firm (Tobin's Q), and (b) different accounting measures of firm performance and employee productivity. Our estimates imply that increasing ethnic minority pay structure similarity by a single standard deviation is related to a 1.3% increase in the market valuation of the firm, a 2.8% increase in return of assets (ROA), a 2.3% increase in return on equity (ROE), and a 2.8% increase in return on employees.

To assess the veracity of the aforementioned link between pay structure similarity and corporate culture, we also evaluate its association with financial misconduct. To do so, we flag firms that appear in an SEC Accounting and Auditing Enforcement Release (AAER) or in the list of "problem" restatements as classified by Audit Analytics.[7] According to our analyses, a one standard deviation increase in ethnic-minority pay structure similarity is related to a 0.5 percentage point decrease in the probability of financial misconduct. This drop is economically important when benchmarked against the 1.7% average likelihood of financial misconduct in our sample.

This paper contributes to several active research areas. First, we show that C-suite executives in some of the largest companies in the U.S. have compensation structures that vary by ethnicity or race. Our analyses reveal that ethnic-minority executives get substantially less equity-based pay than their White counterparts. We identify the inequality in pay structure as a mechanism underlying the racial pay gap affecting top executive teams. By doing so, we contribute to the rich literature documenting settings where disparities across races exist.[8]

Second, our findings indicate that, as a novel measure of corporate culture, pay structure similarity has a real and important association with various other facets of the firm. In particular, companies with similar racial pay structures exhibit higher stock market values and better operating performance. The same firms also exhibit a lower probability of committing financial fraud. Collectively, these findings advance the literature examining the benefits of racial diversity

[7] These restatements are related to fraud, misrepresentation, or an investigation by the Public Company Accounting Oversight Board (PCAOB) (see Armstrong, Larcker, Ormazabal, and Taylor (2013)).
[8] Recent work in this area includes Butler, Mayer and Weston (2023), Gerardi, Willen and Zhang (2023), Avenacio-León and Howard (2022), Bartlett, Morse, Stanton and Wallace (2022), Fuster, Goldsmith-Pinkham, Ramadorai and Walther (2022), Hurtado and Sakong (2024).

and the extensive body work on the impact of corporate culture.[9] Moreover, by identifying racial pay structure similarity in a firm's C-suite as a proxy for a corporate culture that truly fosters diversity, equity, and inclusion (DEI), our paper complements contemporaneous work by Edmans, Flammer, and Glossner (2023). They find that demographic measures of diversity do not really capture the benefits of DEI and develop a survey-based DEI measure that does.

Third, our work also connects to papers on pay inequality in publicly listed firms (e.g., Mueller, Ouimet, and Simintzi (2017); Guest (2017); Frydman and Papanikolaou (2018); Pan, Pikulina, Siegel, and Wang (2022)). We move this literature forward by showing that increasing ethnic-minority pay structure similarity in the C-suite is related to (i) a lower pay gap between CEOs and rank-and-file employees (i.e., the CEO pay ratio tracking within-firm pay inequality), and (ii) to less disparity in the pay structure for all other non-CEO members of the top executive team.

Fourth, our paper advances the literature on racial discrimination practices by public firms. Most studies in this area show how racial discriminatory practices affect the financing activities of *external* parties.[10] Unlike these studies, our work reveals that certain firms structure the compensation packages for their top-management teams based on the race of the executives. In this vein, our work adds to the literature that considers the Black-White wage gap differential (e.g., Lang and Spitzer, 2020) and complements (a) the work by Kline, Rose, and Walters (2022)

[9] Research on the impact of diversity, which focuses mostly on gender, includes recent papers by Lins, Servaes and Tamayo (2017), Bernile, Bhagwat and Yonker (2018), and Calder-Wang and Gompers (2021). Please see Gorton, Grennan and Zentefis (2022) for a contemporaneous literature review on corporate culture.

[10] Dougal, Gao, Mayhew, and Parsons (2019) find that historically Black colleges and universities (HBCUs) pay higher underwriting fees to issue tax-exempt bonds, than similar non-HBCUs. Fairlie, Robb and Robinson (2022) show that raising external debt is harder for Black-owned start-ups. Begley and Purnanandam (2021) find that the incidence of fraud by retail banks is higher in areas mostly populated by minority borrowers. Bayer, Ferreira, and Ross (2016) find that, among homeowners with similar credit scores and loan attributes, Black and Hispanics pay higher interest rates. Hurtado and Sakong (2024) report similar racial disparities in both credit cost and access. Costello, Minnis, and Rabinovich (2024) show that suppliers with minority credit officers receive customer trade repayments later than other suppliers with credit officers who are white men

showing that firms are 2.1 percentage points less likely to contact job applicants with distinctively Black names relative to those with distinctively White names, and (b) the article by Field et al. (2020) showing that minority directors are less likely to assume leadership roles despite having stronger qualifications than non-minority directors.

Fifth, our work is related to studies on the economic and political effects of social movements. Madestam, Shoag, Veuger, and Yanagizawa-Drott (2013) find that rallies by the "Tea Party movement" induced substantial changes in Republican voting support and policymaking. Other work shows that the #MeToo movement increased the willingness of women to report sexual harassment (Levy and Mattsson, 2020) and the willingness of companies to hire females (Luo and Zhang, 2022). Campbell (2024) reports that from 2014 through 2019, census places with BLM protests are associated with a 10% to 15% reduction in civilian deaths in incidents involving police officers. We advance this literature by showing major changes in the pay structure of top corporate managers from racial minorities after protests by the Black Lives Matters social movement.

## 2. Data and Methodology

We obtain data on executive compensation from Execucomp, collected directly from each company's annual proxy (DEF14A SEC form). The dataset includes executives from firms in the S&P 500, S&P MidCap 400, S&P SmallCap 600, and many other firms covered by S&P. We use the compensation of all top-5 executives between 2006 and 2020.

We center the analysis on eight elements of compensation: salary, bonus, performance-based stock awards, restricted stock awards, option awards, non-equity incentives, other compensation, and change in pension value and non-qualified deferred compensation earnings. Salary and bonus reflect the amount received for the fiscal year. Both time-lapse restricted stock and performance-

based stock awards are evaluated using the grant-date market value. We identify performance-based stocks as the market value of stock awards that include a target in the Grants of Plan-Based Awards Table and define restricted stocks as the complement. Options awards are evaluated at grant-date value using the Black and Scholes (1973) formula. Non-equity incentives are evaluated at the target level (or the average of minimum and maximum if the target is not reported). Other compensation includes perquisites, signing bonuses, termination payments, and above-the-market interest paid on deferred compensation.

Accounting measures come from CRSP/COMPUSTAT. We merge the datasets using the Global Company Key —or GVKEY— firm identifier. We drop financial and utilities from our analysis and winsorize all variables at 5% and 95% levels to mitigate the influence of outliers.

### 2.1. Ethnicity

Because we are interested in comparing White/Caucasian and ethnic minority executives, we only consider firms for which we can identify executives from both groups. By doing so, we analyze firms with observable diversity and inclusion in the C-suite. We begin with 26,104 unique executives covered by Execucomp between 2006 and 2020. We use unique executive identifiers to merge the Execucomp data with the ISS Directors and Executives database.[11] To establish the race/ethnicity of the executives not covered by ISS, we use numerous sources such as LinkedIn profiles, Bloomberg reports, Capital IQ bios, company provided bios, news portals, corporate filings with the SEC, stories in savoynetwork.com, and in other internet websites.

[11] A large fraction of this database covers mostly directors. However, because some executives in our sample serve as directors in other companies at some point in time, the ISS database allows us to obtain their ethnicity.

Our final sample consists of 901 unique S&P 1500 firms with C-suites staffed by both White and ethnic minority executives. The race/ethnicity breakdown in our final sample consists of 9,614 unique C-suite executives is as follows: 1,274 Asian, 189 Black, 622 Hispanic, 4 Native American, and 7,525 White/Caucasian. We obtain the race/ethnicity for 4,374 unique executives from ISS and manually code it for 5,240.

While our final sample does not include all firms covered by Execucomp, it represents an important fraction of public firms. Indeed, our sample firms account for a total market capitalization of $15.1 trillion. In addition, our sample of 901 firms spans 194 different SIC3 industries (out of 233 in the entire Execucomp sample) and all 63 SIC2 industries in Execucomp and resembles the S&P1500 regarding all standard firm characteristics, as Table 1 shows.

**2.2. Summary statistics**

Table 1 reports summary statistics of the main variables in the sample of firms with at least one ethnic minority executive. The average firm has 9.1 billion in total assets, is 22.7 years old, has ROA of 12.7% and a Tobin's Q of 1.7. These values are similar to those for the average S&P1500 firm during our sample period.

The average executive gets nearly 29% of her total pay in salary, 3.6% in bonuses, just over 30% in stock awards (performance-based stock plus restricted stock), 11% in options, 6% in other compensation, and 2.7% in pensions. These summary statistics resemble those reported for the same variables in other studies (e.g., Murphy, 2013 and Edmans, Gabaix, and Jenter, 2017).

## 2.3. Methodology

For every firm, we follow Cabezon (2024) to calculate the similarity in the average compensation structure for non-White and White executives. Specifically, for each executive, we first create a vector that includes the eight primary pay components: salary, restricted bonus, performance-based stock awards, restricted stock awards, option awards, non-equity incentives, other compensation, and change in pensions. Because each of these elements is measured with a monetary value, the vector of payments is comparable across executives. We then scale each element by total compensation, such that the sum of all the elements of each vector equals one. By doing so, the vector measures the structure of the compensation plan rather than its level.

$$v_{it} = \left[\frac{salary_{it}}{total_{it}}, \frac{bonus_{it}}{total_{it}}, \frac{perf_stock_{it}}{total_{it}}, \frac{rest_stock_{it}}{total_{it}}, \frac{options_{it}}{total_{it}}, \frac{non_eq_{it}}{total_{it}}, \frac{other_{it}}{total_{it}}, \frac{pension_{it}}{total_{it}}\right], \text{ where}$$

$$total_{it} = salary_{it} + bonus_{it} + perf_stock_{it} + rest_stock_{it} + options_{it} + non_eq_{it} + other_{it} + pension_{it}.$$

We then compute the similarity between the average compensation vector of ethnic-minority executives and White executives for every firm in each given year. To assess the similarity between two vectors, we calculate their dot product which can take values from zero to one. The dot product, also known as cosine similarity, is a popular way to estimate the proximity of two non-zero vectors.[12] Two vectors with the same orientation have a cosine similarity of one while two orthogonal vectors have a similarity of zero. In our setting, the lower this similarity, the higher the ethnic-minority gap in the compensation structure.

$$Racial\ pay\ structure\ similarity_t = \frac{\sum_{n=1}^{8} v_{wt}^n v_{mt}^n}{\sqrt{\sum_{n=1}^{8} (v_{wt}^n)^2}\sqrt{\sum_{n=1}^{8} (v_{mt}^n)^2}},$$

[12] See, for example, Bhattacharyya (1946); Salton (1983); Hoberg and Phillips (2016); Hegde, Herkenhoff, and Zhu (2023).

Where $v_{it}^{n} = n^{th}$ element of vector $v_{it}$; $v_{wt}$ = average compensation vector of White executives, and $v_{mt}$ = average compensation vector of ethnic-minority executives.

Figure 1 shows that racial pay structure similarity is very stable across firm size and slightly lower for innovative firms. It is also stable across industries, with its lowest levels in industries such as chemicals and telecommunication. We also notice an increase in C-suite ethnic minority pay structure similarity as the firm matures.

**3. Baseline Result: Executive ethnicity and pay structure**

Executives typically draw their total compensation from eight different pay elements (i.e., salary, restricted bonus, performance-based stock awards, restricted stock awards, option awards, non-equity incentives, other compensation, and change in pensions). Perhaps the most important of these components are those that tie an executive's remuneration with the performance of the firm. Indeed, as the stock value of the company appreciates so do the equity-based components (performance-based stock awards, restricted stock awards, option awards) in an executive's pay contract. Consequently, remuneration arrangements structured around more equity-based pay provide executives with larger incentives and with more opportunities to boost their total compensation. In this section, we examine whether those opportunities vary by the executives' ethnic/racial status.

In Table 2, we regress the ratio of each compensation component on a dichotomous indicator set to one for executives that belong to a racial/ethnic minority and set to 0 for White executives. To compare executives in the same firm and control for any time-variant variable that affects the whole industry, all tests include firm and industry-by-year fixed effects. The regression estimates in Panel A of Table 2 document a racial disparity on the structure of pay, as ethnic-minority

executives are paid differently than their White counterparts. Specifically, ethnic-minority executives draw a lower fraction of their total compensation in the form of equity-based pay and pensions than their White counterparts. On average, performance-based stock (options) [pensions] corresponds to a 7% (11%) [8%] lower fraction of total compensation for ethnic-minority executives than for White executives. By contrast, salary (bonuses) corresponds to a 30% (3.7%) greater fraction of total compensation for ethnic-minority executives than for White executives.

