

Venturing into Racial Diversity on Startup Boards

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Abstract

What drives racial diversity on startup boards? We provide the first evidence on this question by exploiting the demand shock from the 2020 George Floyd protests. Using facial recognition technology to measure race, we find that Black director appointments nearly doubled (from 1.8% to 3.1%) in the year following the protests, a much smaller response than in public firms. Access to diverse candidates shaped startups' ability to respond: appointments increased most in areas with more Black professionals and in executive and independent director roles, while venture capital firms showed no increase in Black appointees. Capital market incentives drove these responses: startups planning to raise capital in public or private markets were three times more likely to add Black directors. Rather than competing for the same directors, public firms expanded the candidate pool, increasingly appointing first-time directors. Despite the sudden increase in demand, Black directors had comparable qualifications to other directors, and startups adding Black directors showed no change in performance. Our findings reveal that concentrated ownership, while facilitating quick decisions, entrenches traditional networks that limit board diversity.

JEL: G30, G34, J15, J16, J71, L26, M13, M14

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Abstract

What drives racial diversity on startup boards? We provide the first evidence on this question by exploiting the demand shock from the 2020 George Floyd protests. Using facial recognition technology to measure race, we find that Black director appointments nearly doubled (from 1.8% to 3.1%) in the year following the protests, a much smaller response than in public firms. Access to diverse candidates shaped startups' ability to respond: appointments increased most in areas with more Black professionals and in executive and independent director roles, while venture capital firms showed no increase in Black appointees. Capital market incentives drove these responses: startups planning to raise capital in public or private markets were three times more likely to add Black directors. Rather than competing for the same directors, public firms expanded the candidate pool, increasingly appointing first-time directors. Despite the sudden increase in demand, Black directors had comparable qualifications to other directors, and startups adding Black directors showed no change in performance. Our findings reveal that concentrated ownership, while facilitating quick decisions, entrenches traditional networks that limit board diversity.

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I. Introduction

Racial and gender diversity in senior leadership positions remains limited, raising concerns about inefficient talent allocation (Hsieh et al., 2019). Although public companies have increased board diversity through both policy mandates and social pressure (Bogan et al., 2024; Balakrishnan et al., 2023; Fos et al., 2023; Balogh and Yonker, 2024), there is no systematic evidence on board diversity in private companies. Our study fills this gap by documenting board diversity in venture-backed startups and examining how they respond to pressure for increased diversity. Understanding diversity in startup boards is crucial for measuring progress in racial representation, given their economic importance: private companies employ two thirds of the workforce (Asker et al., 2015), and nearly half of today’s public companies were once VC-backed (Lerner and Nanda, 2020; Gornall and Strebulaev, 2021).

Startups offer a distinct setting for examining barriers to board diversity because they face different governance pressures than public firms. Unlike public companies that must comply with regulatory mandates and face direct public scrutiny, startup ownership is concentrated in the hands of founders and venture capital investors (Ewens and Malenko, 2022). These institutional differences suggest that startups likely have different patterns of board diversity and respond differently to diversity pressures than their public counterparts.

Our study combines image-recognition techniques with extensive manual review to build the first large database of board diversity for startups. Our sample comprises 131,000 startup directors collected from PitchBook. Although the PitchBook dataset does not cover the entire universe of startups, its coverage is relatively thorough and does not appear to be a function of race.¹ To classify directors, we use machine learning algorithms that combine image and name processing, supplemented by an extensive manual review.²

The concentrated ownership and limited public scrutiny of startups creates distinct economic forces shaping board diversity, yielding testable predictions about representation levels and startup responses to external pressure. First, we predict systematic differences in board diversity between private and public firms. Second, we examine whether the George Floyd (GF) protests represented a demand shock by testing if startups’ responses varied with their pre-shock access to diverse director candidates, which would indicate the event primarily increased demand rather than supply. Third, we hypothesize that startups’ responses depend on their external pressures (e.g., proximity to capital market interactions) and internal characteristics (e.g., employee composition and investor base).

¹ Ewens and Malenko (2022) show that PitchBook’s coverage is incomplete. We supplement PitchBook by scraping start/end dates from directors’ LinkedIn profiles and Form D. We validate our data by matching startups in our sample to LinkedIn and to the corporate registry of firms registered in Massachusetts.

² See Appendix A.A.1 for details on our image classification process. Our out-of-sample cross-validation tests confirm that our classification algorithms perform well.

Finally, we test competing predictions about director quality and firm performance: if startups previously discriminated against diverse directors, increasing diversity could improve performance, while if external pressure led to compromised selection standards, it could harm board effectiveness.

Startup boards have low diversity relative to the general population, the pool of potential directors, and public firms. Although Blacks and Hispanics make up 33% of the U.S. population, they represented only 3.4% of new startup board members in 2019, before GF, increasing to 5.6% by 2021, largely driven by Black directors. While the general population might be the appropriate long-term benchmark (Hsieh et al., 2019), the relevant short-term comparison may be the pool of potential directors. One proxy is the racial composition of startup employees, where Blacks and Hispanics represent 11%. Under either benchmark, these groups are underrepresented.³ Moreover, startup board diversity lags behind that of public firms, where Blacks and Hispanics represented 9.6% of appointments in 2019 and sharply jumped to 34.3% in 2021.

The muted startup response to GF could stem from either weak (or no) demand increase or binding supply constraints. To test for supply constraints, we construct a proxy for “director supply” using the racial composition of ~ 1 million startup employees. Focusing on Black directors—the group with the largest post-GF increase—we find that the availability of potential candidates accounts for most of the post-GF increase in board diversity. Similarly, both board diversity and the response to GF are lowest among investor directors, who come from VC firms that themselves have low diversity (Gompers and Wang, 2017; Cassel et al., 2022). These findings suggest that the availability of diverse candidates shaped which startups could respond to GF.

We then examine how external and internal forces shaped startups’ responses to GF. Using startups’ funding cycles and pre-GF capital raised to predict future interaction with private and public markets, we find that startups facing capital market pressure increased board diversity significantly more post-GF, particularly potential IPO candidates. This does not appear to reflect startups responding to California’s board diversity regulations. Internal factors yield mixed results: startups with diverse employees responded more strongly to GF, while those backed by Black and Hispanic VCs did not.

We next test whether board diversity is related to startup outcomes, a natural question given directors’ documented influence on major corporate decisions (Stuart and Yim, 2010) and firm performance (Ahern and Dittmar, 2012). Economic theory offers competing predictions about the effects of board diversity on startup outcomes. If startups discriminated against Black directors pre-GF, only exceptionally qualified Black candidates would have

³ We focus on Black and Hispanic directors but also document Asian and Female representation. In our sample, Asian directors are overrepresented, constituting 14.6% of director appointments as of 2021 compared to their U.S. population share of 7.2%. Women represent 20.0% of director appointments in 2021.

secured board seats post-GF, leading to startups with Black directors outperforming those without (Becker, 1957). However, if external pressure led firms to lower qualification standards, forced diversity could harm startup performance.

To test these predictions, we compare startups with similar pre-GF probabilities of success; otherwise, differences in startup quality or risk could confound our results. We therefore construct matched pairs of startups that are identical on key predictors of success: industry, state, founding year, and capital raised pre-GF. Within these matched pairs, we find that startups with Black directors are more likely to raise follow-on rounds post-GF, although they do not raise more capital conditional on fundraising. We find no differences in exits, growth, or survival between startups with and without Black directors, similar to evidence from public firms in Balogh and Yonker (2024). These results suggest either that startups did not discriminate against Black directors pre-GF or that conventional startup performance metrics are poor proxies for director quality.

We complement our outcome tests by comparing ex-ante measures of director qualifications between underrepresented and non-underrepresented directors appointed around GF. Following Ahern and Dittmar (2012), we focus on observable characteristics such as age, work experience, and education. We find that underrepresented directors appointed pre-GF had better observable characteristics than those appointed post-GF. However, pre-GF, underrepresented directors had stronger observable characteristics than their non-underrepresented counterparts, while post-GF, there are no significant differences between these groups. This suggests that the observed decline in qualifications is entirely due to underrepresented directors having better observable characteristics pre-GF.⁴

Our unique sample enables us to track individual directors across public and private markets, allowing us to examine whether public firms' stronger response to GF came at the expense of startups' access to diverse directors. If public firms, facing intense scrutiny, outcompeted startups for diverse directors, we would expect increased migration of directors from startup to public boards. However, we find the opposite: the fraction of newly appointed Black directors on public boards with startup board experience decreased from 27.8% pre-GF to 20.8% post-GF. Instead, public firms showed greater willingness to appoint Black directors without prior board experience (increasing from 56.6% to 70.1% of appointments), while startups' first-time director appointments remained stable. This pattern suggests that the public-private gap reflects differences in firms' responses to GF rather than competition for directors.

Our findings shed light on talent allocation in a critical, albeit small, labor market. If director talent were randomly assigned, the prevalence of characteristics such as gender

⁴ We cannot dismiss the possibility that underrepresented directors differ from non-underrepresented ones in unobserved ways. Our conclusion assumes that unobserved characteristics positively correlate with those observed.

and race should mirror the general population. The fact that director representation does not reflect the population, public-firm representation, or the pool of potential directors suggests potential talent misallocation, which has significant economic consequences (Hsieh et al., 2019). If bias reduces the demand for director diversity, firms may deviate from value-maximizing decisions. Our evidence shows that while external pressure through capital market interactions can drive changes in board composition, startups' reliance on traditional director networks limits their access to diverse candidates. The low levels of Black and Hispanic directors appear driven by their underrepresentation in the career paths and professional networks that typically lead to startup board seats (Bohren et al., 2023).

Our paper contributes to three streams of research. First, we contribute to the literature on diversity in boards. Previous studies highlight the role of enhanced networking (Agarwal et al., 2016) but also note the stark disparity in leadership roles (Field et al., 2020). Adams and Ferreira (2009) show that diversity drives better monitoring, but they observe no difference in firms' financial outcomes. Both Kim and Starks (2016) and Bernile et al. (2018) argue that female directors enhance firm value and lower risk. However, Ahern and Dittmar (2012) suggest that diversity mandates lower directors' experience levels. Gow et al. (2023) find that while institutional investors do not oppose diverse appointments, they fail to champion them through their voting behavior. Gormley et al. (2023) explore the influence of large institutional investors on firms' director appointments and find that these efforts increase gender diversity without compromising quality. While the above studies all pertain to the boards of public firms, Lowry (2022) shows that private firms' governance structures, especially VC-backed firms', increasingly resemble those of public firms. Our study contributes to this literature by documenting diversity on startup boards and relating public firms' board diversity to that of private firms. We show that startups respond to the GF demand shock, but to a lesser extent than public firms. Furthermore, the response to the shock is constraint by director supply, and does not lead to the appointment of underqualified Black directors to startup boards or to worse startup performance.

Second, our study contributes to the nascent literature on startup boards. Ewens and Malenko (2022) show the role of independent directors in mediating the shift of control from founders to VCs. Ewens and Sosyura (2023) find that the unexpected loss of an investor director lowers firm value. Montag (2024) shows that experienced directors facilitate startup growth. We contribute to this literature by providing the first evidence on the level and evolution of racial and gender diversity on startup boards. We also document differences in how startups respond to public calls for increased board diversity following GF and how this relates to performance.

Our study contrasts with the burgeoning literature on the George Floyd social movement (Bogan et al., 2024; Pajuste et al., 2024; Balakrishnan et al., 2023; Balogh and Yonker,

2024). In this study, we find that the reaction to GF is much lower among startup firms than public ones, likely reflecting institutional constraints and the availability of candidates. Balakrishnan et al. (2023) show that public firms with more exposure to diversity tend to appoint Black directors and do so without a reduction in quality. Consistent with their findings, we find no evidence that minority directors appointed to startups following GF have worse observable characteristics than non-minorities appointed over the same period.

Our findings highlight how capital market interactions can reshape private company governance even in the absence of direct regulation. The sharp response of IPO-bound startups suggests that public market standards influence private firm behavior through financial market pressure rather than social movements alone. This has important policy implications: while mandates like board diversity quotas directly affect public firms, their influence may extend to private companies through capital market channels. However, the muted overall response from startups—particularly when the supply of diverse candidates is low—points to persistent barriers within the private market ecosystem that limit the reach of such indirect pressure. Addressing these structural constraints may be necessary to achieve broader changes in board diversity.

The remainder of the paper is organized as follows: Section II describes how we construct the data. Section III outlines our empirical strategy. We present our key findings in Section IV. Section V concludes.

II. Sample Construction

Our study requires that we identify directors and classify their race and gender. Our primary source for startup directors is PitchBook. We use BoardEx for public-firm directors. For race and gender data on public firm directors, we merge BoardEx with ISS. For startup directors, we use PitchBook for gender data and classify race ourselves, as no database contains race for startup directors. We classify race using a combination of image- and name-processing algorithms combined with extensive manual review. In the sections to come, we describe how we construct the samples used in our analysis.

A. *Boards of Directors in Startups*

While no existing dataset offers comprehensive coverage of boards for the universe of private companies, we rely on PitchBook to identify board member appointments in startups. Specifically, we extract the years when directors are appointed and when they leave the board. To augment this data, we collect LinkedIn URLs for these board members from PitchBook and supplement any missing URLs through extensive manual searches.