Panels B and C show that these results are robust to the inclusion of business area (e.g., Operations, Marketing, Finance or Accounting, Information, other) and job position or title (e.g., Chief, President, VP, other) fixed effects. In particular, Panel B adds Firm-by-Area fixed effects, meaning that the reported findings arise from comparing executives with jobs in the same business area in the same firm in different years. In other words, the estimation captures race-based difference between predecessor and successor executives working in the same area in the same firm. Our findings also hold in Panel C where, in addition to Firm-by-Area fixed effects, we include Position-by-Industry-by-Year to compare executives holding the same job position or title, working in the same area in different companies that operate in the same industry in the same year.

In general, these specifications suggest that performing different jobs in the C-suite does not explain the racial gap in the structure of pay for top executives. Interestingly, the tests in Panel D, which consider only CEOs, indicate that the main components of the compensation structure for these executives do not vary by their ethnic/racial status. This finding is in line with the evidence in Guo et al. (2021) showing that racial minorities do not face racial bias in compensation when they make it to the CEO position.

Overall, our tests indicate that the structure of executive compensation varies according to ethnicity. Importantly, according to Panel B and C of Table 2, this finding is robust to the inclusion of (a) firm fixed effects (that compare executives in the same firm), (b) position and business area fixed effects (that compare executives in similar positions and those working in the same areas), and (c) industry-by-year fixed effects (that control for time-varying industry-level factors).

### 3.1. Pay structure similarity and the racial pay gap among C-suite executives

The evidence in Table 2 shows that the pay structure of racial minority executives differs from the pay structure of their Caucasian counterparts. Yet, this result does not reveal whether differences in ethnic pay structure are related to different pay levels. Next, we explore this issue.

We define the racial total pay gap as the average total compensation of White executives divided by the average total compensation of executives from ethnic minorities.[13] To calculate this ratio, we use the Total Annual Compensation reported in Execucomp (TDC1). TDC1 aggregates Salary, Bonus, Non-Equity Incentive Plan Compensation, Grant-Date Fair Value of Option Awards, Grant-Date Fair Value of Stock Awards, Deferred Compensation Earnings Reported as Compensation, and Other Compensation.[14] The summary statistics in Table 1 indicate that firms in our sample exhibit an annual average racial total pay gap of 2. The gap decreases to 1.3 when we drop CEOs from the sample. Given this evidence, we now investigate whether ethnic minority pay structure similarity in the C-suite affects the racial pay gap among top executives.

[13] Guest (2017) finds that the total compensation of African American executives is 9% lower than that of White executives. However, he also finds that the compensation of Hispanic and Asian executives is similar to that of Caucasian executives.

[14] We find similar results if we use TDC2 (TDC2 replaces the Black-Scholes value of options granted each year with the value of options exercised during that year) or "Total Compensation" in SEC Fillings (Execucomp item: total sec).

The first three columns in Table 3 report the results of regressing the racial pay gap on ethnic minority pay structure similarity. The test in column (1) includes firm and year fixed effects. In column (2) we add control variables such as the logarithm of total assets, the logarithm of firm age, and the logarithm of the average C-suite total compensation. In column (3), we include industry-by-year fixed effects.[15] We cluster standard errors by firm.

Regression estimates document a negative association between ethnic-minority pay structure similarity and the C-suite racial compensation gap. The results imply that a one-standard-deviation decrease in ethnic-minority pay structure similarity is associated with a 10% increase in the racial compensation gap, on average. The estimates in columns (4)-(6), which exclude CEOs from both structure similarity and pay gap calculations, indicate that the same decrease in ethnic-minority pay structure similarity is associated with an 8.5% increase in the racial pay gap for all other C-suite members.

## 4. Understanding the ethnic-based differences in pay structure

Why does the structure of executive compensation vary according to ethnicity? To address this question, we examine two hypotheses. The first proposes that the *preferences* of ethnic minority executives differ from the preferences of White executives. Accordingly, minority executives prefer (and get) more cash and less equity-based pay than White executives. The preferences hypothesis would also accommodate the ethnic-based difference in total pay since racial minority executives bear less risk and thus receive lower overall compensation. The alternative hypothesis

[15] In the estimations with firm fixed effects, we drop 157 singleton observations. When adding the industry-by-year fixed effects, we discard 189 additional singleton observations.

postulates that the different values, social practices, and customs (i.e., idiosyncratic backgrounds) increase information asymmetries and lead minority executives to enter into worse contracts.

These two hypotheses are not mutually exclusive as they can jointly explain the ethnic-based differences in pay structure. With this in mind, we run several tests to distinguish them as much as possible.

### 4.1. The executives' preferences vs. the asymmetry of information hypothesis

Ethnic minority executives may prefer more cash and less equity-based pay than White executives. This could happen, among other non-mutually-exclusive reasons, due to increased risk aversion stemming from life experiences, due to the expected length of their legal working status in the US, or due to the prospect of securing a job in another firm looking to boost its own racial diversity.

The ideal test of this hypothesis would disentangle ethnicity from preferences. Unfortunately, doing so is not possible as preferences do not vary over the sample period. Thus, we first exploit differences in executives' overconfidence using Malmendier and Tate's (2005) measure.[16] Goel and Thakor (2008, p.2758) conjecture that in certain settings, one could test "the hypothesis that overconfidence is positively cross-sectionally correlated with risk tolerance." While we do not seek to test that hypothesis, the overconfidence measure seems ideal for our purposes since it was conceived to study executives' option exercise *preferences* based on their personal characteristics.

[16] Malmendier and Tate (2005) define the variable *Holder67*, which codes executives as overconfident if they have options more than 67% in-the-money in the fifth year at least twice during their sample tenure. The 67% threshold comes from the rational option exercise model of Hall and Murphy (2002) with constant relative risk aversion of three and 67% of the executive's wealth in company stock.

In Table 4, we expand the specification in Table 2 with an indicator, labeled *Holder67*, set equal to one if the executive is overconfident and with a term that interacts the ethnic-minority indicator with the overconfident indicator. The risk-tolerance/overconfidence hypothesis predicts that (a) our baseline finding should be weaker if we control for overconfidence, and (b) the interaction term should be negative as overconfident ethnic-minority executives should have more equity-based pay and less cash-based compensation than non-overconfident ethnic-minority executives. The evidence in Table 4 does not support these predictions: our baseline findings remain unaltered after controlling for executives' overconfidence. Moreover, the interaction term is not statistically significant, suggesting that ethnic-minority executives have the same pay structure regardless of whether they are overconfident. Notably, estimates for the standalone *Holder67* variable show that the pay structure of overconfident executives consists of more equity and less cash.

At first glance, a possible concern with the evidence in Table 4 is that since the *Holder67* measure is based on stock options data, it could be correlated with the compensation structure (our dependent variable). Yet, it is important to note that *Holder67* is *not* forward-looking, as it is based on previous option exercises. However, since ethnic-minority executives receive less equity-based pay, such low levels might limit our ability to measure their true *Holder67*. Therefore, to further test the preferences hypothesis, we perform two additional tests that exploit differences in pay structure similarity for the same executives that occur after the firm's culture changes. Thus, any change in ethnic pay structure similarity in these tests is more likely to be driven by changes in the firm's culture and not by executive preferences.

To measure potential changes in corporate culture we use the CEO ethnicity of the firm. Theoretical work by Van den Steen (2010) suggests that CEOs largely dictate and influence corporate culture. Empirical work by Guiso et. al. (2015) suggests that CEOs play a large role in

establishing and maintaining a firm's integrity. In the context of our work, because racial status does not affect the pay structure of CEOs, it is possible that once they assume office, ethnic minority CEOs promote a more similar compensation structure for everyone else in the C-suite.

In our first test, we investigate whether the similarity in the racial pay structure improves in firms led by ethnic-minority CEOs. In columns (1) and (2) of Table 5, we regress ethnic-minority pay structure similarity on an indicator equal to one if the CEO belongs to a racial/ethnic minority. The regressions include firm and industry by year fixed effects. All tests control for firm size and firm age. We cluster the standard errors at the firm level. According to the estimates, ethnic minority pay structure improves by 10.5% when an executive from an ethnic/racial minority is the CEO. Notably, these results hold when we calculate ethnic-minority pay structure similarity, considering all executives in columns (1) and when the calculation excludes CEOs (columns (2)). In columns (3) and (4) we find similar results when, instead of flagging the CEO's ethnicity, we flag cases with at least one ethnic minority director serving on the compensation committee.

The results in Table 5 suggest that the pay structure of racial minority and White executives is more similar in firms headed by a racial minority CEO. To explore this further, we study executives who change firms in our sample. For this purpose, we first calculate the average pay structure similarity of each executive's compensation to all White executives in the same C-suite (excluding the CEO). We then regress this similarity on an indicator variable that switches from zero to one when a given executive moves to the C-suite in a different firm. We interact the job-move indicator with a dummy that equals one if the CEO of the new firm is an ethnic minority and zero if it is White/Caucasian. Equation (1) provides the model we estimate.

$$Similarity\ to\ White_{ijt}$$

$$= \alpha_0 + \beta_1\left(Job_{Move_{ijt}}\right) + \beta_2\left(Minority\ CEO\ in\ New\ Firm_{jt}\right)$$

$$+ \beta_3\left(Minority\ CEO\ in\ New\ Firm_{jt}\right)x\left(Job_Move_{ijt}\right) + \mu_i + INDxYear_t + Position_i + \epsilon_{it} \quad \textbf{(1)}$$

Where $\left(Job_Move_{ijt}\right)$ is a dummy that switches from zero to one when a given executive $i$ moves to a new firm $j$; $\left(Minority\ CEO\ in\ New\ Firm_{jt}\right)$ is 1 if the CEO in the new firm is from an ethnic minority and is 0 otherwise; $\mu_i$, $INDxYear_t$, and $Position_i$ denote executive, industry-by-year, and position fixed effects, respectively.

Panel A in Table 6 presents the results. In column (1), we only consider executives moving from a firm with a White CEO. The results in column (1) show that when an ethnic minority executive moves from a company with a White CEO to a company led by an ethnic minority CEO, her pay structure becomes 32% more similar to that of her new White C-suite peers than if she moves to a company with a White CEO. This analysis includes executive fixed effects, position fixed effects, and industry-by-year fixed effects. Thus, our specification enables us to compare the same executive in the same position in two different firms in the same industry.

We find no change in ethnic pay structure similarity in the test reported in column (2), where we only consider executives who move from a company led by an ethnic minority CEO. Thus, when an ethnic minority executive moves from a firm with a minority CEO to a new firm that also has a minority CEO, her pay structure similarity to White executives does not change. The test in column (2) suggests that the improvement in ethnic pay structure similarity for racial minority executives we find in column (1) is likely due to changing the CEO's ethnicity and not due to switching firms. Further supporting that these effects are driven by executive ethnicity and not by moving to a different firm, Panel B shows that none of these effects exist when we analyze the

move of White executives. Columns (3) and (4) in both panels present similar results when, instead of CEO ethnicity, we use a dummy that equals one if the compensation committee includes an ethnic minority director and zero if it only has White/Caucasian directors.[17] Our results showing that racial pay structure similarity improves if the executive and CEO belong to an ethnic minority is consistent with the asymmetry of information hypothesis: sharing a similar idiosyncratic background reduces the information/communication gap and improves the compensation structure of minority executives.

We are acutely aware that pay structure outcomes can factor in variables that are not observable to the researcher. To mitigate this concern, our empirical analyses include numerous controls and fixed effects. Yet, to further lessen this issue, we use Black Lives Matter (BLM) events as a quasi-natural experiment that exogenously raises awareness about unequal treatment of racial minorities.

BLM is a social movement that seeks to highlight racism, discrimination, and racial inequality. Since 2014, BLM has organized massive protests, rallies, marches and other events in different US cities in response to specific actions against black people. We use these events as shocks that increase racial awareness in the cities where they occur. Appendix B provides a detailed list of these local events.[18] Since these events are unrelated to a given company's executive compensation practices, they are plausibly exogenous to our measure of ethnic pay structure similarity. We define a firm as treated if its Corporate Headquarters is located within 50 miles of a BLM event. Once treated, the firm retains that status for every year after the BLM event occurs. Next, we estimate a variant of equation (1) in which we replace the $Minority\ CEO\ in\ New\ Firm$ indicator a dummy

[17] Although not directly comparable to our results, Guest (2017) finds that the pay gap between African American and Caucasian executives does not improve if the pay-setter belongs to an ethnic minority.
[18] Since our sample ends in 2020, we do not include the death of George Floyd and the ensuing nationwide protests.

variable that equals one if the new firm is treated by a BLM event. Column (5) in Panel A of Table 6 presents the results. We find that when an ethnic minority executive moves to a company treated by BLM, her pay structure becomes 26% more similar to that of her new White C-suite peers. By contrast, the results in Panel B show that this effect does not exist when White executives move to the C-suite of another firm treated by BLM.

We also estimate a stacked event-by-event difference-in-difference model as suggested by Goodman-Bacon (2021) and by Baker, Larcker and Wang (2022). In this test, we stack all BLM events (as if all events had occurred simultaneously) to calculate an average treatment effect. To avoid heterogenous treatment problems, we make sure that (a) previously treated executives never serve as controls for firms impacted by future BLM events and (b) later-treated executives never act as controls before treatment occurs. Column (6) in both panels of Table 6 presents our stacked DiD estimations. The results are robust to this alternative specification.

The internal validity of the DiD models relies on the fulfillment of the parallel trends condition (PTC), stating that without treatment, the average outcome for the 'treatment' and 'control' groups would have evolved in parallel. As Callaway and Sant'Anna (2021) note, the PTC is untestable. Yet, a plot of the average treatment and control response functions during the pre- and post-treatment periods can provide intuition on whether the PTC is likely satisfied (Roberts and Whited, 2013). To provide such intuition, we study the effect of job-move on pay structure similarity to Whites before and after BLM treatment by plotting the regression estimates from equation (2).

$$
\begin{aligned}
&Similarity\ to\ White_{ijt} \\
&= \alpha_0 + \beta_0(Job_Move_{ijt}) + \beta_1(BLM\ treated\ 15\ years\ from\ now_{jt})x(Job_Move_{ijt}) \\
&+ \beta_2(BLM\ treated\ 14\ years\ from\ now_{jt})x(Job_Move_{ijt}) \\
&+ \beta_3(BLM\ treated\ 13\ years\ from\ now_{jt})x(Job_Move_{ijt}) + \cdots \\
&+ \beta_{14}(BLM\ treated\ 2\ years\ from\ now_{jt})x\left(Job_{Move_{ijt}}\right) \\
&+ \beta_{15}(BLM\ treated\ 1\ year\ from\ now_{jt})x\left(Job_{Move_{ijt}}\right) + \beta_{16}(BLM\ treated\ this\ year_{jt})x\left(Job_{Move_{ijt}}\right) \\
&+ \beta_{17}(BLM\ treated\ 1\ year\ ago_{jt})x\left(Job_{Move_{ijt}}\right) + \beta_{18}(BLM\ treated\ 2\ years\ ago_{it})x\left(Job_{Move_{ijt}}\right) \\
&+ \beta_{18}(BLM\ treated\ 3\ years\ ago_{jt})x\left(Job_{Move_{ijt}}\right) + \cdots + \beta_{21}(BLM\ treated\ 6\ years\ ago_{jt})x\left(Job_{Move_{ijt}}\right) \\
&+ \delta_1(BLM\ treated\ 15\ years\ from\ now_{jt}) + \cdots + \delta_{15}(BLM\ treated\ 1\ year\ from\ now_{jt}) \\
&+ \delta_{16}(BLM\ treated\ this\ year_{jt}) + \delta_{17}(BLM\ treated\ 1\ year\ ago_{jt}) + \cdots \\
&+ \delta_{21}(BLM\ treated\ 6\ years\ ago_{jt}) + \mu_i + INDxYear_t + Position_i + State_j + \epsilon_{it}
\end{aligned}
\tag{2}
$$

Figure 2 plots the estimates from equation (2). It graphically shows that *before* a BLM event, when an ethnic-minority executive moves to a new firm, her pay structure similarity to her new White peers does not change regardless of whether she moves to a city that will be affected by a BLM event. However, the plot also shows that, *after* a BLM event occurs, when an ethnic-minority executive moves to a new firm, her pay structure becomes more similar to that of her new White C-suite colleagues *only* if the move is to a BLM-treated location.[19]

To consider executives' preferences, our tests control for time-invariant executive characteristics. The analyses in Table 5 achieve this by analyzing changes in the ethnic pay

[19] A concern with the use of BLM as identification is that this movement is widely perceived as seeking to benefit only Black individuals. However, a recent report by the American Civil Liberties Union notes that BLM raised and continue to raise awareness that benefit other races and that the success of other movements involving different minorities (e.g., MeToo, StopAsianHate, etc.) "would be inconceivable had it not been for the groundwork that BLM laid." (https://www.aclu.org/news/racial-justice/how-black-lives-matter-changed-way-americans-fight) In line with these views, the news arms of major TV networks report that the BLM "changed America's view on race" (https://www.nbcnews.com/news/nbcblk/movement-slogan-rallying-cry-how-black-lives-matter-changed-america-n1252434) while other outlets note that the BLM movement has helped Native Americans and Latinos https://www.axios.com/2021/03/13/george-floyd-native-americans-latinos-black-lives-matter).

structure similarity in the same C-suite after changing the ethnicity of the CEO and of the compensation committee. The specifications in Table 6 accomplish this by comparing the same executive in two different firms. Thus, the findings suggest that differences in pay structure between White and ethnic minority executives are explained, at least in part, by a corporate culture that requires time for the diverse backgrounds of executives to integrate. Moreover, to the extent that the compensation preferences of a racial minority executive are fixed, her pay structure should remain stable regardless of the ethnicity of the incumbent CEO, the ethnic composition of the compensation committee, or the location of the firm's headquarters relative to a recent BLM event. Therefore, the evidence suggests that the preferences hypothesis cannot fully explain the ethnic-based differences in pay structure affecting C-suite executives and that the information asymmetry hypothesis plays a relevant role in explaining these differences.

To further test the information asymmetry hypothesis, we investigate whether the racial pay structure gap narrows as minority executives' tenure within the firm increases. The reasoning is that over time, the diverse backgrounds of the executives converge, enhancing communication and information flow. To test this proposition, we expand the specification in Table 2 and include an interaction term between the ethnic minority dummy and the executive's tenure in the C-suite. Table 7 presents the results. In line with the information asymmetry hypothesis, as minority executives stay longer in the firm, their pay structure becomes more similar to that of White executives. To the extent that compensation preferences remain stable from one year to the next, this result implies that executives' preferences do not entirely drive the racial pay structure gap. Instead, the results suggest that this gap occurs in firms with corporate cultures where different idiosyncratic backgrounds take time to coalesce.

We perform two additional tests to disentangle the *preference*s hypothesis from the information asymmetry hypothesis. The latter hypothesis posits that the dissimilar treatment between White executives and those from ethnic minorities is shaped by dissimilar backgrounds. Thus, we examine whether our racial pay structure similarity measure varies across geographic locations expected to have lower levels of ethnic/racial background affinity. We use two measures of racial affinity. The first is the index of racial animus in US cities based on Google searches by Stephens-Davidowitz (2014) and Chae et al. (2015). This index tracks the level of racial attitudes across different areas in the US by measuring the fraction of Google search queries that include racially charged language. The index ranges from 0 (low racial animus) to 250 (high racial animus).

Columns (1) and (2) of Table 7 present the results of regressing ethnic pay structure similarity on the racial animus index of the firm's headquarters city. Since companies do not change their headquarters location very often, we do not include firm fixed effects in these tests. Instead, we include industry-by-year fixed effects. In column (1), we consider all executives, whereas in column (2), we exclude CEOs from the pay structure similarity calculation. In both specifications, the racial animus index exhibits a negative and significant coefficient. According to the results in column (2), a one-standard-deviation increase in racial animus is associated with an 18.5% decrease in ethnic pay structure similarity, on average.

To complement the racial animus analyses with a different measure of racial affinity, we use the Sustainable Development Goals (SDG) Racism Index developed by the Sustainable Development Solutions Network; a non-profit group launched by the United Nations in 2012. The SDG index is built for every state in the US and consists of five dimensions: (1) residential segregation; and gaps in (2) incarceration rates; (3) educational attainment; (4) economic indicators; and (5) employment status (Bailey et al. (2017)).

Columns (3) and (4) present the results of regressing racial pay structure similarity on a dummy that equals one if the firm's headquarters are in a state with an SDG Racism Index above the median. Column (3) considers all executives, while column (4) drops the CEOs from the pay structure similarity calculation. In both specifications, we find a negative relation between a higher level of the racism index and racial pay structure similarity. Specifically, on average, firms headquartered in states with an SDG racism index above the median exhibit a 4.5% lower racial pay structure similarity (0.15 of a standard deviation).

It is important to note that both racial indices—the animus at the city level and the SDG at the state level— consider factors that are unlikely to be affected by the actions of a particular corporation and therefore capture cultural variations that are plausibly exogenous to the firm. In general, the results in Table 8 suggest that cultural biases toward race explain, at least in part, the differences in the compensation structure between Caucasian executives and their ethnic-minority counterparts.[20]

### 4.2. Alternative hypotheses

As mentioned earlier, aside from higher risk aversion, racial minority executives may prefer more cash and less equity-based pay than White executives due to the expected length of their legal working status in the US or due to the possibility of securing a job in another firm looking to boost its workforce diversity. In these cases, the expected length of employment would justify preferring more cash (and less equity-based pay). To test this possibility, we examine whether the tenure of non-CEO executives varies by their racial status. The results in Figure 3 show that the

[20] In appendix C3, we evaluate a variant of the information asymmetry hypothesis. This variant, which is rooted in agency theory, posits that ethnic minority executives are justly compensated and that White executives obtain excess pay when there are racial minority executives in the C-suite. We report some evidence supporting this agency-based hypothesis.

median tenure is 14 years for White executives and 13 years for ethnic minority executives. This one-year difference seems unlikely to explain the difference in pay structure we report. Moreover, the median tenure of minority executives can easily accommodate the vesting periods of multiple stock option awards, which typically range from three to five years.

Another hypothesis is based on the "Glass Cliff" theory, which suggests that women are promoted to higher positions during times of crisis when the chance of failure is more likely. A similar phenomenon could apply to ethnic minorities. Under this possibility, the ethnicity-based difference in pay structure we document reflects the firm's precarious financial position. To evaluate this possibility, we study job switches of ethnic minority executives and compare the financial health of the sending firms and the receiving firms. We use three proxies to assess financial health: the firm's S&P Credit rating, the firm's Z-score proposed by Altman (1968), and the text-based measure of financial constraints advanced by Hoberg and Maksimovic (2015). Figure 4 shows no significant differences in the mean and median values of these measures around job switches by racial minority executives.[21] This evidence suggests that firms in our sample are not in perilous financial shape when they appoint racial minority executives to their C-suites.

## 5. Pay structure similarity and corporate culture

If a firm has a fixed budget for compensating its C-suite members, the distribution of this budget among executives might not impact other aspects or actions of the firm. In this case, our findings on ethnic pay structure similarity would mainly pertain to pay fairness. Alternatively, according to the information asymmetry hypothesis, the racial pay structure differences we observe

[21] In un-tabulated panel-regression analyses that include firm and year fixed effects and standard controls, we find that the credit score, the Z-score (Altman, 1968), or the text-based measures of financial constraints (Hoberg and Maksimovic (2015) do not predict the appointment of an ethnic-minority executive in the C-suite.

may arise from a corporate culture that needs time to integrate the diverse backgrounds of its executives. Under this possibility, such a culture could influence the firm in various other contexts. To explore this conjecture, we study whether our measure of ethnic pay structure similarity is related to (a) the CEO-to-worker pay ratio, (b) firm performance, and (c) the likelihood of the firm engages in financial misconduct.

### 5.1. CEO pay ratio

Akerlof and Yellen (1990) argue that rank-and-file employees compare their wages to those of their co-workers—including senior executives—to partly assess the fairness of their own pay. Workers' perceptions about pay fairness are important as they are likely to affect their effort and, in turn, firm performance. In line with this conjecture, Pan, Pikulina, Siegel, and Wang (2022) find lower stock market returns when firms disclose higher CEO pay ratios (i.e., the ratio between CEO pay and median worker pay). Notably, a recent report by the Economic Policy Institute notes that in 2021, CEOs were paid 399 times as much as a typical worker, on average.[22] Among major US companies, the pay disparity is even greater. For example, in 2022, Walmart's CEO C. McMillon, earned 1,013 times the $25,335 median income of an employee of his firm. In 2021, Amazon.com's CEO Andrew Jassy earned a total pay equal to 6,500 times the typical Amazon worker ($32,855).[23]

With this information as a backdrop, we next study whether ethnic-minority pay structure similarity is associated with the CEO-pay-to-worker ratio. In the four OLS regressions reported in Panel A of Table 8, the dependent variable is the natural logarithm of the CEO-pay-to-worker ratio. We estimate this ratio by scaling the CEO's total compensation by the pay of the median employee.

[22] See: https://www.epi.org/publication/ceo-pay-in-2021/
[23] See: https://247wallst.com/special-report/2023/05/24/ceos-of-major-us-companies-who-are-paid-1000-times-more-than-their-employees/

These data are available since 2017, as mandated by the Securities and Exchange Commission (SEC) and Section 953(b) of the Dodd-Frank Act. The key independent variable in all tests is the ethnic-minority pay structure similarity. To calculate ethnic minority pay structure similarity, the tests in columns (1) and (2) consider all executives while those in (3) and (4) exclude CEOs.

The estimates in column (1) of Panel A show that a one-standard-deviation increase in ethnic-minority pay structure similarity is associated with a 4.5% decrease in the CEO-pay-to-worker ratio. This finding holds when we calculate ethnic-minority pay structure similarity using the compensation for all C-suite members (columns 1 and 2) and in one of the two regressions where we exclude CEOs from that calculation (columns 3 and 4).

The tests reported in Panel B of Table 8, which use the C-suite pay gap as the dependent variable, are otherwise analogous to those in Panel A. We define the C-suite pay gap as the ratio of the highest to the lowest compensation in the team. The estimates indicate that a one-standard-deviation increase in ethnic-minority pay structure similarity is associated with a 15% decrease in the C-suite pay gap. In general, the results in Table 8 suggest that firms with a corporate culture that promotes equitable compensation for the members of the C-suite—despite their race—also promote pay fairness for the rest of the workforce.