We use public LinkedIn profiles for three purposes. First, we use profile pictures from

LinkedIn when classifying race. Second, we collect resume data on director education and work history. We use this data to evaluate qualifications of newly appointed directors. Third, we use resumes to fill gaps in PitchBook on the start and end dates of the director tenures. This effort increases our coverage of start dates for director appointments from 69.5% to 81.9%, which further improves to 90.4% once we add in dates from Form D filings. We use the start and end dates for each director-startup pair to construct a firm-year panel of board diversity. In robustness tests, we focus on director appointments, keeping only firm-years with new appointments.

A.1. Classifying Race of Directors of Startups

PitchBook includes individual gender data but not race. Thus, a key contribution of our paper is classifying startup directors’ race. While name-based estimations of race are commonly employed and may be suitable for some minority groups, they are less effective for others. [Cook et al. \(2022\)](#) show that using names alone yields many false negatives for Black individuals, and that incorporating images significantly improves accuracy. Nevertheless, even when images and names are used in combination, some individuals end up being misclassified.

We therefore adopt a hybrid approach, combining image and name algorithms with manual review. Overall, we process 131,178 unique directors appointed to boards between 2000 and 2021.⁵ For brevity, we outline our approach here and defer a detailed description to Appendix A.

We initially classify directors using an algorithmic approach that combines director images and names (see [Cook et al., 2022](#), for details). To improve the accuracy of our classifications, we hire three UpWorkers to manually review them. We select UpWorkers who self-identify as Hispanic, Black, or Asian American, as we hypothesize that they can more accurately identify individuals of their own ethnic groups ([Ma et al., 2021](#)). To facilitate the review, we provide them with both the profile picture and the director’s name.

To reduce errors, the UpWorkers conduct three full reviews for each director, with a fourth review of those proposed as Black or Hispanic. Lastly, two of the authors independently verify all director classifications.

Figure 1 shows the distribution of directors by race. Panel A shows the exact counts, while Panel B compares the proportions of each race to their respective population shares according to the 2020 U.S. Census, as well as the fraction of startup employees in our sample of each race. Under either benchmark, Black and Hispanic directors are

⁵ This exceeds the number of startup directors in our sample, as the PitchBook data includes directors appointed after the firm becomes publicly traded. We leverage this overlap in sample to validate our approach by comparing our classifications with those of ISS. We discuss the results of this validation exercise in Appendix A.A.1.

underrepresented while White directors are overrepresented. Asian directors are more prevalent than their population share, but underrepresented relative to the fraction of Asian startup employees.

[INSERT FIGURE 1 ABOUT HERE.]

A.2. How Good Is PitchBook’s Coverage of Startup Directors?

One concern is whether PitchBook has good coverage of startup directors and, importantly for our study, whether its coverage is a function of race. While we expect there to be gaps in PitchBook’s coverage, we assume that its coverage is not a function of race. Note that PitchBook does not collect race as part of its data collection process.

Panel A of Table 1 shows our initial sample of 243,213 director appointments across 139,657 firm-years. Of these, we successfully identify director race for 196,464 appointments, resulting in an 81% coverage rate. We are unable to classify race when we cannot find a profile picture of a director. In 112,115 firm-years, we know the race of at least one director appointed to a board.

Panel B of Table 1 summarizes our sample of public firms, which relies on ISS data. The table highlights the low coverage of race for directors in public firms in the early part of the sample. In fact, our approach yields a better coverage of director race in all years except for the 2020-2021 period.

[INSERT TABLE 1 ABOUT HERE.]

To facilitate comparisons with board diversity in public firms, we restrict our main analysis to startup-years from 2013, when race coverage among public firms is at least 50%.

A.2.1 Validating PitchBook’s Coverage Using External Sources

We do two validation exercises to assess the reliability of our sample and the plausibility of our assumption that PitchBook’s coverage is not a function of race. First, we match our startups directly to the universe of public profiles on LinkedIn, which we acquire from the data aggregator CoreSignal. For the 4,890 companies we match, we search for directors appointed between 2013 and 2021 among all current and former employees associated with the company, according to LinkedIn.⁶ As shown in Table A1, Panel A, PitchBook covers approximately 96% of the directors we find on LinkedIn. Furthermore, we find

⁶ We search for job titles indicating a director role. We use LinkedIn profiles of directors in our PitchBook sample to isolate titles associated with director roles.

no evidence that we are undercounting racial minorities, although we have slightly lower coverage of insider directors than of outsider and investor directors.⁷

Our second approach focuses on startups headquartered in Massachusetts, as these firms are required to make yearly public state filings that include a list of their directors and executive officers.⁸ We use startup websites to collect directors' images. We keep the 128 startups whose websites display images of all the 454 directors listed on filings.⁹ Panel B of Table A1 reports the racial composition of directors in our sample versus those from the Massachusetts sample. While our PitchBook sample has a slightly lower percentage of non-white directors, the representation is relatively similar.

B. Startup Director Appointments by Director Type

In Table A2, we decompose director appointments by director type, following [Ewens and Malenko \(2022\)](#) which classify three types of directors: insiders, who are company executives; outsiders, who are usually independent and unaffiliated with the company or its investors; and investors, who typically secure board seats as part of their investment in the firm ([Amornsiripanitch et al., 2019](#); [Gompers et al., 2020](#)).

Panel A shows the count of newly appointed directors in each role who are Black, Hispanic, Asian, or Female, while Panel B shows the proportions relative to all director appointments. We see that Black, Hispanic and Female directors have the least representation among investor directors. By contrast, Asians have a high representation across all director types, with their lowest representation among outsider directors. These statistics are consistent with the literature highlighting the underrepresentation of Blacks, Hispanics, and Females in the private equity industry ([Gompers and Wang, 2017](#); [Cassel et al., 2022](#)).

C. Startup Employees

To understand the relationship between employee and board diversity, we classify startup employees by race. We use CoreSignal data from 2017 to 2023 to identify the employees. CoreSignal provides a historical record of all U.S. employees with public LinkedIn profiles. The company began collecting this data in 2017, so we start the employee sample in that year to avoid survivorship bias. Using the employment start and end dates, we create a dataset of the number of employees by race at each firm in a given year.

⁷ For example, in our LinkedIn sample, Black directors comprise 1.22% of all directors compared to 1.14% in PitchBook, while Hispanic directors comprise 1.42% versus 1.38%. See Panel A of Table A1 for full comparisons.

⁸ We used [this link](#) to search for companies in our sample and individuals listed as directors on each startup's filing as of spring 2024.

⁹ We classify the race of these directors following the procedure described in subsection II.A.1.

To classify the race of these employees, we follow the process outlined in II.A.1, with two exceptions: 1) we use only employee images from LinkedIn, and 2) we only do one round of manual review due to the large number of employees (about 1 million).

Table A3 summarizes board and employee diversity at the firm-year level, the unit of our main analysis. Panel A presents statistics for the full sample, Panel B for insider directors, Panel C for outsider directors, and Panel D for investor directors. We have data for 395,291 firm-years from 2013 to 2022. Of these, we know the race of at least ten employees for 34,586 firm-years from 2018 to 2022.

D. Black and Hispanic Ownership of the Investment Firm

To examine whether a more diverse investor base impacts board diversity, we incorporate a measure of the fraction of the VC investors in the startup that are Black and Hispanic (B&H)-owned. We rely on the classification of private capital groups from Cassel et al. (2022), which defines a group as B&H-owned if at least 50% of its founders or most of its senior partners are Black or Hispanic.¹⁰

E. Board of Directors in Public Firms

For public firms, we use BoardEx, which maintains a comprehensive dataset of public boards' directors. We combine the BoardEx datasets on director committees and individual directors' employment tenures on specific boards. We aggregate board director positions at the firm level, resulting in a firm-year panel dataset containing the roster of directors as of each firm's annual report date.

We merge BoardEx with ISS to get director race. See Appendix C for details on how we merge ISS with BoardEx.

E.1. Identifying Previously Venture-Backed Public Firms

The final part of our analysis explores how the lack of racial diversity on startup boards affects board diversity when these startups transition to public markets. We examine whether board diversity is different for public firms that received VC funding before their IPO. We rely on the classifications by Gornall and Strebulaev (2021) to determine whether public firms were VC-backed.¹¹

¹⁰ The list of B&H-owned private capital groups we use is available here: <https://eyimfor.com/docs/MinorityGroupList.xlsx>.

¹¹ We are grateful to the authors for making this data available.

III. Empirical Strategy

A. How Did Board Diversity Change post George Floyd?

We want to understand whether supply constraints limit startups’ ability to appoint diverse directors, and what impact internal and external factors shape startups’ response to public pressure. To that end, we leverage the George Floyd movement (GF) as a shock to the demand for diverse directors.

While prior research have established that public firms responded to GF by appointing more Black directors (Bogan et al., 2024; Balakrishnan et al., 2023; Fos et al., 2023; Balogh and Yonker, 2024), it is not immediately obvious that demand for Black directors increased among startups as well. Private firms are under less public scrutiny and were not covered by policy initiatives aimed at increasing board diversity, such as the California mandates for board diversity or Nasdaq’s “comply or disclose” rules.

We therefore begin by analyzing the impact of GF on startup board diversity. We estimate the following regression at the firm-year level using OLS:

$$Board\ Diversity_{it} = \beta_1 I(Post-GF)_t + \beta_2 Ln(Board\ Size)_{it} + \alpha_i + \epsilon_{it}, \quad (1)$$

where $Board\ Diversity_{it}$ is the fraction of board members in firm i in year t who are Black, Hispanic, Asian, or Female. $Ln(Board\ Size)_{it}$ is the log of number of directors on the board as of year t , $I(Post-GF)$ is an indicator for 2020-2022, and α_i stands for firm fixed effects. Due to limited observables for private firms, firm fixed effects are essential for controlling for time-invariant unobservable characteristics. The sample period runs from 2013 to 2022. We are primarily interested in β_1 , which captures the effect of GF on board diversity.

To identify β_1 as reflecting an impact of the GF social movement, our primary identifying assumption is that no other contemporaneous factors are driving changes in startup board diversity, conditional on the size of the board and firm fixed effects.

Given that the variation we are exploiting is at the year level, we need to separate this effect from potential confounding effects from other macro events coinciding with George Floyd’s murder. These events (such as the COVID-19 pandemic) would have to explain the increased likelihood of diverse-director appointments through channels unrelated to the GF social movement.

We take several steps to mitigate such concerns. First, we compare the magnitude of the change in Black directors to the change in other groups. Intuitively, as Blacks were the racial group most strongly impacted by GF, we expect Hispanic and Asian representation among directors to be less impacted by GF. In contrast, any confounding events that drive demand for racial diversity more generally should not be concentrated in a specific racial group. For example, if COVID’s disproportionate impact on minority communities drove

our results, we would expect similar increases in director appointments across minority groups given their comparable health and economic vulnerabilities during the pandemic.

Second, we use a difference-in-differences strategy to identify the impact of GF by comparing startups with varying exposure to diversity pressure. We classify exposure using pre-GF startup characteristics, allowing us to control for confounding time trends within each director type and racial group. For any alternative explanation like COVID to explain our results, it must account for both the differential changes across racial groups *and* the systematic variation with startup-level pressure measures. The difference-in-differences approach relies on the assumption that firms with different levels of pressure would have maintained parallel trends in board diversity absent GF.

Third, we compare the responses between public firms and startups to directly test whether specific factors like California laws, Nasdaq requirements, geographic location, or board size can explain the changes in board diversity. While this cannot fully account for all potential confounders, it helps quantify the importance of these alternative explanations.

B. Difference-in-Differences Estimation

For our difference-in-difference strategy, we estimate the following equation at the firm-year level using OLS:

$$\begin{aligned} \text{Board Diversity}_{it} = & \beta_1 I(\text{Post-GF})_t \times \text{Treated}_i \\ & + \alpha_i + \gamma_t + \Gamma X_{i,t} + \epsilon_{it}, \end{aligned} \tag{2}$$

where *Treated* indicates firms with higher exposure to the effect of GF based on pre-GF characteristics such as capital market proximity, industry, location, minority investor presence, pre-existing Black directors, and employee racial composition. In this specification we add year fixed effects γ_t to control for time trends, while $X_{i,t}$ includes the log of board size and the log of capital raised by the startup.

IV. Results

We begin by documenting the low representation of Black, Hispanic, and Female directors on startup boards and their muted response to GF. We then examine whether this limited response reflects low demand or binding supply constraints by analyzing variation in director availability across industries, states, and director types. To understand demand-side factors, we investigate how external and internal pressures shape startups' responses. We assess the economic implications by testing the relationship between board diversity and startup outcomes, as well as changes in director quality post-GF. Finally, we explore how institutional differences between public and private firms explain their varying responses

to GF, showing that early-stage board composition persists after IPO.

A. Board Diversity in Startups

We begin by providing a comprehensive description of startup board diversity, tabulated in Panel A of Table A4. By 2021, 1.6% of startup directors are Black, 1.7% Hispanic, 12.1% Asian, and 11.6% Female. These figures represent an increase in board diversity over time.