### 5.2. Firm performance

Based on the conjecture that racial pay structure similarity in the C-suite is a proxy for the extent the firm's culture promotes DEI, we study whether pay structure similarity is associated with workers' productivity and firm performance. The rationale for this analysis, which rests on the notion that employees deliver greater contributions in firms that foster fair practices, is similar to the hypothesis in Edmans (2011) that job satisfaction improves firm performance.

The dependent variables in Panel A-Table 9 are the firm's Tobin's Q (in columns (1) and (2)); Return on Assets (ROA) (in columns (3) and (4)); Return of Equity (ROE) (in columns (5) and (6)); Profit margin (in columns (7) and (8)); and Return on Employees (REMP) (in columns (9) and (10)). The key independent variable in all tests is the ethnic-minority pay structure similarity. All regressions control for firm size and firm age. The odd-numbered columns include firm- and year fixed effects, whereas the even-numbered include firm and industry-by-year fixed effects.

In all specifications, the ethnic-minority pay structure similarity variable earns a positive and statistically significant coefficient. The estimates imply that a one-standard-deviation increase in ethnic-minority pay structure similarity is related to increases of 1.3% in Tobin's Q, 2.8% in ROA, 2.3% in ROE, 1.8% in profit margin, and 2.8% in REMP. The results in Panel B show that these findings are also obtained when we exclude CEOs from the analyses. These findings suggest that employees deliver better contributions in firms that embrace DEI values. This interpretation of our evidence is consistent with the findings in the corporate culture study by Guiso, Sapienza and Zingales (2015). They find that a firm's performance is stronger when its employees perceive top managers as trustworthy and ethical.[24]

### 5.3. Financial fraud

To assess the veracity of the link between pay structure similarity and corporate culture, we examine its association with financial misconduct. The idea here, suggested by existing work, is that financial misconduct is likely associated with poor corporate culture [e.g., Liu (2016), Parsons, Sulaeman, and Titman (2018), Cline, Walkling, and Yore (2018), Graham, et al. (2022)].

[24] The performance improvement findings are also consistent with the recent results by Jeong, Mooney, Zhang, and Quigley (2023). They find positive and significant investor reactions when firms appoint Black CEOs.

We use two measures of financial misconduct that are common in the literature. Misconduct occurs if the firm appears in the SEC's Accounting and Auditing Enforcement Releases (AAER) or if it appears in the list of restatements classified by Audit Analytics as relating to fraud, misrepresentation, or an investigation by the Public Company Accounting Oversight Board (PCAOB).[25] This definition of misconduct is conservative since it considers any misstatements not identified by the SEC as non-misstatements. We create a dummy variable that equals one if the firm incurs financial misconduct and zero otherwise.

Table 10 presents the results. The odd-numbered regressions include firm- and year fixed effects whereas the even-numbered regressions include firm- and industry-by-year fixed effects. Columns (3) and (4) exclude CEOs from the calculation of pay structure similarity. In all four specifications, we find a negative association between racial pay structure similarity and financial misconduct. According to the estimates, a one-standard-deviation increase in racial pay structure similarity is associated with a 0.5 percentage point decrease in the probability of financial misconduct. This decrease is economically important when benchmarked against the 1.7% average likelihood of financial misconduct in our sample.

The empirical evidence in this section suggests that pay structure similarity across racial dimensions captures whether the firm's culture truly fosters equity not just in their C-suite, but throughout the entire organization. Our pay structure similarity construct is thus a novel measure of corporate culture.[26]

[25] Our findings are robust to examining these two misconduct measures separately. Studies using AAER measure to proxy for financial misconduct include Erickson, Hanlon, and Maydew (2006), Dechow, Ge, Larson, and Sloan (2011), Armstrong, Larcker, Ormazabal, and Taylor (2013). Burns and Kedia (2006), Efendi, Srivastava, and Swanson (2007), Armstrong, Larcker, Ormazabal, and Taylor (2013) use restatements to proxy for financial misconduct.

[26] Appendix C4 shows that our focus on pay structure is superior to an alternative focus on, for example, the total pay gap or the percentage of minorities in the C-suite.

## 6. Conclusion

We present robust evidence showing that the pay structure of top managers—except CEOs—differs according to their ethnicity/race whereby Blacks, Hispanics, Asians, and Native Americans get less equity-based pay than White executives working in the same firm. C-suites with less similar racial pay structures exhibit a higher ethnic pay gap.

To understand the disparity in racial pay structure affecting C-suite executives, we examine two hypotheses. The *preferences* hypothesis argues that minorities prefer, and therefore get, less equity-based pay and more cash. The information asymmetry hypothesis proposes that minority executives receive dissimilar treatment due to their different idiosyncratic backgrounds. We find that when racial minority executives move from White-CEO-led-firms to ethnic-minority-CEO-led-firms, their pay structure similarity improves by 32%. To the extent that compensation preferences remain stable regardless of the CEO's race, this finding does not support the preferences hypothesis as the only explanation for the ethnic differences in pay structure. Moreover, the racial pay structure gap decreases as the minority executives stay in the firm longer. This finding suggests that the ethnic pay structure gap is not permanent: it improves as different executives' backgrounds coalesce. This process, however, takes time, and it is costly for minorities.

We find corroborating results when we examine racial minority executives who move from White-CEO-led-firms to firms operating near the location of a recent Black Lives Matter event. In line with this evidence, we also find that the dissimilarity in racial pay structure is particularly drastic in firms headquartered in areas with an above average racism index. These results suggest that racial affinity–and not just executives' preferences—is a mechanism underlying the differences in pay structure across race/ethnicity. Our last set of analyses indicate that racial pay

structure similarity is related to certain firm performance metrics. For instance, we find that firms with more similar racial pay structures in their C-suite are also associated with higher market valuations, better operating performance, less financial fraud, and lower CEO-to-median-worker pay ratios.

Overall, our results suggest that pay structure similarity across racial dimensions captures whether the firm's culture truly fosters diversity, equity, and inclusion practices not just in their C-suite, but throughout the entire organization. As such, our findings should be of particular interest to regulators, activists, policy groups, and investors debating the effect of DEI on public firms.

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Figure 1: Ethnic minority pay structure similarity and firm characteristics

Panel A of this figure shows the average ethnicity pay structure similarity across firm size quintiles, panel B across firm age quintiles, panel C across firms with and without R\&D expenditures, and panel D across Fama-French 12 industries.

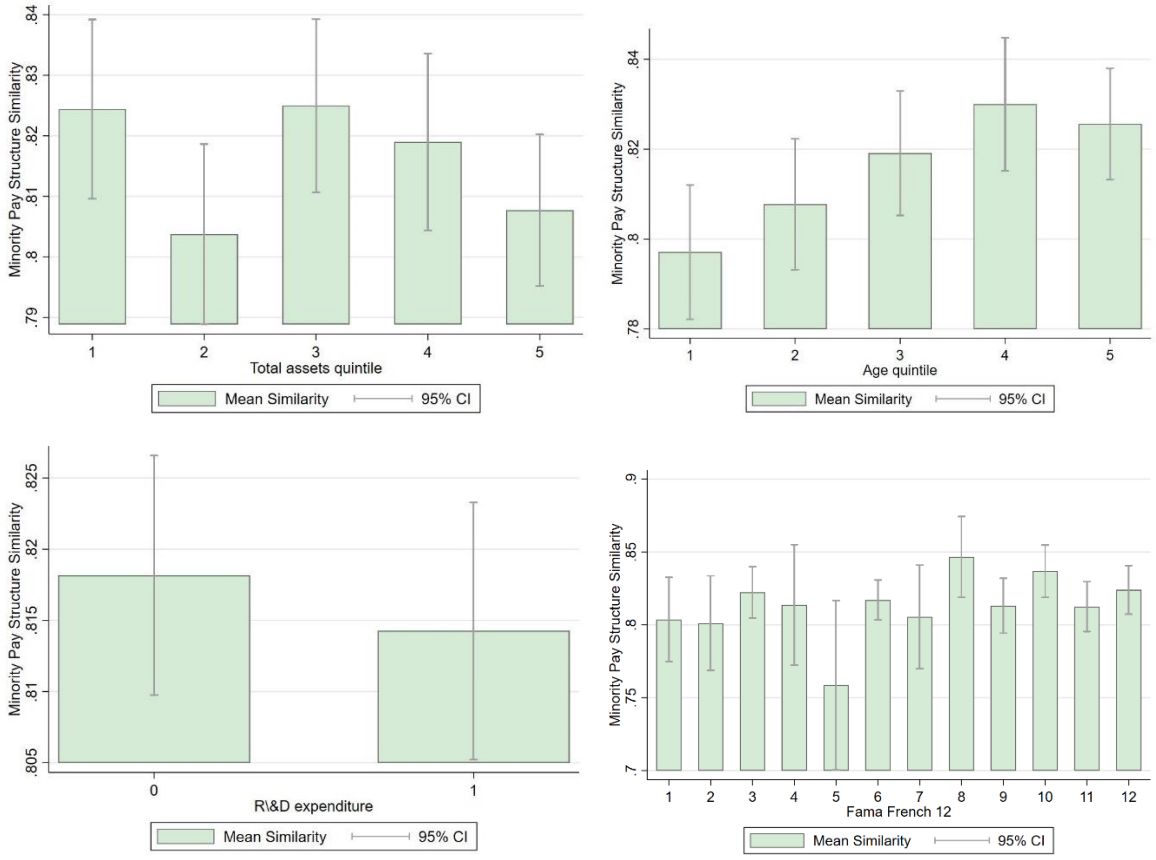


Figure 2: “Black Lives Matter” and Job-Move

This figure plots OLS point estimates of the effect of BLM events on pay structure similarity to White executives. The Y-axis show the change in pay structure similarity to White executives when an ethnic minority executive moves to a new firm affected by BLM. The gray line denotes a 95% confidence interval.



Figure 3: Ethnicity and tenure

This figure shows the median tenure with the firm for non-CEO executives according to their minority status.

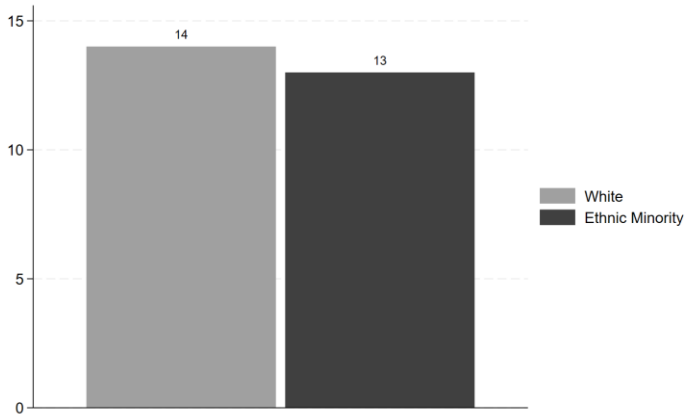
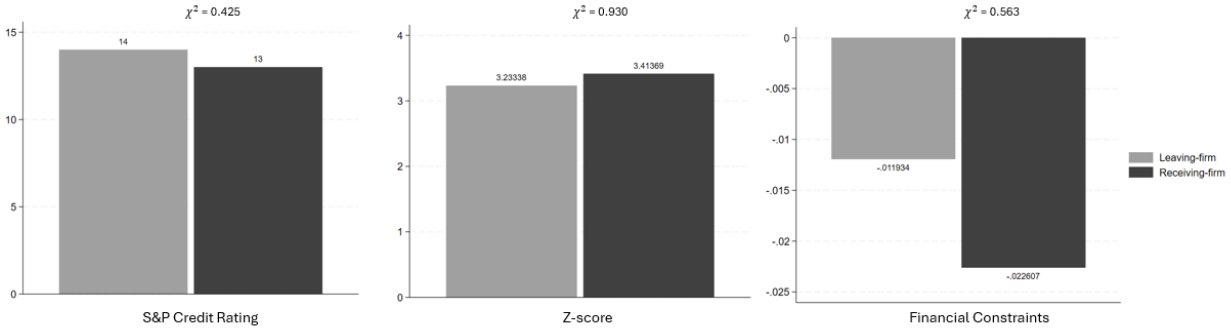


Figure 4: Ethnicity and financial health

Based on ethnic-minority executives who change firms, this figure compares the financial health of the former firms of ethnic-minority executives (gray columns) with that of the new firms (black columns). We use three proxies for financial health: the S&P Credit Rating, the Z-score (Altman (1968)), and the text-based measure of financial constraints developed by Hoberg and Maksimovic (2015). For the S&P Credit Rating, we assign values from 1 to 22 based on its classification (SD=1, D=2, CC=3, CCC-=4, CCC=5, …, AA+=21, and AAA=22). Panel A shows medians and panel B shows means. Above each figure, we report the $\chi^2$ and $t-stat$ of the median test and the t-test, respectively.