Relative to the U.S. 2020 Census, where Blacks, Hispanics, Asians, and women account for 14.2%, 18.7%, 7.2%, and 50.9% of the general population, most groups remain underrepresented on startup boards, except for Asians who exceed their population share.

An alternative benchmark to the general population is the racial composition of individuals working in startups, which we extract from our sample of ~ 1 million startup employees. In our sample, 5% of startup employees are Black, 6% Hispanic, 14% Asian, and 75% White. Compared to their prevalence among startup employees, Black, Hispanic, and Asian directors are underrepresented, while Whites are overrepresented.

To capture the pace of change in startup board diversity, we focus on director appointments in Panel A of Table A5. Female appointments have increased over time, accelerating in 2017, which coincides with the “#MeToo” movement. Startups appointed 11.0% women in 2016, nearly doubling to 20% by 2021. The increase in racially diverse directors is concentrated in the period following George Floyd (GF) and is particularly large for Black directors. The percentage of Black directors appointed nearly doubled from 1.6% in 2019 to 3.1% in 2021.

We contrast these numbers to boards of public firms. Figure A1 and Table A5 show the differences between startups and public firms for appointments, while Figure A2 and Table A4 document these differences in levels of board diversity. Overall, startups have more Asian directors, while public firms have more Black, Hispanic, and Female directors.

While both startups and public firms respond to GF by appointing more Black directors, the response in startups pales in comparison to public firms, where the percentage of Black director appointments quadrupled from 7.1% in 2019 to 28.7% in 2021.¹²

These differences in response might reflect public firms’ greater exposure to scrutiny and regulation.¹³ Despite operating in separate regulatory environments, these markets are linked: 28.9% of directors appointed to public firms in 2020-2021 previously served

¹² While the fraction of Black directors appointed is smaller in startups, even post-GF they appoint more Black directors in absolute terms (560) than public firms (501). See Table A16.

¹³ California signed two board diversity rules into law in 2018 (SB 826) and 2020 (AB 979), requiring diverse directors starting in 2021. These laws were ruled unconstitutional in 2022 and 2023, respectively. The Nasdaq’s board diversity rule, approved by the Securities and Exchange Commission in 2020 and in effect since the end of 2023, requires firms to have diverse board members or explain why they are unable to comply. Since 2019, the NYSE Board Advisory Council has provided assistance in identifying diverse candidates.

on startup boards. We examine these institutional differences more systematically in section IV.G.

This stark contrast between public and private responses raises a natural question: do startups facing public market pressure respond like public firms? To test this, we classify startups in the top decile of total capital raised as of 2019 as “close to IPO,” since their size makes public markets their most viable exit route.

[INSERT FIGURE 2 ABOUT HERE.]

Figure 2 shows that startups close to IPO appointed more diverse directors, with the strongest response among Black directors following GF. These IPO-bound startups similarly showed a larger response to “#MeToo” in 2017. Moreover, we find stronger responses in industry-state combinations with above-median racial representation among non-director employees in 2019. Figure 3 shows that startups in these areas—with more potential Black director candidates—responded more strongly to GF.

[INSERT FIGURE 3 ABOUT HERE.]

These initial patterns suggest a strong role for both capital market pressure and supply constraints in shaping board diversity. The remainder of our analysis systematically examines how these and other factors influence startups’ ability to diversify their boards.

B. Startups’ Response to George Floyd

As a starting point for exploring the evolution of startup board diversity, we test whether the increase in racial and gender representation on boards following GF is statistically significant. In Table 2 we show the results of estimating equation (1). We measure racial and gender diversity at the firm-year level as the proportion of board directors of a given race or gender. The dependent variable is the board’s proportion of Black directors in Column (1), Hispanic directors in Column (2), Asian directors in Column (3), and Female directors in Column (4). In Panel A, we include fixed effects for the state where a startup is located, while we replace these with firm fixed effects in Panel B to control for unobserved time-invariant firm characteristics. The number of observations is lower in Panel B because startups with only one observation drop out of the regression.

[INSERT TABLE 2 ABOUT HERE.]

The estimated coefficient on the *Post-GF* indicator is positive and statistically significant across all columns in Panel A, reflecting an increase in racial minority and Female directors over time.

When we focus on within-startup variation in Panel B, we find a statistically significant effect post-GF for Black and Female directors. The high R-squared values (above 0.92)

indicate that firm fixed effects explain almost all variation in board diversity, suggesting our estimates are unlikely to be affected by omitted variables. The coefficients in Columns (1) and (4) of Panel B imply that the fraction of Black and Female directors on the board is 0.11 and 0.54 percentage points larger post-GF, respectively. In this sample, 1.37% and 10.27% of all startup board directors are Black and Female, respectively. The estimates therefore imply an 8% and 5% increase in Black and Female director representation following GF. We do not find any change for Hispanic and Asian directors.

These estimates focus on the fraction of diverse board members. As an alternative, in Table A7, we replace the dependent variable with the fraction of diverse members among the newly appointed directors and find results consistent with the main specification.

To attribute the increase in board diversity to the GF movement, we require that no confounding macro factors (such as the COVID-19 pandemic) explain them. A confounding event would need to generate heterogeneous effects across racial groups, specifically driving increases in Black and Female directors while leaving Hispanic and Asian representation unchanged. This pattern is difficult to reconcile with alternative explanations like COVID-19, which affected Black and Hispanic minority communities similarly through health and economic channels.¹⁴

The differential response across racial groups, particularly for Black directors, suggests GF primarily affected demand for diversity. We exploit this demand shock to examine what constrains startups' ability to diversify their boards. Our identification leverages variation in startups' access to diverse candidates and exposure to market pressure, using time fixed effects to absorb common macroeconomic shocks.

C. *Did the Response to GF Depend on the Supply of Diverse Directors?*

If GF primarily increased demand for diverse directors, we would expect areas with greater supply to show stronger responses. Figure 4 demonstrates this by showing how board composition responds in different demand and supply environments. The y-axis, *Implicit Value*, measures the economic value of adding a diverse director, which includes both explicit compensation and implicit benefits like access to networks, career advancement, and reputation gains. Panel (a) shows that under weak demand, differences in supply would not matter, whereas Panel (b) illustrates how supply constraints would generate variation in appointment rates if GF was mainly a demand shock. We test this prediction by constructing a proxy for director supply based on the pool of potential candidates. While the ideal measure would capture all individuals considered for board seats, we

¹⁴ Note that the trend of increasing Female representation started in 2017 following the “#MeToo” movement.

observe that 85% of startup directors have prior startup experience.¹⁵ We therefore use the racial composition of startup employees as of 2019, measured at the state, industry, or industry-state level. To focus on potential candidates, we exclude all current directors when constructing this measure of supply.

[INSERT FIGURE 4 ABOUT HERE.]

Table 3 presents results from estimating equation (2), using the fraction of diverse startup employees as of 2019 as the measure of director availability. Panel A presents results for Black directors, with Column (1) providing the baseline startup response post-GF. Column (2) adds an interaction of the fraction of Black startup employees in the state. The estimate suggests that the response is stronger in states with more supply, albeit the estimate is only significant at the 10% level. A one standard deviation increase in the state supply is associated with a 0.04 percentage points larger increase in Black directors (31% of the average response post-GF). Columns (3) and (4) measure supply at the industry and industry-state level, respectively. Here we find a strong effect, both statistically and economically. In both columns, a one standard deviation in the supply of Black directors is associated with a 0.08 percentage points larger response to GF (58% of the average response post-GF).

[INSERT TABLE 3 ABOUT HERE.]

Consistent with the GF shock mainly affecting Black directors, Panels B and C of Table 3 show mixed effects for other racial groups. For Hispanics, a higher supply at the state level is associated with fewer Hispanic directors post-GF, while a higher supply at the industry level has a positive effect. However, both effects are only significant at the 10% level, with no significant relationship at the industry-state level. For Asians, a higher state-level supply predicts lower Asian director appointments, with no significant industry-level relationship.

C.1. Heterogeneity by Director Type

Our second approach for examining supply constraints leverages variation in the availability of diverse candidates across director types. We distinguish between three roles: insiders (company executives); investor directors (venture capital partners); and outsiders (directors unaffiliated with the startup or its investors). Given that outsider directors draw from the broadest talent pool of diverse directors, we expect the largest post-GF increase in this category if supply constraints matter for startups' response. In

¹⁵ A director has prior startup experience if she worked at a startup prior to her appointment, according to LinkedIn. We match firms in LinkedIn to startups in PitchBook using unique matches on name and state, websites, or startup LinkedIn URLs.

contrast, the documented low diversity in VC firms (Gompers and Wang, 2017; Cassel et al., 2022) suggests we should see a smaller response among investor directors.

We present our estimates for board diversity by director type in Table 4. Panel A focuses on inside directors, Panel B on outside directors, and Panel C on investor directors. Each panel includes all firm-years with at least one director of that type. We restrict our sample to startups that have raised at least some VC funding, to ensure that startups with investor directors are similar to those with insider and outsider directors. This allows us to control for the log of cumulative funding the startup has raised to date in addition to controlling for the log of board size.

[INSERT TABLE 4 ABOUT HERE.]

It is clear from the table that the response to GF is different across director types. The estimates from Panel A show that the fraction of Black inside directors increases by 7% ($=0.102/1.49\%$) post-GF, while the fraction of Female inside directors increases by 4% ($=0.484/11.99\%$). Panel B suggests that the increases are larger in magnitude for outside directors: 21% for Blacks and 11% for Females. By contrast, Panel C shows no change in the fraction of Black investor directors post-GF, while Female investor directors increased by 3%. Table A8 shows similar results for Blacks and Females for new director appointments following GF.

The low representation of Black and Female directors among investor directors reflects institutional constraints within venture capital firms that limit startup board diversity and responses to GF. A potential solution would be VC firms hiring more underrepresented groups in junior roles, creating a pipeline for future investor directors. However, Figure A3 shows no increase in racial diversity at any seniority level in VC firms post-GF, indicating investor directors will likely remain the least diverse type.

D. External and Internal Factors Influencing the Startups' Response

In this section, we examine the influence of external and internal factors on startups' response to GF. We begin with the influence of internal stakeholders such as investors and employees, and then investigate the influence of external factors such as capital markets, customers, and regulation.

This approach tests the mechanisms driving the change in diverse director representation post-GF by focusing on the pressure on firms from these stakeholders. By including year fixed effects, we control for time trends and exploit heterogeneity in firms' exposure to public pressure, as captured by the *Treated* term in equation (2).

D.1. Internal Factors

D.1.1 Racial Diversity of the Startup’s Employees

We begin by investigating the potential effect of internal pressure from an important stakeholder: employees. We estimate equation (2) using the proportion of employees in the startup who are Black or Hispanic in 2019 as our treatment variable. This allows us to test whether startups with more racially diverse workforces do more than other firms to diversify their boards following GF.

Figure A4 and Table A3 document the racial composition of employees in our sample. To avoid outsized impact of individual employees, we limit our sample to startups with at least 10 employees in 2019.¹⁶ 4% of startup employees are Black and 6% are Hispanic.

We estimate the impact of employees in Table 5. Panel A shows results for insider directors, Panel B for outsider directors, and Panel C for investor directors. We make one change to the dependent variables in this table: we omit “Asian” and instead include the proportion of B&H directors on the board as the dependent variable in Column (3). The reason for this is the lack of an effect for Asian directors in previous analyses.

The point estimates in Column (1) indicate that, for a one standard deviation increase in the fraction of Black employees, the racial diversity of inside directors and outside directors increases by 0.15 percentage points and 0.24 percentage points, respectively. These magnitudes are economically meaningful, as they imply increases of 12% and 16% relative to the unconditional means of 1.27% and 1.48%. Consistent with the overall response to GF in Table 4, we do not find an effect for investor directors.

[INSERT TABLE 5 ABOUT HERE.]

In addition to having a stronger response to GF, Table A9 shows that firms with more diverse boards typically have more diverse employees. The relationship between board and employee diversity is not obvious ex ante. While diverse boards might reduce pressure for workforce diversity through tokenism, our evidence suggests these dimensions of diversity are mutually reinforcing.

D.1.2 Racial Diversity of the Investment Firm

We next explore how racial diversity among the decision-makers at the investment firms funding a startup relates to the startup’s board diversity and its response to GF. To maintain consistency with the sample used to study employee pressure, we restrict our analysis to 2018-2022, the period for which we have data on startup employees’ racial diversity.

¹⁶ See section II.C for details on matching the startups in PitchBook to CoreSignal, where we identify the employees.

Prior research shows that diverse partners are more likely to fund diverse entrepreneurs (Cook et al., 2022; Cassel et al., 2022). We expect startups that receive funding from investment firms with diverse partners to have more diverse groups of inside directors. It is also possible that diverse partners and entrepreneurs are more likely to recruit new directors from underrepresented groups in their network, leading to a multiplier effect.

As our proxy for the investment firms’ racial diversity, we use the list of private capital groups owned by Blacks and Hispanics (B&H) from Cassel et al. (2022) to calculate the fraction of diverse investors in the startup, $F(\text{Minority VCs})$. Table A10 confirms that startups invested in by B&H VCs are associated with higher levels of race and gender diversity in all director categories.