Panel A: medians




Panel B: means

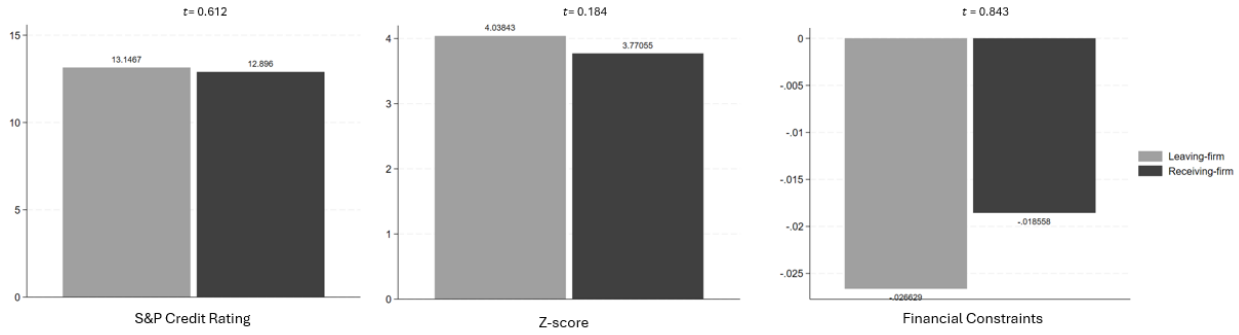


Table 1: Summary Statistics

This table presents summary statistics for the sample of firms with at least one ethnic minority executive. The sample runs from 2006 until 2020.

| | Obs. | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| Total Assets | 4,177 | 9092.3 | 15975.6 | 130.0 | 95905.0 |
| Firm age | 4,177 | 22.7 | 15.7 | 0.0 | 58.0 |
| Tobin's Q | 4,177 | 1.707 | 1.058 | 0.238 | 5.937 |
| ROA | 4,177 | 0.127 | 0.072 | -0.075 | 0.294 |
| ROE | 4,177 | 0.176 | 0.111 | -0.094 | 0.458 |
| Profit Margin | 4,177 | 0.167 | 0.118 | -0.133 | 0.539 |
| Return on employees | 4,177 | 72.3 | 89.2 | -42.4 | 617.9 |
| Avg total comp top-5 executives | 4,177 | 2989.7 | 2190.9 | 335.8 | 9698.5 |
| Avg total comp white executives | 4,177 | 4096.3 | 3463.1 | 354.1 | 16082.9 |
| Avg total comp ethnic minority executives | 4,177 | 2827.0 | 2746.0 | 248.9 | 14741.6 |
| Avg white-to-ethnic minority pay ratio | 4,177 | 2.0 | 1.5 | 0.2 | 6.4 |
| Avg white-to-ethnic minority pay ratio (exc CEO) | 2,700 | 1.3 | 0.9 | 0.3 | 5.6 |
| C-suite pay gap | 4,177 | 6.2 | 4.4 | 1.7 | 23.9 |
| C-suite pay gap (exc CEO) | 2,700 | 3.3 | 2.5 | 1.1 | 12.3 |
| CEO pay-to-worker ratio | 844 | 222.3 | 196.4 | 16.4 | 727.0 |
| AAER fraud (dummy) | 2,354 | 0.008 | 0.087 | 0 | 1 |
| SEC fraud investigation (dummy) | 3,242 | 0.012 | 0.109 | 0 | 1 |
| Salary/total comp | 4,177 | 0.289 | 0.173 | 0 | 1 |
| Bonus/ | 4,177 | 0.036 | 0.082 | 0 | 0.777 |
| Perf-based stock/total comp | 4,177 | 0.154 | 0.165 | 0 | 0.996 |
| Rest stock/total comp | 4,177 | 0.161 | 0.156 | 0 | 0.963 |
| Options/total comp | 4,177 | 0.111 | 0.145 | 0 | 0.994 |
| Non-eq incentives/total comp | 4,177 | 0.162 | 0.136 | 0 | 0.968 |
| Other comp/total comp | 4,177 | 0.061 | 0.073 | 0 | 0.915 |
| Change in pension/total comp | 4,177 | 0.027 | 0.061 | 0 | 0.514 |

## Table 2: Ethnic Minority and Pay Structure

This table presents the results of an OLS regression of the fraction of each compensation component divided by total compensation. We use a dummy that equals one if the executive is a minority ethnicity (Black, Hispanic, Asian, or Native American) and zero if it is a White executive. We cluster standard errors by executive, and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

**Panel A: all top executives**

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non.Eq. Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 1 if ethnic minority | 0.022*** | 0.005*** | -0.009*** | -0.000 | -0.010*** | -0.002 | 0.001 | -0.007*** |
| | (6.560) | (3.134) | (-3.165) | (-0.083) | (-4.425) | (-1.021) | (0.501) | (-5.276) |
| Observations | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 |
| R-squared | 0.470 | 0.403 | 0.369 | 0.351 | 0.391 | 0.382 | 0.194 | 0.505 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| SIC2 x Year FE | YES | YES | YES | YES | YES | YES | YES | YES |

**Panel B: including (business area) x (firm) fixed effects**

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non.Eq Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 1 if ethnic minority | 0.021*** | 0.006*** | -0.008** | 0.001 | -0.011*** | -0.002 | 0.000 | -0.008*** |
| | (5.384) | (3.055) | (-2.480) | (0.241) | (-3.641) | (-0.613) | (0.200) | (-4.754) |
| Observations | 56,155 | 56, 155 | 56, 155 | 56, 155 | 56, 155 | 56, 155 | 56,155 | 56, 155 |
| R-squared | 0.513 | 0.450 | 0.416 | 0.396 | 0.431 | 0.423 | 0.256 | 0.553 |
| Firm x Business Area FE | YES | YES | YES | YES | YES | YES | YES | YES |
| SIC2 x Year FE | YES | YES | YES | YES | YES | YES | YES | YES |

**Panel C: including (business area) x (firm) and (position) x (industry) fixed effects**

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non.Eq Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 1 if ethnic minority | 0.014*** | 0.005** | -0.006* | 0.003 | -0.008*** | -0.001 | 0.002 | -0.007*** |
| | (3.461) | (2.510) | (-1.773) | (1.075) | (-2.761) | (-0.423) | (0.940) | (-4.090) |
| Observations | 55,668 | 55,668 | 55,668 | 55,668 | 55,668 | 55,668 | 55,668 | 55,668 |
| R-squared | 0.547 | 0.478 | 0.403 | 0.425 | 0.459 | 0.450 | 0.296 | 0.576 |
| Firm x Business Area FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Position x SIC2 x Year FE | YES | YES | YES | YES | YES | YES | YES | YES |

**Panel D: only CEOs**

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non Eq Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 1 if ethnic minority | 0.022 | 0.010 | 0.011 | 0.002 | -0.008 | -0.021** | -0.001 | -0.015*** |
| | (1.592) | (1.508) | (0.879) | (0.195) | (-0.839) | (-2.551) | (-0.299) | (-3.620) |
| Observations | 20,148 | 20,148 | 20,148 | 20,148 | 20,148 | 20,148 | 20,148 | 20,148 |
| R-squared | 0.103 | 0.093 | 0.099 | 0.095 | 0.126 | 0.081 | 0.058 | 0.161 |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES | YES | YES |

Table 3: Pay Structure Similarity and the Racial Pay Gap

This table reports the results of an OLS regression of the racial pay gap on the pay structure similarity. We define racial pay gap as the average compensation of White executives divided by the average compensation of ethnic minorities (Black, Hispanic, Asian, or Native American). Columns (1) to (3) consider all top-5 executives. Columns (4) to (6) exclude CEOs from the analysis. Pay structure similarities are standardized such that they have a mean of zero and a standard deviation of one. We cluster standard errors by firm, and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

| | Dep Var: Racial Pay Gap | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Ethnic pay structure similarity | -0.201*** | -0.195*** | -0.170*** | -0.118*** | -0.112*** | -0.089*** |
| | (-6.353) | (-6.174) | (-5.265) | (-4.495) | (-4.329) | (-3.175) |
| Log of assets | | 0.037 | 0.046 | | 0.066 | 0.099 |
| | | (0.395) | (0.463) | | (0.709) | (0.949) |
| Log of firm age | | 0.106 | 0.149 | | 0.114 | 0.247** |
| | | (0.921) | (1.174) | | (1.158) | (2.510) |
| Log of avg c-suite total comp | | 0.396*** | 0.398*** | | 0.181*** | 0.127** |
| | | (5.830) | (5.596) | | (3.006) | (2.039) |
| Observations | 4,020 | 4,020 | 3,831 | 2,496 | 2,496 | 2,290 |
| R-squared | 0.613 | 0.622 | 0.669 | 0.483 | 0.491 | 0.580 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | | YES | YES | |
| SIC2xYear FE | | | YES | | | YES |
| Excluding CEO | NO | NO | NO | YES | YES | YES |

Table 4: Ethnic Minority, Overconfidence, and Pay Structure

This table presents the results of an OLS regression of the fraction of each compensation component divided by total compensation. We use a dummy that equals one if the executive is a minority ethnicity (Black, Hispanic, Asian, or Native American) and zero if it is a White executive; another dummy that equals one if the executive is overconfident (based in the *Holder67* measured suggested by Malmendier and Tate (2005, 2008) and Malmendier, Tate, and Yan (2011)); and an interaction of the two dummies. We cluster standard errors by executive, and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non.Eq. Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 1 if ethnic minority | 0.018*** | 0.005*** | -0.007** | 0.001 | -0.010*** | -0.002 | 0.001 | -0.005*** |
| | (5.081) | (2.600) | (-2.487) | (0.203) | (-4.151) | (-1.051) | (0.605) | (-3.596) |
| (1 if ethnic minority) x ( Holder67 ) | 0.002 | -0.000 | -0.003 | -0.006 | 0.009 | 0.004 | -0.005 | 0.000 |
| | (0.242) | (-0.086) | (-0.458) | (-0.921) | (1.384) | (0.740) | (-1.210) | (0.102) |
| Holder67 | -0.034*** | -0.008*** | 0.007*** | -0.000 | 0.015*** | 0.003 | -0.004* | 0.021*** |
| | (-11.670) | (-5.092) | (2.601) | (-0.194) | (6.029) | (1.202) | (-1.925) | (13.486) |
| Observations | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 | 56,925 |
| R-squared | 0.472 | 0.403 | 0.369 | 0.351 | 0.392 | 0.382 | 0.194 | 0.510 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES | YES | YES |

Table 5: CEO and Board Ethnicity and Pay Structure Similarity

Columns (1) and (2) of this table report the results of an OLS regression of the similarity of pay structure on a dummy that equals one if the CEO's race belongs to an ethnic minority and zero if it is White/Caucasian. Columns (3) and (4) report the results of a regression of the similarity of pay structure on a dummy that equals one if the compensation committee includes an ethnic minority director and zero if it only has White/Caucasian directors. Odd columns consider all executives whereas even columns exclude the CEO's compensation from the structure similarity calculation. We cluster standard errors by firm and report t-statistics in parentheses. The symbols *, **, and ***, denote statistical significance at the10%, 5%, and1% level, respectively.

Panel A: Ethnic minority CEO

| | Ethnic pay structure similarity | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| 1 if ethnic minority CEO | 0.054*** | 0.086*** | | |
| | (2.678) | (2.787) | | |
| 1 if ethnic minority comp committee | | | 0.033* | 0.052* |
| | | | (1.930) | (1.661) |
| Log of assets | 0.125 | 0.068 | 0.009 | -0.006 |
| | (1.563) | (0.612) | (0.316) | (-0.152) |
| Log of firm age | 0.009 | 0.027 | 0.064* | 0.126*** |
| | (0.100) | (0.282) | (1.884) | (3.316) |
| Log of avg c-suite total comp | -0.092* | -0.139* | -0.006 | -0.016 |
| | (-1.858) | (-1.800) | (-0.345) | (-0.613) |
| Observations | 3,831 | 2,290 | 2,372 | 1,368 |
| R-squared | 0.447 | 0.474 | 0.460 | 0.496 |
| Firm FE | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES |
| Excluding CEO | NO | YES | NO | YES |

Table 6: Executive fixed effects and ethnic pay structure similarity

This table presents the results of an OLS panel regression using executive-year observations. The dependent variable is the average pay structure similarity of each executive's compensation to all White executives in the same C-suite (excluding the CEO). In addition to executive fixed effects, position fixed effects, and industry-by-year fixed effects, we include three other control variables. The first control –called "Company change"— is a dummy variable that switches from zero to one when a given executive moves to a new firm (we only consider the first time an executive changes companies). The second control is a dummy variable that equals one if the CEO of the new firm is an ethnic minority and zero if it is White/Caucasian. In columns (3) and (4) we replace this variable with a dummy that equals one if the compensation committee includes an ethnic minority director and zero if it only has White/Caucasian directors. In column (5) we replace this variable with a dummy that equals one if the new firm is treated by a "Black Life Matters" event. The third control is an interaction between the first two controls. In column 1 (3) [5], we only consider executives who, when moving to a new company, had a White CEO (no minority in the compensation committee) [not treated by a BLM event] in the previous firm. In columns 2 (4), we only consider executives who, when moving to a new company, had an ethnic minority CEO (minority in the compensation committee) in the previous firm. Column (6) presents the estimation of a stacked difference-in-difference of BLT. Panel A only considers ethnic minority executives. Panel B only considers White executives. We cluster standard errors by executive, and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