Next, we test whether startups funded by investment firms with racially diverse partners pre-GF respond more strongly to the GF movement. The dynamic is unclear ex ante. On the one hand, having networks of racially diverse investors might allow these startups to respond more strongly, especially if they are particularly interested in providing opportunities for underrepresented groups. On the other hand, if these startups already have diverse boards, they might not feel pressured to increase it further.

We use the fraction of B&H VCs invested in the startup pre-GF to define *Treated* in equation (2) and test whether startups with B&H partners are more likely to increase board diversity post-GF. We present the results in Table A11, with Panel A focusing on insider directors, Panel B on outsider directors, and Panel C on investor directors.

We find no evidence that startups backed by B&H VCs are any more or less likely than other startups to appoint Black and Female directors post-GF. Thus, while startups with B&H VCs have more diverse boards, the increase in Black and Female representation following GF does not appear to represent in-group sympathy from Black and Hispanic investors.

D.2. External Factors

We begin our analysis of external factors by examining startups exposed to capital markets, interactions with investors could be a channel through which startups experience public pressure. We then test whether startups’ location and industry influence their responses to GF. Given the implementation of regulatory initiatives to promote board diversity in public firms, it is important to determine to what extent our results reflect startups anticipating having to comply with such regulation. We therefore look at whether California-based startups drive our results. Finally, we explore variation across industries to determine whether consumer pressure is an important factor.

D.2.1 Board Diversity and Capital Markets

Startups must periodically raise capital to continue growing. Our goal is to determine whether the startups that had to raise capital post-GF were more likely to respond to

GF by increasing the racial and gender diversity of their boards. While we could examine actual fundraising outcomes, this approach suffers from selection bias since the decision to raise capital could reflect unobserved firm characteristics that are correlated with demand for board diversity. We therefore construct pre-determined measures of startups' exposure to both public and private capital markets.

For private capital markets, we leverage the fact that startups typically raise a new funding round every 18 to 24 months and that director appointments usually occur following these funding rounds (Ewens and Malenko, 2022). In Figure A5, we document little variation in time between funding rounds across industries. We assume that the timing of a startup's most recent pre-GF funding round is independent of GF. Thus, using data on a startup's last pre-GF funding round, we can predict whether it would have needed to fundraise post-GF.

To implement this intuition, we create an indicator, *Predicted Fundraising*, that equals one for startups likely to fundraise post-GF. For each startup that raised a round of funding pre-GF, we calculate the average time between funding rounds for other startups that had closed a funding round at the same deal stage and industry, and which raised a subsequent funding round within the most recent five years.¹⁷ 36% of startups that raised a round of funding pre-GF are predicted to fundraise post-GF.

To assess pressure from public capital markets, we focus on startups likely to pursue an IPO. We identify these firms using pre-GF funding levels, since highly-funded startups often become too large for acquisition exits, leaving public markets as their primary option. We define an indicator, *Raised a lot*, equal to one for startups in the top decile of pre-GF funding within their industry.

Our first identifying assumption is that these measures predict which startups will raise post-GF funding in private markets and which will go public. In Table A12, we validate these assumptions by regressing whether a startup actually raised funding (Columns (1) to (3)) or went public post-GF (Columns (4) to (6)) on our measures of exposure to private and public capital markets. The first three columns show that startups we predict would raise funding in private markets post-GF (*Predicted Fundraising*) are indeed more likely to do so. The estimate in the most restrictive specification, Column (3), implies that startups predicted to fundraise post-GF are 20% more likely to do so than the average startup ($=0.044/0.2160$). The last three columns validate the assumption for public capital markets by showing that startups that raised a lot of funding are indeed more likely to go public post-GF. The estimate in Column (6) implies a 566% higher likelihood of an IPO post-GF for startups in the top decile of pre-GF fundraising, relative

¹⁷ For example, consider a startup in Healthcare that raises a Series A round in January 2020. We generate a prediction of the time to next fundraising by considering the time between the Series A and Series B rounds for Healthcare-focused startups that raised their Series B between January 2015 and December 2019.

to the average startup ($=0.034/0.006$).

Our second identifying assumption is that, absent GF, trends in Black and Female director representation would have been similar between startups predicted to raise funding post-GF (either through private markets or IPOs) and those not predicted to raise funding. Figure 2 supports this parallel trend assumption.

With our first stage in hand, we estimate equation (2) separately for startups predicted to raise private funding (Panel A of Table 6) and those predicted to pursue IPOs (Panel B).

Capital market pressure strongly affects board diversity post-GF, particularly for IPO-bound startups. Panel A shows that startups predicted to raise private funding increase their Black director fraction by 0.12 percentage points more than other startups (10% of the unconditional average) and their Female director fraction by 0.33 percentage points (3% of the average).

The effect is even larger for startups approaching public markets. Panel B shows these firms increase their Black director fraction by 0.66 percentage points (55% of the average), Hispanic director fraction by 0.11 percentage points (7%), and Female director fraction by 2.76 percentage points (27%). The significant effects for Hispanic and Female directors, despite weaker GF pressure for these groups, suggest that binding supply constraints for Black directors may have led some firms to appoint directors from other underrepresented groups.

[INSERT TABLE 6 ABOUT HERE.]

These findings underscore the significant influence of capital markets on board diversity following GF. The larger response among Black directors aligns with our earlier evidence that GF primarily increased demand for Black representation. Investment banks provide one channel for this market pressure: Goldman Sachs, a leading IPO underwriter, began requiring U.S. and European IPO clients to have at least one diverse board member in 2020, increasing to two members (including one woman) in 2021.¹⁸

D.2.2 Board Diversity and Geography

The post-GF increase in board diversity could reflect startups responding to public firm regulations, particularly in California. California’s SB 826 (2018) mandated public firms to include female directors, while AB 979 (2020) required directors from underrepresented communities. Since 29% of our sample of startups are headquartered in California, these requirements might drive our results by affecting IPO-bound firms.

Panel C of Table 6 shows that California-based startups responded differently to GF than other startups. Black directors experienced a 0.07 percentage points *smaller*

¹⁸ This initiative is discussed [here](#).

increase in California relative to other states, while Hispanics increased by 0.1 percentage points more and Female increased by 0.5 percentage points more—almost doubling the baseline estimate from Table 2. These patterns match Bogan et al. (2024)’s findings for California public firms, suggesting that state-level diversity mandates influenced director appointments. While these mandates cannot explain our earlier finding that IPO-bound firms increased Black director appointments, the strong response among Hispanic and Female directors shows that private firms anticipate and respond to diversity regulations even before going public.

D.2.3 Board Diversity and Industry

To test whether customer pressure drives board diversity, we examine business-to-consumer (B2C) startups, which comprise 17% of our sample. While B2C industries show the highest fraction of Black and Hispanic directors (Figure A6), Panel D of Table 6 shows no differential response to GF among B2C firms. This contrasts with Balakrishnan et al. (2023)’s findings for public firms and reinforces our earlier evidence that capital market pressure, not consumer pressure, drives startup board diversity post-GF.

E. Did Board Diversity Impact Startup Outcomes?

Board diversity might impact startup outcomes. For example, if firms previously discriminated against diverse directors, only exceptional individuals would secure board seats and we would expect more diverse firms to perform better. Alternatively, in the absence of discrimination, external pressure might lead firms to lower qualification standards to meet public demand, which could harm startup performance. We test these competing hypotheses by examining differential responses and outcomes among startups following GF. Our analysis focuses on three key questions: whether firms without Black directors faced greater pressure to diversify, whether diverse boards had better fundraising outcomes, and whether board diversity affected overall startup performance. We examine these questions using the subset of startups that raised funding pre-GF.

Since systematic differences in startup quality or risk could mask the effects of board diversity, we match startups with pre-GF Black directors to similar firms without Black directors. We require exact matches on founding year, first fundraising year, industry, and state. We then select the three closest matches based on pre-2019 funding raised. Table A13 confirms balance across observables except board diversity, validating our matching approach.

We examine outcomes in Table 7 using an indicator $I(\text{Black Directors} > 0)$ for startups with any Black director. Because Black director status rarely changes after GF, differences in outcomes are largely captured by pre-GF status and its interaction with the post-GF indicator.

[INSERT TABLE 7 ABOUT HERE.]

Panel A of Table 7 shows that the gap in Black director representation between firms with and without pre-GF Black directors narrowed by 5.9% post-GF. Other diversity metrics show little change, except a marginally significant widening gap for Hispanic directors.

Panel B examines fundraising outcomes. Startups without Black directors were 8.3 percentage points less likely to raise funding post-GF, a large effect given the 31.6% baseline fundraising likelihood. However, conditional on raising funds, round sizes show no significant post-GF differences, though firms with Black directors raised smaller rounds pre-GF.¹⁹ These results suggest that Black director representation primarily affected firms’ ability to close rounds rather than round size.

Finally, in Panel C we examine whether startup performance is related to board diversity. We acknowledge that it is difficult to identify a causal effect of board diversity on performance, especially since performance is observed infrequently among startups, and the final outcome may not be observed or known for many years.²⁰ We find no evidence that board diversity affects startup performance either before or after GF, consistent with Balogh and Yonker (2024) and Eckbo et al. (2022)’s findings for public firms. This lack of performance effects aligns with Gompers et al. (2020)’s survey showing VCs rank boards among the least important factors for startup success.

Given the short post-GF window for observing performance effects, the lack of performance differences could reflect either no discrimination or insufficient time for effects to emerge. To distinguish these explanations, we examine a more immediate measure: whether pressure to rapidly diversify boards led firms to compromise on director qualifications.

F. Did Increased Board Diversity Lead to Talent Misallocation?

The surge in demand for diverse directors following GF allows us to test a key prediction of the supply constraints hypothesis. If qualified candidates were scarce, firms facing pressure to diversify quickly might have had to lower their qualification standards. We therefore compare the qualifications of diverse directors appointed before and after GF, both relative to their pre-GF counterparts and to other directors appointed in the same period.

¹⁹ While statistically insignificant, the point estimates suggest no disadvantage for startups that appointed their first Black director post-GF (Column 2) or for startups with Black directors post-GF (Column 4).

²⁰ To provide more coverage, we include startups without exits in Columns (1) and (2), using the most recent round valuation as an “exit value.”

F.1. Qualifications of All Minority and Non-Minority Directors

To assess the directors’ qualifications, we rely on resume data from LinkedIn profiles. We follow [Bertrand et al. \(2019\)](#) and [Ahern and Dittmar \(2012\)](#) by focusing on observable director characteristics such as age, work experience, and education. To avoid look-ahead bias, we only consider information on the director’s LinkedIn profile as of the year preceding their appointment to a startup’s board. The unit of observation is a director appointment; thus, a director who serves on multiple boards may appear in the data multiple times. The sample comprises 25,942 directors appointed to boards between 2013 and 2021.

We test whether director qualifications have changed by running the following director-level regression:

$$\text{Characteristic}_{it} = \beta_0 + \delta_i \times I(\text{Minority Director})_i + \epsilon_{it}, \quad (3)$$

where $\text{Characteristic}_{it}$ is a personal characteristics (e.g., age, education, professional experience) of director i appointed at time t . $I(\text{Minority Director})_i$ is an indicator for Black or Hispanic directors.

We separately estimate equation (3) for the pre- and post-GF periods, where post-GF encompasses all appointments in 2020 and 2021. Since we estimate each characteristic separately, we standardize all variables to have a mean of zero and a standard deviation of one to easily compare relative effects across the different covariates.

Panel A of Figure 5 presents our results for the pre-GF period. This figure plots the estimated effects of the likelihood that a Black or Hispanic director has various job and educational characteristics. The black and grey dots represent the estimated coefficients, with horizontal lines indicating the 95% confidence intervals.

[INSERT FIGURE 5 ABOUT HERE.]

From the figure, we see that before GF, Black and Hispanic directors are more likely to have attended an Ivy League school (*Attended Top School*), have worked at other startups (*Former Startups*), have a computer science or engineering degree (CS/Engineering Degree), have an advanced degree (*Master’s Degree*), have been a startup founder (*Is Founder*), and have more total degrees (*Total Degrees*). Black and Hispanic directors tend to have fewer years of work experience, likely because they are younger.²¹

²¹ For the subsample of directors for whom we have the undergraduate graduation year, we proxy for age by using the number of years from graduation to the director appointment. This measure suggests that Black and Hispanic directors are three years younger than non-Black, non-Hispanic directors at the time of their appointment. Panel A of Figure 5 shows that Black and Hispanic directors have a 0.07 lower standard deviation in work experience pre-GF. Given that a standard deviation of work experience pre-GF is about 9.65 years, this difference implies that Black and Hispanic directors have

Panel B reveals two key patterns post-GF: while Black and Hispanic directors’ qualifications declined relative to their pre-GF counterparts, they matched those of other directors appointed in the same period. This suggests that GF eliminated an artificially high qualification threshold for underrepresented directors, rather than leading to low-quality appointments. [Balakrishnan et al. \(2023\)](#) document similar patterns for public firms.