Panel A: ethnic minority executives

| | DEP VAR: Pay structure similarity to White executives (exc CEO) | | | | | |
|---|---|---|---|---|---|---|
| | (1) White CEO previous firm | (2) Minority CEO previous firm | (3) No Minority comp comm previous firm | (4) Minority comp comm previous firm | (5) No BLM previous firm | (6) BLM Stacked diff-in-diff |
| (Company change) x (Minority CEO in new company) | 0.262** | 0.002 | | | | |
| | (2.059) | (0.028) | | | | |
| (Company change) x (Minority in comp comm in new company) | | | 0.147* | 0.082 | | |
| | | | (1.785) | (1.001) | | |
| (Company change) x (BLM event in new company) | | | | | 0.229** | 0.267** |
| | | | | | (2.012) | (2.402) |
| Company change | -0.094 | -0.334** | 0.065 | 0.318 | -0.157 | -0.353*** |
| | (-0.633) | (-2.390) | (0.529) | (1.541) | (-1.010) | (-4.900) |
| Minority CEO in new company | 0.037 | 0.041 | | | | |
| | (1.004) | (1.182) | | | | |
| Minority in comp comm in new company | | | 0.012 | 0.017 | | |
| | | | (0.352) | (0.483) | | |
| BLM event in new company | | | | | 0.024 | 0.072 |
| | | | | | (0.530) | (1.240) |
| Observations | 3,206 | 2,798 | 1,827 | 1,760 | 2,584 | 478 |
| R-squared | 0.551 | 0.545 | 0.554 | 0.568 | 0.612 | 0.103 |
| Executive FE | YES | YES | YES | YES | YES | YES |
| Position FE | YES | YES | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES |

Panel B: White executives

| | DEP VAR: Pay structure similarity to White executives (exc CEO) | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | White CEO previous firm | Minority CEO previous firm | No Minority comp comm previous firm | Minority comp comm previous firm | No BLM previous firm | BLM Stacked diff-in-diff |
| (Company change) x (Minority CEO in new company) | 0.000 | -0.071** | | | | |
| | (0.002) | (-2.120) | | | | |
| (Company change) x (Minority in comp comm in new company) | | | 0.012 | 0.007 | | |
| | | | (1.000) | (0.508) | | |
| (Company change) x (BLM event in new company) | | | | | -0.002 | 0.005 |
| | | | | | (0.110) | (0.580) |
| Company change | -0.032*** | 0.035 | -0.025*** | -0.027* | 0.026 | 0.004 |
| | (-2.861) | (0.492) | (-2.657) | (-1.821) | (1.470) | (0.361) |
| Minority CEO in new company | 0.000 | 0.001 | | | | |
| | (0.042) | (0.116) | | | | |
| Minority in comp comm in new company | | | 0.002 | 0.003 | | |
| | | | (0.556) | (0.700) | | |
| BLM event in new company | | | | | 0.001 | 0.011 |
| | | | | | (0.110) | (1.330) |
| Observations | 25,921 | 21,559 | 15,025 | 14,549 | 20,124 | 3,541 |
| R-squared | 0.442 | 0.432 | 0.459 | 0.465 | 0.508 | 0.401 |
| Executive FE | YES | YES | YES | YES | YES | YES |
| Position FE | YES | YES | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES |

Table 7: Ethnic pay structure gap and tenure

This table presents the results of an OLS regression of the fraction of each compensation component divided by total compensation. We use a dummy that equals one if the executive is a minority ethnicity (Black, Hispanic, Asian, or Native American) and zero if it is a White executive; a variable that measures the years the executive has been in the C-suite; and an interaction of the two variables. We cluster standard errors by executive, and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non.Eq. Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 1 if ethnic minority | 0.021*** | 0.008*** | -0.012*** | -0.004 | -0.016*** | -0.007** | 0.009*** | 0.001 |
| | (4.643) | (3.337) | (-2.898) | (-0.892) | (-4.848) | (-2.284) | (3.034) | (0.301) |
| (1 if ethnic minority) x (Tenure) | -0.002** | -0.001*** | 0.001** | 0.000 | 0.001*** | 0.001** | -0.001** | -0.000* |
| | (-2.289) | (-3.141) | (1.989) | (0.531) | (3.096) | (2.542) | (-2.341) | (-1.812) |
| Tenure | -0.004*** | -0.001*** | 0.001*** | -0.001*** | 0.000** | 0.000 | 0.001*** | 0.003*** |
| | (-13.566) | (-9.359) | (4.551) | (-3.735) | (1.987) | (1.027) | (7.336) | (19.308) |
| Observations | 56,933 | 56,933 | 56,933 | 56,933 | 56,933 | 56,933 | 56,933 | 56,933 |
| R-squared | 0.475 | 0.405 | 0.369 | 0.351 | 0.391 | 0.382 | 0.196 | 0.516 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES | YES | YES |

Table 8: Geography of Racial Affinity and Pay Structure Similarity

Columns (1) and (2) report the results of an OLS regression of the similarity of pay structure on the measurement of racial animus in cities based on Google searches by Chae et al. (2015) (standardized). Columns (3) and (4) report the results of a regression of the similarity of pay structure on a dummy that equals one if the firm's headquarters are in a state with an SDG Racism Index (Bailey et al (2017)) above the median. Odd columns consider all executives whereas even columns exclude the CEO's compensation from the pay structure similarity calculation. We cluster standard errors by firm and report t-statistics in parentheses. The symbols *, **, and ***, denote statistical significance at the10%, 5%, and1% level, respectively.

| | Ethnic pay structure similarity | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Racial animus index | -0.025* | -0.150** | | |
| | (-1.950) | (-2.291) | | |
| SDG racism index | | | -0.021* | -0.035** |
| | | | (-1.693) | (-2.490) |
| Log of assets | 0.026 | -0.116 | 0.006 | -0.001 |
| | (1.265) | (-1.145) | (0.865) | (-0.153) |
| Log of firm age | 0.015 | 0.059 | 0.013* | 0.011* |
| | (0.992) | (0.790) | (1.894) | (1.825) |
| Log of avg c-suite total comp | 0.005 | 0.001 | -0.031** | -0.029** |
| | (0.160) | (0.010) | (-2.411) | (-2.049) |
| Observations | 667 | 667 | 3,840 | 2,402 |
| R-squared | 0.351 | 0.335 | 0.135 | 0.167 |
| SIC2xYear FE | YES | YES | YES | YES |
| Excluding CEO | NO | YES | NO | YES |

Table 9: Pay structure similarity and the CEO-pay-to-worker ratio

Panel A of this table reports the results of OLS regressions of the CEO-pay-to-worker ratio on the ethnic pay structure similarity. Columns (1) and (2) consider all executives whereas columns (3) and (4) exclude the CEO's compensation from the structure similarity calculation. In Panel B, the dependent variable is the ratio between the highest and the lowest compensation in the C-suite. We standardize the similarity of pay structure such that it has a mean of zero and a standard deviation of one. We cluster standard errors by firm and report *t*-statistics in parentheses. The symbols *, **, and ***, denote statistical significance at the10%, 5%, and1% level, respectively.

Panel A: CEO-pay-to-worker:

| | Log of pay ratio | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Ethnic pay structure similarity in t | -0.044* | -0.054* | -0.042 | -0.073** |
| | (-1.665) | (-1.934) | (-1.316) | (-2.061) |
| Log of assets | 0.150* | 0.023 | 0.351** | 0.153 |
| | (1.809) | (0.226) | (2.386) | (1.029) |
| Log of firm age | -0.205 | -0.313 | -0.256 | -0.540 |
| | (-0.678) | (-1.245) | (-0.632) | (-1.166) |
| Log of avg c-suite total comp | 0.001 | 0.048 | 0.033 | 0.038 |
| | (0.013) | (1.093) | (0.661) | (0.624) |
| Observations | 800 | 739 | 461 | 403 |
| R-squared | 0.901 | 0.917 | 0.915 | 0.939 |
| Firm FE | YES | YES | YES | YES |
| Year FE | YES | | YES | |
| SIC2xYear FE | | YES | | YES |
| Excluding CEO | NO | NO | YES | YES |

Panel B: C-suite pay gap:

| | C-suite pay gap | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Ethnic pay structure similarity | -0.816*** | -0.835*** | -0.522*** | -0.522*** |
| | (-9.578) | (-9.112) | (-7.791) | (-7.229) |
| Log of assets | 0.202 | 0.033 | 0.077 | 0.107 |
| | (0.685) | (0.103) | (0.300) | (0.369) |
| Log of firm age | 0.443 | 0.455 | 0.064 | -0.040 |
| | (1.489) | (1.241) | (0.254) | (-0.140) |
| Log of avg c-suite total comp | 0.999*** | 0.924*** | 0.499*** | 0.327* |
| | (4.175) | (3.519) | (2.879) | (1.740) |
| Observations | 3,963 | 3,778 | 2,460 | 2,254 |
| R-squared | 0.464 | 0.529 | 0.469 | 0.570 |
| Firm FE | YES | YES | YES | YES |
| Year FE | YES | | YES | |
| SIC2xYear FE | | YES | | YES |
| Excluding CEO | NO | NO | YES | YES |

Table 10: Pay structure similarity and firm performance

This table reports the results of OLS regressions of firm performance on ethnic pay structure similarity. Panel A includes all executives, and Panel B excludes CEOs from the analysis. The dependent variables are Tobin's Q, ROA, ROE, profit margin, and return on employees. Pay structure similarities are standardized such that they have a mean of zero and a standard deviation of one. We cluster standard errors by firm and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

Panel A: All executives

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| VARIABLES | Tobin's Q | Tobin's Q | ROA | ROA | ROE | ROE | Prof Mg | Prof Mg | REMP | REMP |
| Ethnic pay structure similarity | 0.021** | 0.025** | 0.003*** | 0.002** | 0.003** | 0.003** | 0.002** | 0.002* | 1.321* | 1.623* |
| | (2.135) | (1.987) | (3.196) | (2.319) | (2.578) | (2.143) | (2.153) | (1.856) | (1.844) | (1.962) |
| Log of assets | -0.334*** | -0.427*** | -0.018*** | -0.024*** | -0.013 | -0.020** | 0.016** | 0.012 | 10.325** | 9.516* |
| | (-5.510) | (-7.650) | (-3.626) | (-4.835) | (-1.508) | (-2.069) | (2.237) | (1.639) | (2.096) | (1.896) |
| Log of firm age | -0.046 | -0.026 | 0.002 | 0.006 | 0.005 | 0.008 | -0.011 | -0.007 | -3.827 | -1.305 |
| | (-0.669) | (-0.387) | (0.373) | (0.943) | (0.413) | (0.568) | (-1.430) | (-0.835) | (-0.799) | (-0.228) |
| Log of avg c-suite total comp | 0.230*** | 0.243*** | 0.016*** | 0.016*** | 0.013*** | 0.015*** | 0.013*** | 0.014*** | 9.659*** | 10.375*** |
| | (6.890) | (6.787) | (6.642) | (6.604) | (2.690) | (3.444) | (4.762) | (4.535) | (3.363) | (3.269) |
| Observations | 4,020 | 3,831 | 4,020 | 3,831 | 4,020 | 3,831 | 4,020 | 3,831 | 4,020 | 3,831 |
| R-squared | 0.817 | 0.854 | 0.735 | 0.785 | 0.735 | 0.779 | 0.833 | 0.859 | 0.826 | 0.851 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | | YES | | YES | | YES | | YES | |
| SIC2xYear FE | | YES | | YES | | YES | | YES | | YES |

Panel B: Excluding CEOs

| VARIABLES | (1) Tobin's Q | (2) Tobin's Q | (3) ROA | (4) ROA | (5) ROE | (6) ROE | (7) Prof Mg | (8) Prof Mg | (9) REMP | (10) REMP |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethnic pay structure similarity | 0.022** | 0.019 | 0.004*** | 0.003*** | 0.004** | 0.003 | 0.003** | 0.004** | 1.869* | 2.990** |
| | (2.006) | (1.412) | (3.793) | (2.681) | (2.337) | (1.460) | (2.259) | (1.998) | (1.869) | (2.490) |
| Log of assets | -0.241*** | -0.315*** | -0.014*** | -0.020*** | -0.016 | -0.022** | 0.023*** | 0.019** | 14.471** | 13.372* |
| | (-3.578) | (-4.159) | (-2.755) | (-3.722) | (-1.540) | (-2.053) | (2.914) | (2.174) | (2.335) | (1.888) |
| Log of firm age | -0.091 | -0.075 | -0.002 | -0.002 | -0.009 | -0.012 | -0.024*** | -0.023** | -10.937** | -10.571 |
| | (-1.141) | (-0.887) | (-0.307) | (-0.213) | (-0.729) | (-0.859) | (-3.013) | (-2.397) | (-2.088) | (-1.550) |
| Log of avg c-suite total comp | 0.180*** | 0.188*** | 0.016*** | 0.015*** | 0.010 | 0.013** | 0.013*** | 0.012*** | 10.177** | 10.600** |
| | (4.555) | (4.081) | (5.217) | (4.631) | (1.447) | (2.080) | (3.644) | (3.075) | (2.459) | (2.232) |
| Observations | 2,496 | 2,290 | 2,496 | 2,290 | 2,496 | 2,290 | 2,496 | 2,290 | 2,496 | 2,290 |
| R-squared | 0.854 | 0.886 | 0.759 | 0.807 | 0.764 | 0.813 | 0.852 | 0.879 | 0.827 | 0.854 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | | YES | | YES | | YES | | YES | |
| SIC2xYear FE | | YES | | YES | | YES | | YES | | YES |