G. What Drives the Board Diversity Gap in Startups Relative to Public Firms?

In Section [IV.A](#), we documented a growing board diversity gap between public and private firms post-GF. We now examine whether this gap reflects institutional differences in regulation, board size, or geographic location. To avoid confounding from differences in director tenure between public and private firms ([Table A4](#)), we analyze new director appointments rather than board composition.²²

We present our results for the differences in public-startup response to GF in [Table 8](#). Panel A focuses on Black directors, Panel B on Hispanic directors, Panel C on Asian directors, and Panel D on Female directors. To interpret the magnitudes of how much the post-GF gap widened, we provide the pre-GF public-private gap in appointments for each panel, which is positive for all director types except Asians.

[INSERT [TABLE 8](#) ABOUT HERE.]

Column (1) of Panel A shows that the diversity gap for Black directors is almost four times larger post-GF relative to the pre-period. To control for the part of the gap that might be explained by differing headquarter locations of public firms and startups, Column (2) adds an interaction of the post-GF dummy with state fixed effects. This has a negligible effect on the estimated gap.

We next test the impact of regulations affecting public firms. We add an interaction term for public firms listed on Nasdaq in Column (3), and for firms headquartered in California in Column (4). While both Nasdaq and California mandated board diversity, the results show that accounting for these factors in fact widens the public-firm startup gap in Black director appointments post-GF, suggesting that regulation does not explain the widening gap.

In Column (5) we include an interaction of the log of board size with the post-GF dummy, as the descriptive evidence in [Table A6](#) shows that larger boards are more likely to appoint Black directors, and public firms have larger boards on average. We find that controlling for board size reduces the post-GF increase in the public-private gap from

less than one year less work experience at the time they are appointed. Thus, all the difference in work experience can be explained by the three-year difference in age.

²² We only use firm-years with new director appointments.

12.3 to 10.9 percentage points. Finally, we include all of these controls in Column (6) and find a slight increase in the public-private gap relative to the baseline estimation.

While Panels B through D of Table 8 suggest a baseline increase in the diversity gap for Hispanic and Female directors (and a decrease for Asians), these results are not robust to the various controls. In fact, when we control for all factors in the final specification, the estimates suggest that the gap increases for Female directors while there is no significant difference among Hispanic and Asian directors.

Overall, our evidence shows that the widening gap in Black director appointments between public and private firms cannot be explained by regulation, geography, or board size differences. By contrast, these factors can explain variations for other racial groups and female directors. This supports our core finding that GF primarily increased demand for Black directors, with public firms facing stronger public pressure to respond.

G.1. Did Public Firms Poach Black Directors from Startups?

To the extent that startups and public firms compete for the same talent, it is possible that the widening diversity gap among Black directors reflects a greater ability of public firms to attract directors from a limited pool of qualified candidates. Indeed, one might be concerned that public firms, facing pressure to diversify their boards post-GF, may have poached Black directors from startups, leading to the widening public-startup gap. We leverage our data coverage of both public firms and startups to explore this hypothesis by tracking individual directors across public and startup boards.

As a first pass, we document the prior roles of newly appointed directors in Table 9. We present data for director appointments during the post-GF period (2020 and 2021) and contrast it with appointments in the pre-GF period (2018 and 2019). For each director appointment, we track whether that director held any board position prior to the appointment. We classify directors as either having no prior director role, a director role on only a startup board, only a public board, or a combination of public and startup boards. If public firms were poaching Black directors from startups post-GF, we would expect an increase in the fraction of directors appointed to public boards who previously held startup board seats.

[INSERT TABLE 9 ABOUT HERE.]

By contrast, Panels A and B document that the fraction of newly appointed Black directors who previously held a seat on a startup board *decreased* from 27.8% ($= 0.085 + 0.193$) in the pre-GF period to 20.8% ($= 0.042 + 0.166$) in the post-GF period. Among newly appointed Black directors in startups, the fraction who previously held a public board seat *increased* from 10.4% in the pre-GF period to 15.3% in the post-GF period. Another striking feature of the data is that the fraction of newly appointed Black directors without a prior board seat increased among public firms from 56.6% in the pre-GF period

to 70.1% in the post-GF period. In contrast, in startups the percentage of Black directors without previous board roles decreased from 76.4% in the pre-GF period to 74.3% in the post-GF period.

The fact that Black directors appointed to public and startup boards post-GF worked on other public firm boards suggests that these directors likely became busier post-GF. In Figure A7, we plot the average number of concurrent board seats held by a director at the time of their appointment. We plot this for directors appointed to public firms in subfigure (a), and startup directors in subfigure (c). For public firm directors, we further document the number of concurrent director positions held in startups in subfigure (b). For startups, we present the number of concurrent director seats held on public boards in subfigure (d). The main takeaway is an overall increase in director busyness—the total number of board seats held—among newly appointed Black and Hispanic directors post-GF.

While we do not find evidence suggesting that public firms increased their appointment of directors previously at startups, it is possible that there was an increase in departure from startup boards. Specifically, if there is competition for diverse directors and they have limited capacity, then directors appointed to public boards may be more likely to depart startup boards before joining public boards post-GF.

In Table A14, we document the average number of board seats vacated, as a function of whether the director was appointed to a public board or a startup board. We separately track whether the director vacated a public board seat or a startup board seat. While there is some evidence that Black directors were more likely to leave startup boards and join public boards post-GF, the average director only departs 0.005 startup boards, meaning it is unlikely to explain much of the public-startup board diversity gap. If anything, the largest increase in departures for newly appointed Black directors in public firms is departures from board seats at other public firms.

Overall, our evidence rejects the hypothesis that public firms poached diverse directors from startups post-GF. Instead, public firms expanded their candidate pool by appointing more first-time directors, while diverse directors became busier across the board. This pattern suggests that startups could have similarly overcome supply constraints by considering a broader set of candidates. The persistence of supply constraints in the startup sector thus reflects differences in director selection practices rather than competition with public firms.

G.2. Post-IPO Board Diversity

Given the low levels of board diversity we observe in startups, we close by testing the hypothesis that board diversity in a firm’s private phase has implications for its board diversity after going public. Figure 6 documents evidence of persistence in board diversity. We split firms by whether they have at least one Black or Hispanic (minority) director

on the board prior to the IPO, and plot the fraction of minority directors in the first five years following the IPO. The figure documents a remarkable persistence in board diversity, with little evidence of convergence between the two groups.

[INSERT FIGURE 6 ABOUT HERE.]

Furthermore, we show in Appendix Table A15 that formerly VC-backed companies have fewer Black directors than other public firms, but more Asian directors. The notion that VC backing would have a negative effect on board diversity is plausible, given the low levels of board diversity in startups’ private phase and the existing evidence of the VCs’ enduring influence on firms after they go public (Hochberg, 2012; Celikyurt et al., 2014; Iliev and Lowry, 2020).

Thus, a lack of racial diversity in the board during a firm’s private phase appears to have lasting effects on its board diversity as a public firm. This underscores the importance of understanding the limitations for board diversity among startups, especially given the growing number of public firms that were previously VC-backed (Gornall and Strebulaev, 2021).

V. Conclusion

This paper sheds light on the state of board diversity in startups. We assemble the first dataset containing racial information on startup directors, documenting how racial and gender diversity on startup boards differ across firms and evolve over time. Following the George Floyd (GF) movement, both public and startup firms increased board diversity, though public firms’ stronger response widened the existing gap. Our evidence shows this gap reflects differences in how firms responded to pressure rather than competition for talent; public firms expanded the pool by appointing first-time directors, while startups did not.

Our findings point to supply constraints and institutional barriers as key drivers of startup board diversity. The response to GF was strongest in areas with larger pools of potential Black directors, suggesting that limited access to qualified candidates, rather than merely low demand, constrains board diversity. This constraint appears particularly binding for investor directors, where the pipeline challenge starts with the low diversity of venture capital firms themselves. Yet our evidence that public firms successfully recruited qualified first-time directors suggests that the potential pool could be expanded.

Although the governance structures in private firms increasingly align with those of public firms (Lowry, 2022), our study suggests that startups are less responsive to societal calls for increased representation, and that public pressure is primarily channeled through interactions with capital markets. This has important implications for diversity initiatives that focus solely on public firms. Such policies may be less effective than

expected if private firms, which employ two-thirds of workers and constitute the pipeline of future public firms, remain unresponsive. Our finding that board diversity patterns persist through the private-to-public transition underscores this concern and highlights the importance of understanding barriers to diversity in private firms.

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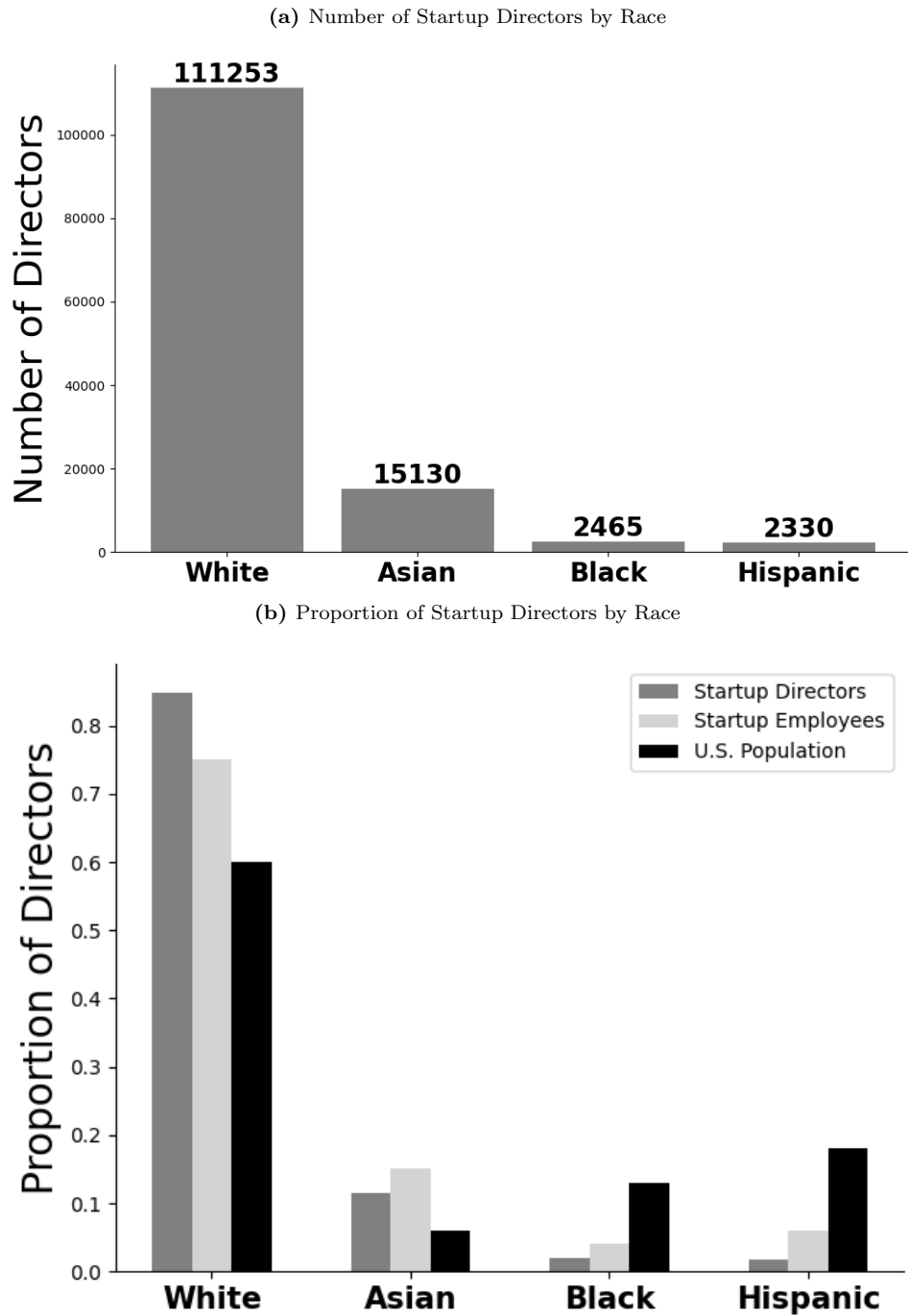
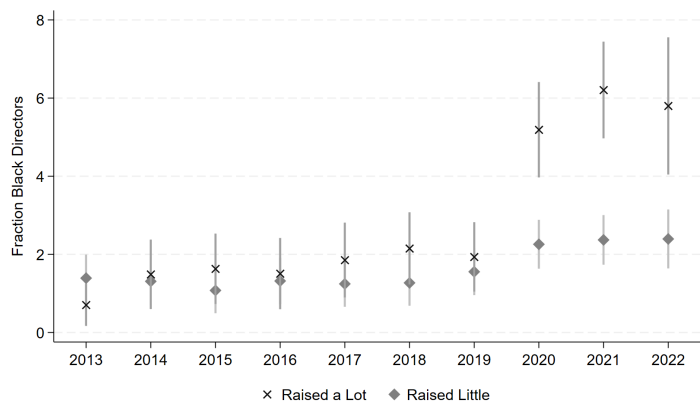
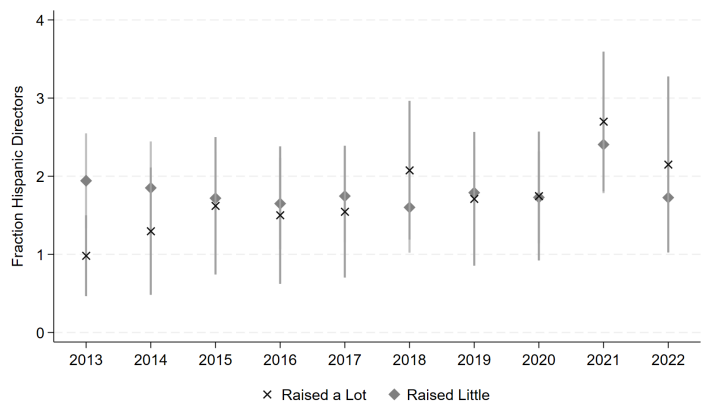


Figure 1: Startup Board Directors by Race

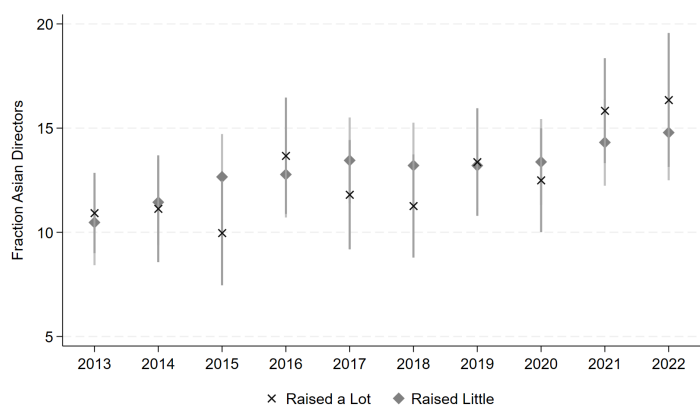
This figure plots the prevalence of directors on startup boards by race. Panel A documents the number of directors of each race in our sample, while Panel B shows the proportion of startup directors (in light grey). The darker bars in Panel B represent the proportion of each race in the population according to the 2020 U.S. Census. The light gray bar represents the proportion of each race that are startup employees according to our data.



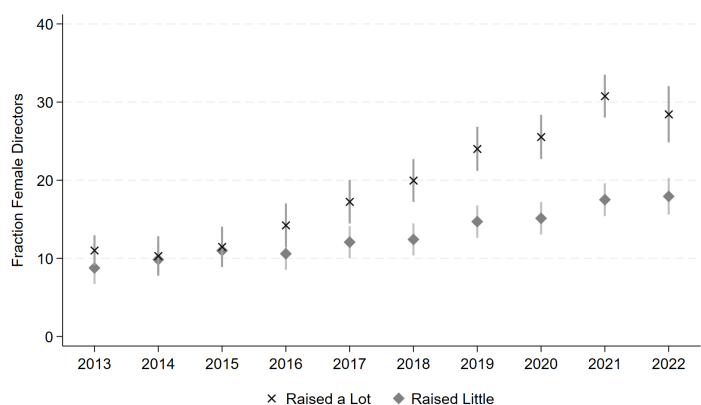
(a) Black Directors



(b) Hispanic Directors



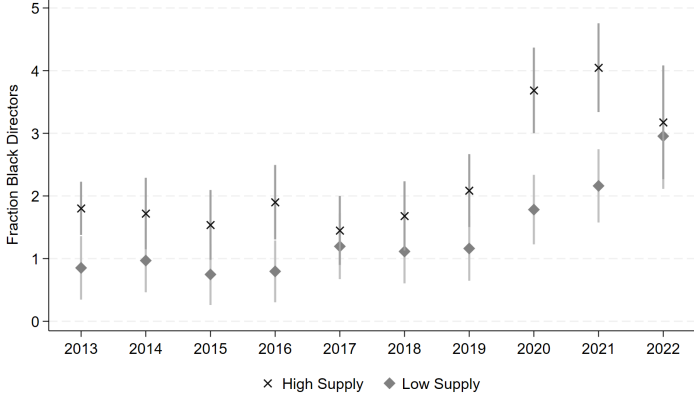
(c) Asian Directors



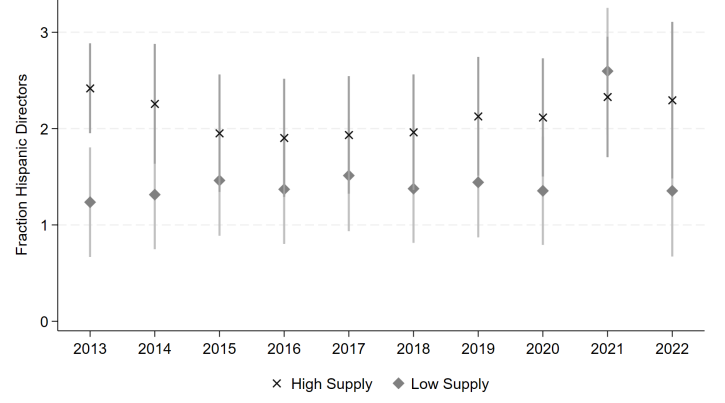
(d) Female Directors

Figure 2: Board Diversity in Appointments – Closeness to IPO

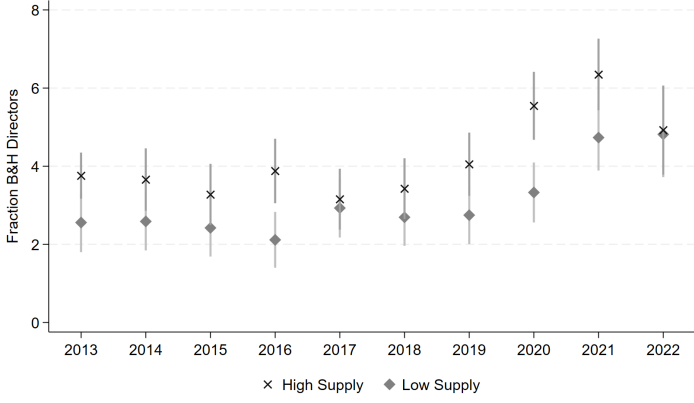
This figure shows board diversity in startup director appointments from 2013 to 2022, split by whether the startup is in the top decile of capital raised as of 2019. The subfigures display the average fraction of appointed board members who are (a) Black, (b) Hispanic, (c) Asian, and (d) Female. Averages are calculated across firms and only consider directors whose race or gender is known. The lines around the dots represent 95% confidence intervals, estimated from OLS regressions that interact an indicator for whether a company is publicly traded or privately held with year indicators. Each regression has 76,951 observations. We cluster standard errors by the firm.



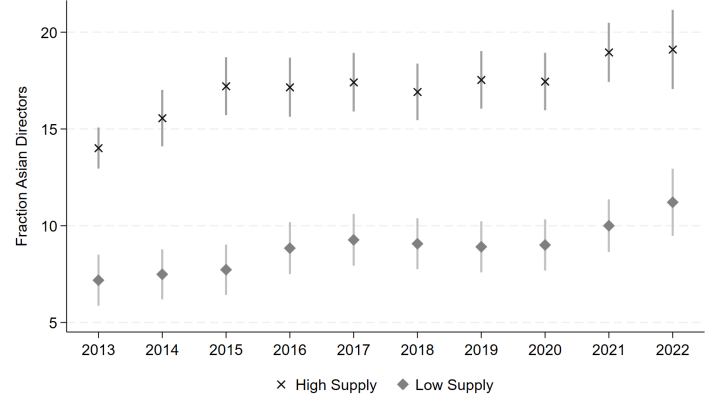
(a) Black Directors



(b) Hispanic Directors



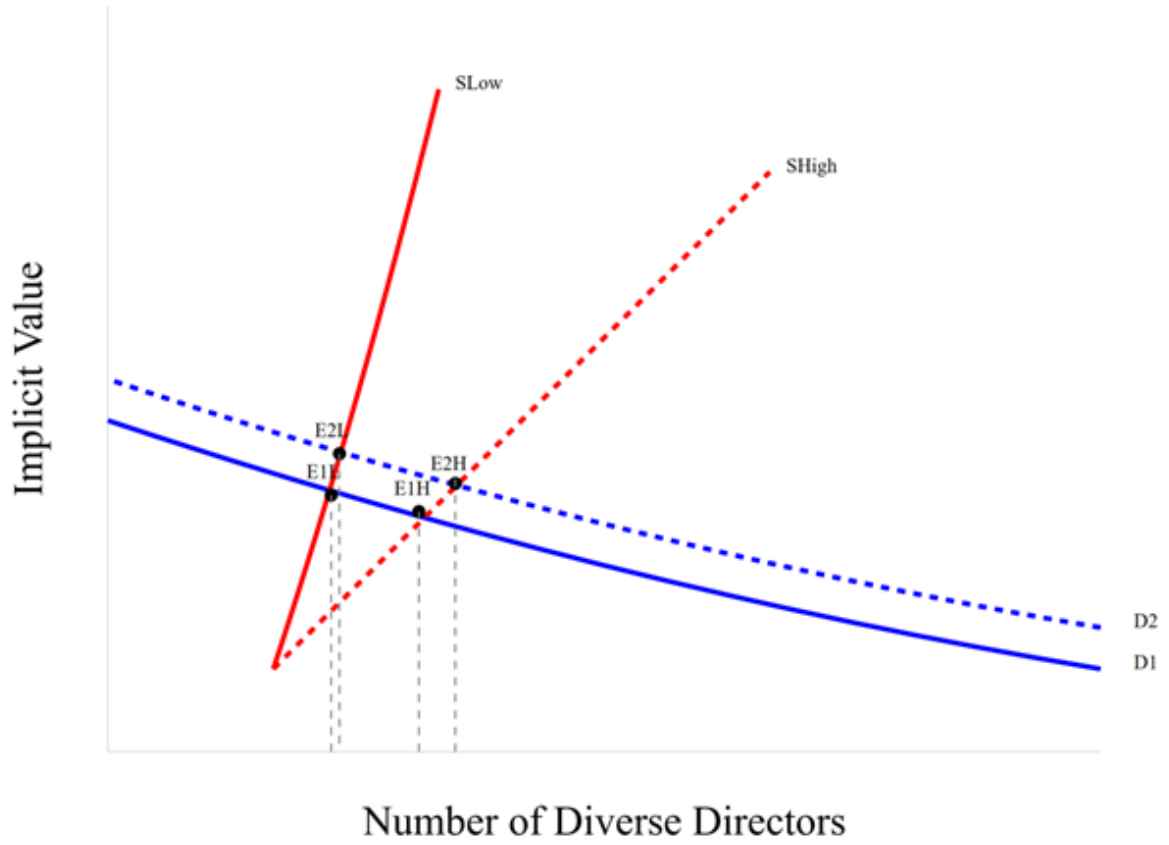
(c) Black & Hispanic Directors



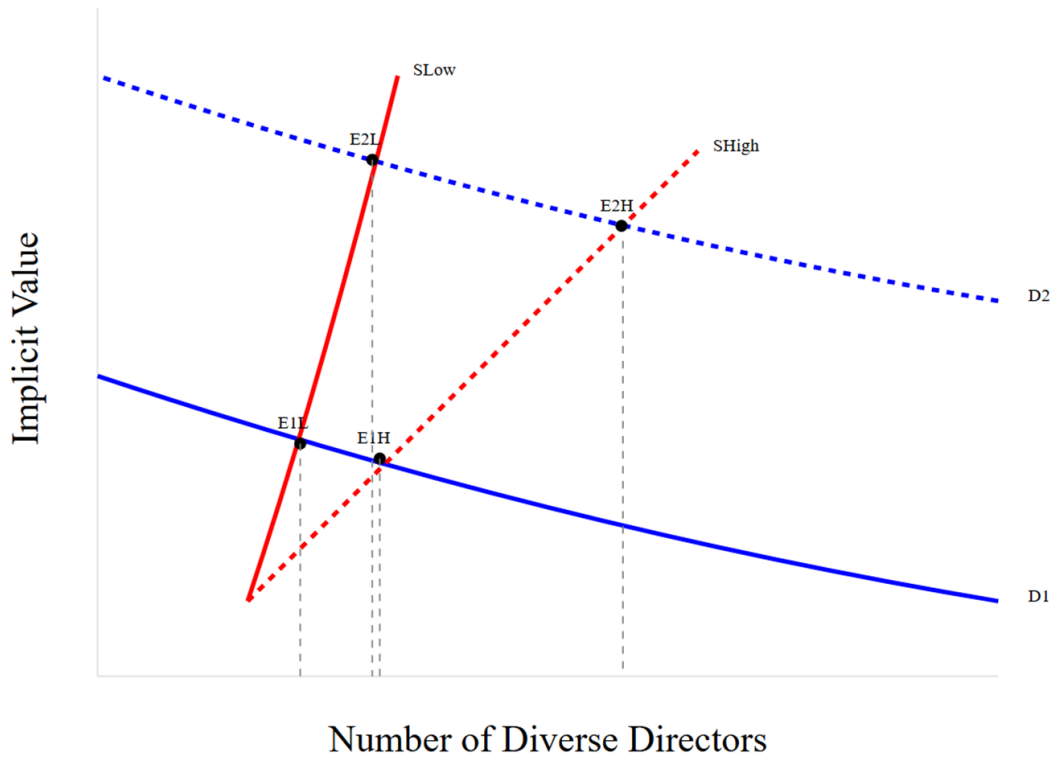
(d) Asian Directors

Figure 3: Board Diversity in Appointments – High vs. Low Supply

This figure shows board diversity in startup director appointments from 2013 to 2022, split by whether the startup operates in an industry-state with high supply of diverse director candidates, defined as the startup operating in an industry-state where the fraction of startup employees as of 2019 is above the median in the sample. The subfigures display the average fraction of board members who are (a) Black, (b) Hispanic, (c) Black or Hispanic, and (d) Asian. Employee diversity is defined analogously in each subfigure. Averages are calculated across firms and only consider directors whose race is known. The lines around the dots represent 95% confidence intervals, estimated from OLS regressions that interact an indicator for whether a company is publicly traded or privately held with year indicators. Each regression has 76,936 observations. We cluster standard errors by the firm.