Table 11: Pay structure similarity and financial misconduct

This table reports the results of OLS regressions of the probability of financial misconduct on ethnic pay structure similarity. The dependent variable is a dummy variable that equals one if the firm involves in a misstatement and zero otherwise. A misstatement is defined as one if the firm appears in the SEC's Accounting and Auditing Enforcement Releases (AAER) (see Dechow, Ge, Larson, and Sloan (2011)) or if it appears in the list of restatements classified by Audit Analytics as relating to fraud, misrepresentation, or an investigation by the Public Company Accounting Oversight Board (PCAOB) (see Armstrong, Larcker, Ormazabal, and Taylor (2013)). Columns (1) and (2) consider all executives whereas columns (3) and (4) exclude the CEO's compensation from the structure similarity calculation. We standardize the similarity of pay structure such that it has a mean of zero and a standard deviation of one. We cluster standard errors by firm and report t-statistics in parentheses. The symbols *, **, and ***, denote statistical significance at the10%, 5%, and1% level, respectively.

| | Financial Misconduct | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Ethnic pay structure similarity | -0.005* | -0.005** | -0.007* | -0.010** |
| | (-1.945) | (-2.418) | (-1.815) | (-2.415) |
| Log of assets | 0.047* | 0.056* | 0.020 | 0.014 |
| | (1.938) | (1.899) | (1.190) | (0.832) |
| Log of firm age | 0.015 | 0.008 | 0.013 | 0.007 |
| | (0.824) | (0.432) | (0.933) | (0.441) |
| Log of avg c-suite total comp | -0.008 | -0.013* | -0.009 | -0.015 |
| | (-1.353) | (-1.734) | (-0.850) | (-1.244) |
| Observations | 3,132 | 2,985 | 1,983 | 1,804 |
| R-squared | 0.572 | 0.615 | 0.477 | 0.521 |
| Firm FE | YES | YES | YES | YES |
| Year FE | YES | | YES | |
| SIC2xYear FE | | YES | | YES |
| Excluding CEO | NO | NO | YES | YES |

# Appendix A: Variable definitions

| | |
|---|---|
| Racial pay structure similarity | Cosine similarity between the average compensation vector of White executives and the average compensation vector of ethnic minority executives. |
| Racial pay structure similarity (exc CEO) | Cosine similarity between the average compensation vector of White executives (excluding the CEO) and the average compensation vector of ethnic minority executives (excluding the CEO). |
| Log of Total Assets | Log(1+at) |
| Firm age | listing vintage from the first year the firm appears in the CRSP/COMPUSTAT merged database. |
| Tobin's Q | (csho*prcc_f+dlc+dltt+pstkl)/at |
| ROA | oibdp/at |
| ROE | oibdp/(at-dlc-dltt) |
| Profit Margin | oibdp/sale |
| Return on employees | oibdp/(number of employees) |
| Avg c-suite total comp | Average TDC1 of top five executives in Execucomp |
| Racial pay gap | (Avg total comp White executives)/(Avg total comp ethnic minority executives) |
| Avg white-to-ethnic minority pay ratio (exc CEO) | (Avg total comp White executives excluding the CEO)/(Avg total comp ethnic minority executives excluding the CEO) |
| C-suite pay gap | (Higher total comp across top five executives)/(Lowest total comp across top five executives) |
| C-suite pay gap (exc CEO) | (Higher total comp across top five executives excluding the CEO)/(Lowest total comp across top five executives excluding the CEO) |
| Financial misconduct (dummy) | Dummy that equals one if the firm appears in the SEC's Accounting and Auditing Enforcement Releases (AAER) or if it appears in the list of restatements classified by AuditAnalytics as relating to fraud, misrepresentation, or an investigation by the Public Company Accounting Oversight Board (PCAOB) |

# Appendix B: Black Lives Matter major events

To build a preliminary list of events, we perform internet searches for news reports of rallies, protests, marches, and other events organized by the Black Lives Matter (BLM) social movement between 2014 and 2019.[27] We match the initial list against the data used in Campbell (2024) to ensure that the events involve the participation of at least 150 people. Our findings, however, hold if we include all the events in Campell's dataset.

**Ferguson, 2014:** in August, BLM organized a "Freedom Ride", to support the protests following the killing of Michael Brown.
**Berkeley, 2014:** in November, BLM organized a protest in response to the grand jury decision not to indict Darren Wilson for the killing of Michael Brown.
**Los Angeles, 2014:** in August, BLM protested the death of Ezell Ford by Los Angeles Police Department officers.
**Bloomington, 2014:** in December, two to three thousand people gathered at the Mall of America to protest the killings of unarmed black men by police.
**Milwaukee, 2014:** in December, BLM protested the police killing of Dontre Hamilton, John Crawford III, and Renisha McBride.
**New York, 2015:** in February, BLM protested the death of Akai Gurley by New York Police Department officers.
**Chicago, 2015:** in March, BLM protested at Chicago Mayor Rahm Emanuel's office, demanding reforms within the Chicago Police Department.
**Charleston, South Carolina, 2015:** in April, BLM protested the death of Walter Scott and Dylann Roof, and called for Civilian oversight of police.
**Cleveland, 2015:** in May, BLM protested after an officer was acquitted at trial in the killing of Timothy Russell and Malissa Williams.
**Madison, 2015:** in May, BLM protested after the officer was not charged in the killing of Tony Robinson.
**Cincinnati, Ohio, 2015:** in July, BLM rallied and protested the death of Samuel DuBose after he was shot and killed by a police officer.
**Newark, 2015:** in July, over a thousand BLM activists marched against police brutality, racial injustice, and economic inequality.
**Charlotte, 2015:** in August, after a judge declared a mistrial in the trial of a white Charlotte police officer who killed an unarmed black man, Jonathan Ferrell, BLM protested and staged die-ins.
**Minneapolis, 2015:** In November, BLM activists protested after Jamar Clark was shot by the Minneapolis Police Department
**San Francisco, 2016:** in February, BLM protested the death of Mario Woods, who was shot by San Francisco Police officers.
**Salt Lake City, 2016:** in February, BLM protested the shot and injury of Abdullahi Omar Mohamed, a 17-year-old Somali refugee.
**Baton Rouge, 2016:** in July, BLM held a candlelight vigil after Alton Sterling, a 37-year-old black man, was shot several times at point-blank range while pinned to the ground by two white Baton Rouge Police Department officers.
**Saint Paul, 2016:** in July, BLM protested Following the fatal shooting of Philando Castile.
**Dallas, 2016:** in July, a BLM protest was held to protest the deaths of Alton Sterling and Philando Castile.
**Baltimore, 2016:** in July, BLM protested the death of Korryn Gaines, a 23-year-old African American woman, and shooting and injuring her son.
**Pittsburgh, 2016:** in August, BLM protested the death of Bruce Kelley Jr., who was shot after fatally stabbing a police dog while trying to escape from police.
**Tulsa, 2016:** in September, BLM protested the shooting death by police officers of Terence Crutcher.
**Nashville, 2017:** in February, BLM protested the killing of Jocques Clemmons and the decision not to prosecute police officer Joshua Lippert.

[27] Aside from gathering data from major news outlets, we also consulted ash.harvard.edu/programs/crowd-counting-consortium, Wikipedia, and elephrame.com.

# Appendix C: Additional Robustness Tests (Online Appendix)

## Appendix C1: Falsification tests

### Table C1.1: Ethnic Minority and Pay Structure

This table presents the results of an OLS regression of the fraction of each compensation component divided by total compensation. In panel A, we consider only White executives and randomly label 12% of them as belonging to an ethnic minority. In panel B, we consider only ethnic minority executives and randomly label 88% of them as White. We cluster standard errors by executives, and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

Panel A: Within White executives

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non.Eq. Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 1 if (false) ethnic minority | -0.001 | -0.000 | 0.002 | -0.001 | -0.002 | 0.000 | 0.001 | 0.001 |
| | (-0.359) | (-0.237) | (0.839) | (-0.412) | (-0.835) | (0.113) | (0.424) | (0.839) |
| Observations | 47,316 | 47,316 | 47,316 | 47,316 | 47,316 | 47,316 | 47,316 | 47,316 |
| R-squared | 0.477 | 0.420 | 0.381 | 0.366 | 0.408 | 0.392 | 0.211 | 0.516 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES | YES | YES |

Panel B: Within ethnic minority executives

| VARIABLES | (1) Salary /total | (2) Bonus /total | (3) Perf stock /total | (4) Rest stock /total | (5) Options /total | (6) Non.Eq Inc /total | (7) Other /total | (8) Pension /total |
|---|---|---|---|---|---|---|---|---|
| 0 if (false) White | 0.006 | -0.000 | 0.001 | -0.004 | -0.003 | -0.002 | 0.001 | 0.002 |
| | (0.887) | (-0.012) | (0.128) | (-0.685) | (-0.482) | (-0.505) | (0.326) | (0.748) |
| Observations | 9,277 | 9,277 | 9,277 | 9,277 | 9,277 | 9,277 | 9,277 | 9,277 |
| R-squared | 0.566 | 0.482 | 0.463 | 0.436 | 0.437 | 0.470 | 0.329 | 0.601 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES | YES | YES |

Appendix C2: Racial Pay Structure Gap and Agency Problems

We find that the structure of compensation among C-suite executives differs by racial status and that this difference translates into lower total pay for racial minority executives. Even though our findings suggest that these differences are in part due to asymmetries of information driven by differences in idiosyncratic backgrounds, it is possible that ethnic minority executives are fairly compensated and that White executives are over-compensated. Under this agency-based alternative, it could be the case that White executives receive excess compensation when there are ethnic minority executives in the C-suite.

In line with the excess compensation possibility, the estimates in Table C2.1 show that White executives receive more equity-based pay and less cash pay in firms with ethnic minority executives than they do in firms with only White executives. Furthermore, White executives in multiracial C-suites also receive higher total compensation. This only occurs in firms with weaker governance (High G-index).

To obtain this result, we consider only White executives and regress each of their compensation components (scaled by total pay) on a dummy that equals one if the C-suite has at least one ethnic minority executive and zero if it has only White executives. To identify weak governance, interact the indicator for minority executives in the C-suite with a dummy that equals one if the firm's Gompers, Ishii, and Metrick (2003) governance index (G-index) is above the median (i.e., poor governance). The results of this test show that, in firms likely to have weak governance, White executives in multiracial C-suites receive a greater fraction of their total pay in terms of performance-based stock and restricted stock and a lower fraction in salary than White executives in C-suites that only have White executives. This test includes industry-by-year fixed effects and position and business area fixed effects. Thus, it compares White executives in the same industry, in the same position, and in the same business area.

Table C2.1: White executives in all White C-suites vs White executives in Multiracial C-suites

This Table presents the results of an OLS regression of the fraction of each compensation component divided by total compensation. We use a dummy that equals one if the C-suite has at least one ethnic minority executive and zero if it has only White executives. We also interact this variable with a dummy that equals one if the G-index of the firm is above the median (i.e., poor corporate governance). The analysis only includes White non-CEO executives. We cluster standard errors by executive, and report t-stats in parentheses. Significance levels are indicated: *=10%, **=5%, ***=1%.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| VARIABLES | Salary /total | Bonus /total | Perf stock /total | Rest stock /total | Options /total | Non.Eq Inc /total | Other /total | Pension /total | Log (Total Pay) |
| (1 if minority in the C-suite) | -0.030** | -0.006 | 0.019* | 0.019* | -0.009 | 0.006 | -0.000 | 0.002 | 0.192** |
| x (High G-index) | (-2.252) | (-0.955) | (1.684) | (1.841) | (-0.956) | (0.618) | (-0.070) | (0.282) | (2.201) |
| 1 if minority in the C-suite | 0.005 | 0.007 | 0.004 | 0.002 | 0.002 | -0.016** | 0.002 | -0.006 | -0.037 |
| | (0.471) | (1.282) | (0.529) | (0.310) | (0.301) | (-2.233) | (0.323) | (-1.623) | (-0.790) |
| High G-index | -0.048*** | -0.007* | 0.029*** | 0.004 | 0.003 | 0.005 | -0.007* | 0.022*** | 0.401*** |
| | (-7.049) | (-1.881) | (4.717) | (0.707) | (0.487) | (0.895) | (-1.936) | (6.334) | (10.63) |
| Observations | 12,883 | 12,883 | 12,883 | 12,883 | 12,883 | 12,883 | 12,883 | 12,883 | 12,883 |
| R-squared | 0.142 | 0.131 | 0.122 | 0.117 | 0.185 | 0.132 | 0.076 | 0.196 | 0.172 |
| Position FE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Business area FE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| SIC2xYear FE | YES | YES | YES | YES | YES | YES | YES | YES | YES |

Appendix C3: Data limitation robustness test

One data limitation of our analysis is that, for some firms, we could not reliably establish the ethnicity of all C-suite members. In firms where we only have the ethnicity of a few executives, we restrict our analysis to only those executives. However, this approach could potentially bias our findings if the missing executives have characteristics that consistently affect our results. To mitigate this concern, in this appendix, we replicate all our analyses using the subsample of firms for which we have the ethnicity of at least 4 executives (out of 5 in the C-suite). If the missing executives bias the results, the findings here should be different from our baseline findings. Tables C3.1 to C3.5 show that this is not the case, as all our results are robust to only considering the sample of firm with full (or almost full) C-suite coverage.