(a) Low Demand Scenario



(b) Supply Constraints Scenario

Figure 4: Illustrating Supply Constraints on Diverse Director Appointments

This figure illustrates two scenarios related to the supply constraints of diverse director appointments. In each panel, the solid and dashed lines represent demand and supply curves: $D1$ denotes the demand curve before George Floyd, while $D2$ shows the increased demand post-George Floyd. S_{Low} represents the supply curve in areas with a low supply of diverse directors, while S_{High} reflects the supply in areas with a higher availability. *Implicit Value* reflects the broader “price” of adding a diverse director.

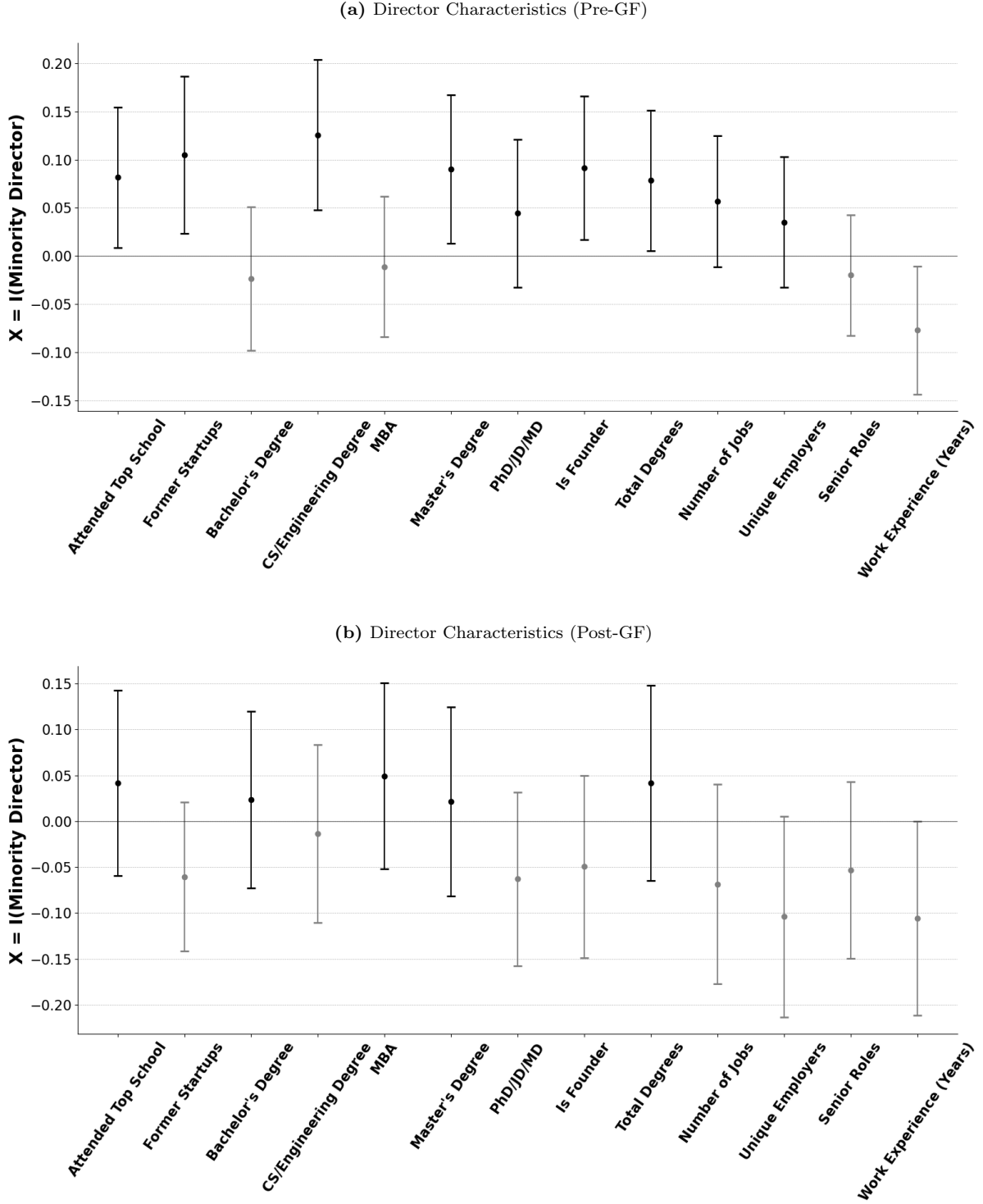


Figure 5: Director Characteristics by Race Pre- and Post-GF

This figure plots the estimated effects of a regression of various job and education characteristics on an indicator for whether a director is Black or Hispanic (*Minority Director*). Panel A covers director appointments from 2013 to 2019, while Panel B includes appointments in 2020 and 2021. The dots represent the estimated coefficients, with the lines around the dots indicating 95% confidence intervals. We estimate the following regression specification for each director characteristic X : $X_{d,t,f} = \beta_i + \delta_i \times I(B\&H)_{d,f} + \epsilon_{d,t,f}$, where d stands for a director appointed to firm f at time t . We standardize all characteristics to have a mean of zero and a standard deviation of one to facilitate the comparison of relative effects across rows.

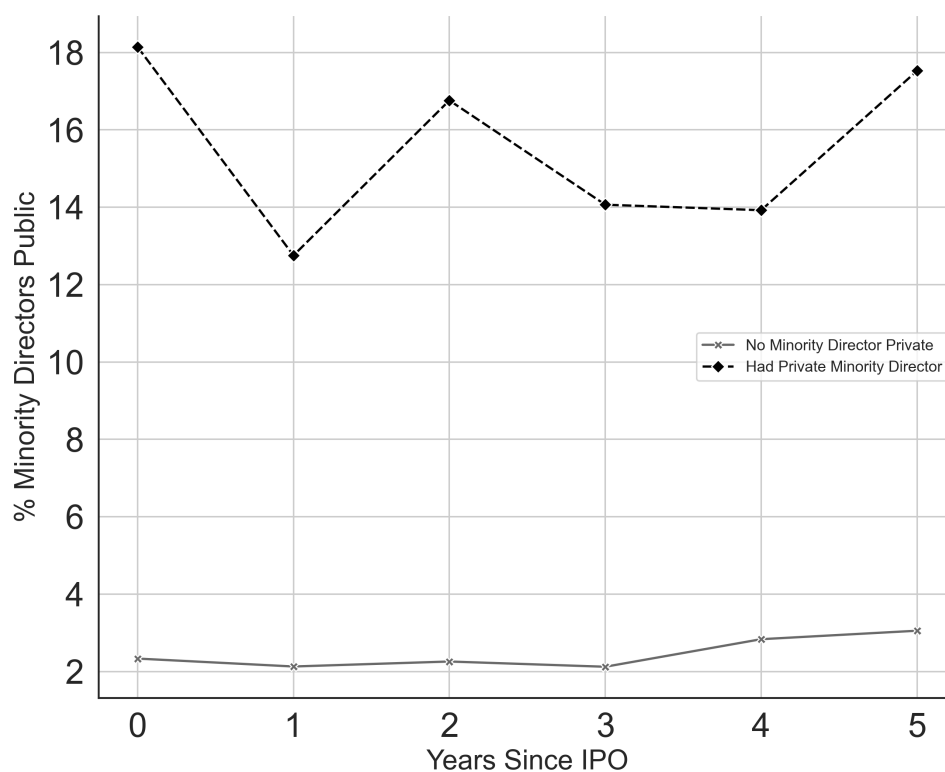


Figure 6: Association between Pre- and Post-IPO Board Diversity

This figure shows the average percentage of Black and Hispanic (*minority*) directors appointed to the board of a company in the five years following its initial public offering (IPO). The data is split by whether the company had at least one Black or Hispanic director in the year before the IPO (*Had Private Minority Director*). This figure is based on 711 companies. We source pre-IPO board diversity data from our startup sample and post-IPO board diversity data from ISS.

Table 1: Board Diversity – Descriptive Statistics

This table presents the fraction of newly appointed board members who are Black, Hispanic, Asian, or Female. Panel A presents this for startups, while Panel B focuses on publicly traded firms. We include all firm-years in which at least one new director is appointed to the board of directors. The table presents the average number of directors joining the board, the fraction of these directors with data on race, and, among firms with at least one director appointment with race or gender, the fraction of directors that are Black, Hispanic, Asian, or Female. Race data comes from ISS for public firms and from our own classification for startups. See Appendix C and A for details on how we identify each director’s race. The results are presented for four-year time windows, with the exception of the 2020 to 2021 cluster, which is the post–George Floyd period.

Panel A: Private Firms

Year Bin:	2000 - 2003	2004 - 2007	2008 - 2011	2012 - 2015	2016 - 2019	2020 - 2021
# Directors Joining	1.40	1.64	1.75	1.81	1.74	1.76
with Race	81.6%	81.9%	81.6%	81.2%	80.9%	77.9%
Firm-Years	5,689	12,161	22,052	38,746	41,272	19,737
Among firm-years with at least one director with race						
Fraction Female	7.3%	7.4%	8.0%	9.8%	13.4%	18.3%
Fraction Black	0.9%	0.9%	1.0%	1.2%	1.4%	2.9%
Fraction Hispanic	0.7%	1.1%	1.4%	1.7%	1.7%	2.1%
Fraction Asian	8.2%	8.5%	9.0%	11.1%	13.1%	13.9%
Firm-Years	4,785	9,853	17,273	30,037	33,511	16,656

Panel B: Public Firms

Year Bin:	2000 - 2003	2004 - 2007	2008 - 2011	2012 - 2015	2016 - 2019	2020 - 2021
# Directors Joining	1.62	1.62	1.64	1.61	1.64	1.61
with Race Information	14.9%	15.5%	21.1%	52.0%	72.0%	79.5%
Firm-Years	2,653	7,753	6,808	6,671	6,996	2,841
Among firm-years with at least one director with race						
Fraction Female	21.0%	20.0%	18.1%	22.1%	33.5%	45.2%
Fraction Black	10.9%	6.7%	4.5%	4.5%	6.4%	19.8%
Fraction Hispanic	3.3%	2.1%	2.8%	2.6%	2.6%	4.2%
Fraction Asian	3.1%	3.1%	4.6%	3.6%	5.2%	8.0%
Firm-Years	572	1,746	1,988	4,189	5,652	2,440

Table 2: Board Diversity in Startups

This table presents coefficients from OLS regressions of board diversity in startups, with standard errors reported in parentheses. The unit of observation is a firm-year between 2013 and 2022. The dependent variable is the fraction of board members who are Black, Hispanic, Asian, or Female, with fractions calculated only among directors whose race or gender is known. The key independent variable is *Post-GF*, an indicator that equals one for the period 2020-2022 and zero for earlier years. All models control for $\ln(\text{Board Size})$, which is the log of the number of directors on the board. Panel A includes *State FE*, an indicator for the state where the firm is headquartered, while Panel B includes *Firm FE*. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors by the firm.

Panel A	Black	Hispanic	Asian	Female
Post-GF	0.355*** (0.035)	0.131*** (0.037)	1.424*** (0.087)	1.813*** (0.085)
Observations	395,291	395,291	395,291	395,291
Adjusted R^2	0.004	0.006	0.032	0.006
State FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.38%	1.63%	11.14%	10.27%

Panel B	Black	Hispanic	Asian	Female
Post-GF	0.105*** (0.016)	-0.015 (0.018)	0.035 (0.044)	0.537*** (0.046)
Observations	392,204	392,204	392,204	392,204
Adjusted R^2	0.935	0.928	0.938	0.923
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.37%	1.63%	11.15%	10.27%

Table 3: How Is Director Supply Related to Board Diversity?