Table C3.1: Ethnic pay structure similarity and racial pay gap

| | Racial pay gap | |
|---|---|---|
| | (1) | (2) |
| Ethnic Minority pay structure similarity in t | -0.158** | -0.115** |
| | (-2.510) | (-2.225) |
| Log of assets | 0.023 | 0.128 |
| | (0.157) | (1.218) |
| Log of firm age | 0.030 | 0.097 |
| | (0.230) | (0.683) |
| Log of avg C-suite total comp | 0.187* | 0.015 |
| | (1.790) | (0.169) |
| Observations | 1,179 | 966 |
| R-squared | 0.758 | 0.594 |
| Firm FE | YES | YES |
| Year FE | YES | YES |
| Excluding CEO | NO | YES |

Table C3.2: CEO and Board Ethnicity and Pay Structure Similarity

| | Ethnic pay structure similarity | | | |
|---|---|---|---|---|
| VARIABLES | (1) | (2) | (3) | (4) |
| 1 if ethnic minority CEO | 0.037 | 0.084** | | |
| | (1.587) | (2.236) | | |
| 1 if ethnic minority comp committee | | | 0.056** | 0.066** |
| | | | (2.365) | (2.389) |
| Log of assets | 0.051** | 0.043 | 0.006 | -0.021 |
| | (1.989) | (1.341) | (0.164) | (-0.452) |
| Log of firm age | 0.018 | 0.011 | 0.084* | 0.107** |
| | (0.584) | (0.321) | (1.719) | (2.303) |
| Log of avg C-suite total comp | -0.023 | -0.014 | 0.014 | -0.019 |
| | (-1.321) | (-0.670) | (0.541) | (-0.540) |
| Observations | 1,368 | 1,173 | 720 | 581 |
| R-squared | 0.439 | 0.427 | 0.624 | 0.636 |
| Firm FE | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES |
| Excluding CEO | NO | YES | NO | YES |

Table C3.3: Geography of racial affinity and ethnic pay structure similarity

| | Ethnic pay structure similarity | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Racial animus index | -0.003** | -0.013** | | |
| | (-2.193) | (-2.021) | | |
| SDG racism index | | | -0.027 | -0.028* |
| | | | (-1.692) | (-1.758) |
| Log of assets | -0.045* | -0.136 | -0.005 | -0.001 |
| | (-1.733) | (-0.862) | (-0.472) | (-0.108) |
| Log of firm age | 0.079*** | 0.294** | 0.021** | 0.012 |
| | (2.879) | (2.011) | (2.100) | (1.214) |
| Log of avg C-suite total comp | 0.055 | 0.129 | -0.021 | -0.027 |
| | (1.192) | (0.412) | (-1.015) | (-1.364) |
| Observations | 208 | 208 | 1,327 | 1,152 |
| R-squared | 0.449 | 0.390 | 0.083 | 0.089 |
| Firm FE | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES |
| Excluding CEO | NO | YES | NO | YES |

Table C3.4: Ethnic pay structure similarity and the CEO-pay-to-worker ratio

| | Log of pay ratio | | C-suite pay gap | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Ethnic Minority pay structure similarity in t | -0.163* | -0.302** | -1.191*** | -0.811*** |
| | (-1.750) | (-2.118) | (-5.191) | (-5.673) |
| Log of assets | 0.213 | 0.414 | -0.768 | -0.606 |
| | (0.937) | (1.651) | (-0.884) | (-1.303) |
| Log of firm age | 0.410 | 0.610 | -0.301 | -0.755 |
| | (1.209) | (0.768) | (-0.281) | (-1.357) |
| Log of avg C-suite total comp | 0.445*** | 0.191 | 1.124** | 0.693** |
| | (3.215) | (1.314) | (2.143) | (2.476) |
| Observations | 190 | 143 | 1,157 | 950 |
| R-squared | 0.953 | 0.947 | 0.624 | 0.653 |
| Firm FE | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES |
| Excluding CEO | NO | YES | NO | YES |

Table C3.5: Pay structure similarity and firm performance

| | Mkt/book | | ROA | | ROE | | Fraud | |
|---|---|---|---|---|---|---|---|---|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Ethnic pay structure similarity | -0.045* | 0.042** | 0.003* | 0.005*** | 0.007** | 0.008*** | -0.005 | -0.018* |
| | (-1.808) | (2.258) | (1.850) | (3.089) | (2.261) | (2.833) | (-0.690) | (-1.756) |
| Log of assets | -0.414*** | -0.319*** | -0.026*** | -0.019*** | -0.015 | -0.015 | 0.019 | 0.004 |
| | (-3.190) | (-3.419) | (-3.696) | (-2.902) | (-1.402) | (-1.423) | (1.018) | (0.193) |
| Log of firm age | 0.055 | -0.044 | 0.012 | 0.005 | 0.011 | 0.003 | 0.003 | 0.013 |
| | (0.569) | (-0.449) | (1.204) | (0.680) | (0.735) | (0.241) | (0.287) | (0.911) |
| Log of avg C-suite total comp | 0.241*** | 0.146** | 0.013*** | 0.012*** | 0.010 | 0.012 | -0.013 | -0.015 |
| | (3.273) | (2.348) | (3.204) | (3.067) | (1.485) | (1.605) | (-0.592) | (-0.600) |
| Observations | 1,097 | 1,173 | 1,368 | 1,173 | 1,368 | 1,173 | 947 | 788 |
| R-squared | 0.857 | 0.859 | 0.732 | 0.751 | 0.752 | 0.783 | 0.735 | 0.574 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Excluding CEO | NO | YES | NO | YES | NO | YES | NO | YES |

Appendix C4: Alternative measures of diversity

Our focus on pay structure is superior to an alternative focus on, for example, the total pay gap in the C-suite. To ensure that this is indeed the case, Table C5.1 replicates the results on firm performance and fraud reported in Tables 9 and 10, but using the racial pay gap instead of ethnic pay structure similarity as the dependent variable. Similarly, Table C5.2 uses the percentage of ethnic minority executives in the C-suite as the independent variable (this percentage takes the value of zero when there are no ethnic minorities). In both analyses, we find substantially weaker effects and mostly no significant results.

Table C4.1: Racial pay gap and firm performance

Panel A: All executives

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VARIABLES | Tobin's Q | Tobin's Q | ROA | ROA | ROE | ROE | Prof Mg | Prof Mg | REMP | REMP | Financial Misconduct | Financial Misconduct |
| Racial pay gap | -0.007 | -0.004 | -0.001 | -0.001 | -0.003* | -0.002 | -0.000 | 0.001 | -0.167 | 0.078 | 0.003 | 0.002 |
| | (-0.660) | (-0.343) | (-1.456) | (-0.760) | (-1.818) | (-1.157) | (-0.431) | (0.544) | (-0.266) | (0.105) | (1.085) | (0.815) |
| Log of assets | -0.332*** | -0.426*** | -0.018*** | -0.024*** | -0.013 | -0.020** | 0.016** | 0.012* | 10.460** | 9.632* | 0.046* | 0.055* |
| | (-5.507) | (-7.652) | (-3.578) | (-4.813) | (-1.462) | (-2.040) | (2.272) | (1.660) | (2.126) | (1.918) | (1.920) | (1.860) |
| Log of firm age | -0.044 | -0.025 | 0.002 | 0.006 | 0.006 | 0.008 | -0.011 | -0.007 | -3.790 | -1.292 | 0.015 | 0.009 |
| | (-0.640) | (-0.370) | (0.396) | (0.959) | (0.441) | (0.599) | (-1.415) | (-0.840) | (-0.790) | (-0.226) | (0.806) | (0.482) |
| Log of avg c-suite total comp | 0.230*** | 0.243*** | 0.017*** | 0.016*** | 0.014*** | 0.015*** | 0.013*** | 0.013*** | 9.567*** | 10.190*** | -0.009 | -0.013* |
| | (6.821) | (6.672) | (6.566) | (6.495) | (2.853) | (3.579) | (4.550) | (4.289) | (3.284) | (3.169) | (-1.340) | (-1.720) |
| Observations | 4,023 | 3,834 | 4,023 | 3,834 | 4,023 | 3,834 | 4,023 | 3,834 | 4,023 | 3,834 | 3,114 | 2,967 |
| R-squared | 0.817 | 0.854 | 0.734 | 0.784 | 0.734 | 0.779 | 0.832 | 0.859 | 0.826 | 0.851 | 0.571 | 0.615 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | | YES | | YES | | YES | | YES | | YES | |
| SIC2xYear FE | | YES | | YES | | YES | | YES | | YES | | YES |

Panel B: Excluding CEOs

| VARIABLES | (1) Tobin's Q | (2) Tobin's Q | (3) ROA | (4) ROA | (5) ROE | (6) ROE | (7) Prof Mg | (8) Prof Mg | (9) REMP | (10) REMP | (11) Financial Misconduct | (12) Financial Misconduct |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Racial pay gap | -0.016 | -0.010 | -0.001 | -0.001 | -0.006** | -0.005 | 0.001 | 0.001 | 0.925 | 1.340 | 0.001 | 0.001 |
| | (-0.913) | (-0.520) | (-1.081) | (-0.336) | (-2.055) | (-1.565) | (0.291) | (0.609) | (0.679) | (0.758) | (0.341) | (0.210) |
| Log of assets | -0.238*** | -0.314*** | -0.014*** | -0.020*** | -0.015 | -0.022** | 0.023*** | 0.019** | 14.575** | 13.246* | 0.019 | 0.013 |
| | (-3.531) | (-4.140) | (-2.665) | (-3.711) | (-1.492) | (-2.045) | (2.949) | (2.152) | (2.364) | (1.860) | (1.150) | (0.742) |
| Log of firm age | -0.088 | -0.072 | -0.002 | -0.001 | -0.008 | -0.011 | -0.024*** | -0.023** | -10.989** | -10.760 | 0.012 | 0.006 |
| | (-1.092) | (-0.847) | (-0.261) | (-0.174) | (-0.676) | (-0.773) | (-3.003) | (-2.408) | (-2.098) | (-1.575) | (0.876) | (0.382) |
| Log of avg c-suite total comp | 0.179*** | 0.187*** | 0.015*** | 0.015*** | 0.011 | 0.013** | 0.012*** | 0.011*** | 9.689** | 10.103** | -0.008 | -0.014 |
| | (4.475) | (4.041) | (5.058) | (4.588) | (1.573) | (2.220) | (3.381) | (2.910) | (2.350) | (2.132) | (-0.685) | (-1.120) |
| Observations | 2,497 | 2,291 | 2,497 | 2,291 | 2,497 | 2,291 | 2,497 | 2,291 | 2,497 | 2,291 | 1,967 | 1,790 |
| R-squared | 0.854 | 0.886 | 0.758 | 0.806 | 0.765 | 0.813 | 0.852 | 0.879 | 0.827 | 0.854 | 0.475 | 0.519 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | | YES | | YES | | YES | | YES | | YES | |
| SIC2xYear FE | | YES | | YES | | YES | | YES | | YES | | YES |

Table C4.2: Percentage of ethnic minorities and firm performance

| VARIABLES | (1) Tobin's Q | (2) Tobin's Q | (3) ROA | (4) ROA | (5) ROE | (6) ROE | (7) Prof Mg | (8) Prof Mg | (9) REMP | (10) REMP | (11) Financial Misconduct | (12) Financial Misconduct |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage of ethnic minority executives | 0.002 | -0.015 | -0.003 | -0.003 | -0.003 | -0.004 | 0.002 | 0.003 | 0.978 | 3.031 | 0.008 | 0.011 |
| | (0.041) | (-0.313) | (-0.746) | (-0.911) | (-0.465) | (-0.576) | (0.397) | (0.509) | (0.214) | (0.677) | (0.640) | (0.787) |
| Log of assets | -0.248*** | -0.303*** | -0.009*** | -0.013*** | -0.004 | -0.009** | 0.033*** | 0.027*** | 21.571*** | 18.509*** | 0.024*** | 0.025*** |
| | (-9.743) | (-11.186) | (-3.861) | (-5.519) | (-1.049) | (-2.334) | (10.080) | (8.732) | (7.416) | (6.675) | (3.770) | (3.600) |
| Log of firm age | -0.034 | -0.033 | 0.003 | 0.005* | 0.004 | 0.005 | -0.013*** | -0.011*** | -8.282** | -6.459* | -0.000 | 0.001 |
| | (-1.071) | (-1.048) | (1.172) | (1.883) | (0.898) | (0.999) | (-3.597) | (-3.230) | (-2.464) | (-1.876) | (-0.060) | (0.080) |
| Observations | 19,249 | 19,220 | 19,249 | 19,220 | 19,249 | 19,220 | 19,248 | 19,219 | 19,249 | 19,220 | 15,599 | 15,578 |
| R-squared | 0.734 | 0.764 | 0.630 | 0.684 | 0.624 | 0.672 | 0.748 | 0.790 | 0.753 | 0.799 | 0.439 | 0.455 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | | YES | | YES | | YES | | YES | | YES | |
| SIC2xYear FE | | YES | | YES | | YES | | YES | | YES | | YES |