This table presents coefficients from OLS regressions of board diversity at startups, with standard errors reported in parentheses. The unit of observation is a firm-year between 2013 and 2022. The dependent variable is the fraction of diverse board members. Panel A focuses on Black directors, Panel B on Hispanic directors, and Panel C on Asian directors. The key independent variables are measures for the supply of potential startup directors. We construct this measure from the racial composition of startup employees, excluding directors in our sample. Column (1) provides the baseline estimate for Post-GF. Column (2) of Panel A adds an interaction with the *Black Supply in State (2019)*, which is the fraction of Black startup employees in 2019 in the state where the firm is headquartered. Column (3) replaces this measure with the *Black Supply in Industry (2019)*, which is the fraction of Black startup employees in 2019 in the industry the firm operates in. Column (4) uses *Black Supply in Industry-State (2019)*, which is the fraction of Black startup employees in the industry-state. We define supply analogously for Hispanics and Asians in Panels B and C. These variables are standardized to have a mean of zero and a standard deviation of one. All models include controls for the log of VC funding raised until that year, the log of board size, and firm fixed effects. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Black Directors	(1)	(2)	(3)	(4)
Post-GF	0.139*** (0.020)			
Black Supply in State (2019) $\times$ Post-GF		0.044* (0.025)		
Black Supply in Industry (2019) $\times$ Post-GF			0.081*** (0.023)	
Black Supply in Industry-State (2019) $\times$ Post-GF				0.082*** (0.024)
Adjusted R^2	0.935	0.935	0.935	0.935
Panel B: Hispanic Directors	(1)	(2)	(3)	(4)
Post-GF	-0.036* (0.022)			
Hispanic Supply in State (2019) $\times$ Post-GF		-0.045* (0.024)		
Hispanic Supply in Industry (2019) $\times$ Post-GF			0.045* (0.023)	
Hispanic Supply in Industry-State (2019) $\times$ Post-GF				-0.002 (0.023)
Adjusted R^2	0.924	0.924	0.924	0.924
Panel C: Asian Directors	(1)	(2)	(3)	(4)
Post-GF	0.069 (0.050)			
Asian Supply in State (2019) $\times$ Post-GF		-0.114** (0.058)		
Asian Supply in Industry (2019) $\times$ Post-GF			0.013 (0.055)	
Asian Supply in Industry-State (2019) $\times$ Post-GF				-0.111* (0.060)
Observations	243,724	243,724	243,724	243,724
Adjusted R^2	0.938	0.938	0.938	0.938
Year FE?		✓	✓	✓
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓

Table 4: Board Diversity in Startups by Director Type

This table presents coefficients from OLS regressions of board diversity at startups, with standard errors reported in parentheses. The unit of observation is a firm-year between 2013 and 2022. The dependent variable is the fraction of board members of a given director type who are Black, Hispanic, Asian, or Female. Panel A focuses on insider directors, who are executives of the company. Panel B focuses on outsider directors, who are not affiliated with the startup or its investors. Panel C focuses on investor directors, whose primary affiliation is with an investor in the startup. A firm-year is included if we observe at least one insider director (Panel A), one outsider director (Panel B), and one investor director (Panel C). The key independent variable is *Post-GF*, an indicator that equals one for the period 2020-2022 and zero for earlier years. All models include firm fixed effects, as well as controls for the log of VC funding raised up until that year and the log of board size. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Insider Directors	Black	Hispanic	Asian	Female
Post-GF	0.102*** (0.024)	-0.017 (0.023)	0.022 (0.045)	0.484*** (0.056)
Observations	156,225	156,225	156,225	156,225
Adjusted R^2	0.963	0.973	0.979	0.967
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.49%	1.96%	12.49%	11.99%

Panel B: Outsider Directors	Black	Hispanic	Asian	Female
Post-GF	0.249*** (0.040)	0.011 (0.037)	-0.057 (0.090)	1.234*** (0.111)
Observations	104,734	104,734	104,734	104,734
Adjusted R^2	0.912	0.924	0.933	0.903
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.17%	1.45%	9.76%	11.09%

Panel C: Investor Directors	Black	Hispanic	Asian	Female
Post-GF	0.037 (0.024)	-0.032 (0.026)	0.136* (0.071)	0.223*** (0.064)
Observations	122,090	122,090	122,090	122,090
Adjusted R^2	0.944	0.931	0.941	0.928
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	0.88%	1.22%	12.53%	7.90%

Table 5: How Is Employee Diversity Related to Board Diversity?

This table presents coefficients from OLS regressions of board diversity at startup firms, with standard errors reported in parentheses. The unit of observation is a firm-year between 2018 and 2022 for startups that have received VC investment and where we observe at least 10 employees in 2019. The dependent variable is the fraction of board members who are Black, Hispanic, Black & Hispanic, or Female. Panel A focuses on insider directors, Panel B on outsider directors, and Panel C on investor directors. A firm-year is included if we observe at least one director of that type on the board. The key independent variable is the racial composition of employees as of 2019, measured either as the fraction of *Black Employees (2019)*, *Hispanic Employees (2019)*, or Blacks and Hispanics (*B&H Employees (2019)*), standardized to have a mean of zero and a standard deviation of one. All models include startup and year fixed effects, as well as controls for the log of VC funding raised up until that year and the log of board size. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Insider Directors	Black	Hispanic	Black & Hispanic	Female
Black Employees (2019) $\times$ Post-GF	0.154*** (0.055)			
Hispanic Employees (2019) $\times$ Post-GF		-0.036 (0.045)		
B&H Employees (2019) $\times$ Post-GF			0.163** (0.082)	-0.127 (0.127)
Observations	18,125	18,125	18,125	18,125
Adjusted R^2	0.921	0.961	0.943	0.951
Year & Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.27%	1.61%	2.88%	11.84%
Panel B: Outsider Directors	Black	Hispanic	Black & Hispanic	Female
Black Employees (2019) $\times$ Post-GF	0.239* (0.133)			
Hispanic Employees (2019) $\times$ Post-GF		-0.040 (0.073)		
B&H Employees (2019) $\times$ Post-GF			0.243* (0.147)	0.227 (0.263)
Observations	14,695	14,695	14,695	14,695
Adjusted R^2	0.838	0.906	0.875	0.895
Year & Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.47%	1.48%	2.95%	16.59%
Panel C: Investor Directors	Black	Hispanic	Black & Hispanic	Female
Black Employees (2019) $\times$ Post-GF	0.043 (0.051)			
Hispanic Employees (2019) $\times$ Post-GF		0.006 (0.041)		
B&H Employees (2019) $\times$ Post-GF			0.066 (0.051)	-0.177 (0.135)
Observations	20,052	20,052	20,052	20,052
Adjusted R^2	0.939	0.922	0.931	0.925
Year & Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	0.99%	1.06%	2.05%	7.99%

Table 6: Which Startups Responded to George Floyd?

This table presents coefficients from OLS regressions of board diversity at startup firms, with standard errors reported in parentheses. The unit of observation is a startup-year between 2013 and 2022 for startups that have received VC investment. The dependent variable is the fraction of board members who are Black, Hispanic, Asian, or Female. We only include startup-years where we observe the race of at least one director on the board. Each panel represents an estimation of how the response to GF differs depending on a cross-sectional split. In Panel A, we include an indicator for whether the startup is predicted to fundraise after GF, specifically in the period from June 2020 to December 2021. This prediction is based on the timing of the startup’s latest pre-GF funding round and the average time between funding rounds for other startups in the same industry and deal stage over the previous five years (see Table A12 for details). Panel B examines the reaction of companies that are “close to public markets,” defined as being in the 90th percentile of cumulative funding raised within their industry. Panel C tests whether companies headquartered in California respond differently. Finally, Panel D focuses on business-to-consumer (B2C) companies. To ensure that the prediction for fundraising exists, only startups that received at least one financing round in 2019 or earlier are included. All models include year and startup fixed effects, as well as controls for the log of VC funding raised up until that year, the log of board size, and, in Panel D, an indicator for whether a startup has *raised a lot*. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Predicted to Fundraise	Black	Hispanic	Asian	Female
Predicted Fundraising $\times$ Post-GF	0.120*** (0.045)	-0.046 (0.051)	-0.069 (0.128)	0.330** (0.129)
Observations	231,575	231,575	231,575	231,575
Adjusted R^2	0.930	0.921	0.936	0.917
Panel B: Close to Public Markets	Black	Hispanic	Asian	Female
Raised a Lot $\times$ Post-GF	0.662*** (0.073)	0.111** (0.056)	0.043 (0.150)	2.757*** (0.171)
Observations	231,575	231,575	231,575	231,575
Adjusted R^2	0.930	0.921	0.936	0.917
Panel C: California Company	Black	Hispanic	Asian	Female
California HQ $\times$ Post-GF	-0.077** (0.039)	0.108** (0.053)	-0.206 (0.141)	0.496*** (0.134)
Observations	231,575	231,575	231,575	231,575
Adjusted R^2	0.930	0.921	0.936	0.917
Panel D: B2C Company	Black	Hispanic	Asian	Female
B2C Business $\times$ Post-GF	0.037 (0.063)	0.042 (0.062)	-0.114 (0.143)	-0.339* (0.179)
Observations	231,575	231,575	231,575	231,575
Adjusted R^2	0.930	0.921	0.936	0.917
Year FE?	✓	✓	✓	✓
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.21%	1.60%	11.78%	10.25%

Table 7: Board Diversity and Fundraising Outcomes

This table presents coefficients from OLS regressions, with standard errors reported in parentheses, for a matched sample of VC-backed startups with pre-GF black directors. See Table A13 for details. The unit of observation is a firm-year between 2013 and 2022 in Panels A and B, while it is a cross-section of startup performance in Panel C. The dependent variables in Panel A are the fraction of diverse board members, while in Panel B they are: $I(\text{Successful Funding Round?})$, an indicator for whether the firm raised funding in the year; and $\text{Ln}(\text{Capital Raised})$, which is the log of the amount raised in a year, conditional on fundraising. The dependent variables in Panel C are: $\text{Ln}(\text{Valuation Change})$, which is the log of one plus the ratio of the exit valuation to the most recent round's post-money valuation; $\text{Ln}(\text{TVPI})$, which is the log of TVPI plus one, with TVPI defined as the ratio of the exit value to the total amount raised up until that point; $I(\text{Successful Exit})$, which takes the value 1 if the startup got acquired or went public through an IPO, and 0 otherwise; and $I(\text{IPO})$, which takes the value 1 if the startup went public through an IPO. For startups that have not yet exited, the numerator for the valuation change and TVPI are the valuation in the most recent round. $I(\text{Black Directors} > 0)$ indicates that a firm had at least one black director in the year. All models include controls for the log of board size, as well year fixed effects. In Panels A and B, we further include firm fixed effects, while in Panel C we include a matched pair fixed effect and the log of the cumulative amount of capital raised pre-GF. In columns three and four of Panel B and all of Panel C we include deal type fixed effects. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Board Diversity

	Black	Hispanic	Asian	Female
No Pre-GF Black Directors $\times$ Post-GF	5.923*** (1.094)	-0.478* (0.259)	-0.556 (0.688)	-1.290 (0.787)
Observations	15,368	15,368	15,368	15,368
Adjusted R^2	0.914	0.827	0.890	0.898
Year & Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓

Panel B: Fundraising Outcomes:

Dependent Variable:	$I(\text{Successful Funding Round?})$	$\text{Ln}(\text{Capital Raised})$		
No Pre-GF Black Directors $\times$ Post-GF	-0.083*** (0.021)	-0.145*** (0.049)	-0.049 (0.120)	0.489 (0.451)
No Pre-GF Black Directors $\times$ $I(\text{Black Directors} > 0)$ $\times$ Post-GF		0.133 (0.185)		0.450 (1.025)
$I(\text{Black Directors} > 0) \times$ Post-GF		-0.069 (0.053)		0.630 (0.464)
$I(\text{Black Directors} > 0)$		0.010 (0.038)		-0.486*** (0.155)
Observations	15,368	15,368	6,137	6,137
Adjusted R^2	0.153	0.153	0.794	0.795
Year & Firm FE?	✓	✓	✓	✓
Deal Type FE?			✓	✓
Controls?	✓	✓	✓	✓

Panel C: Startup Performance:

Dependent Variable:	$\text{Ln}(\text{Valuation Change})$	$\text{Ln}(\text{TVPI})$	$I(\text{Successful Exit})$	$I(\text{IPO})$
No Pre-GF Black Directors $\times$ Post-GF	0.160 (0.201)	0.106 (0.551)	0.324* (0.179)	0.108 (0.094)
No Pre-GF Black Directors $\times$ $I(\text{Black Directors} > 0)$ $\times$ Post-GF	0.039 (0.208)	-0.055 (0.512)	-0.082 (0.061)	-0.046 (0.041)
$I(\text{Black Directors} > 0) \times$ Post-GF	0.268 (0.205)	0.234 (0.551)	0.316* (0.178)	0.127 (0.096)
$I(\text{Black Directors} > 0)$	0.007 (0.177)	0.338 (0.445)	-0.240 (0.171)	-0.112 (0.090)
No Pre-GF Black Directors	0.105 (0.179)	0.488 (0.440)	-0.226 (0.170)	-0.083 (0.089)
Observations	1,636	996	2,092	2,092
Adjusted R^2	0.159	0.224	0.225	0.146
Deal Year & Deal Type & Matched Pair FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓

Table 8: Board Diversity in Appointments — Public vs. Private Firms

This table presents coefficients from OLS regressions of board diversity at public and private firms, with standard errors reported in parentheses. The unit of observation is a firm-year between 2013 and 2021. The dependent variable is the fraction of newly appointed board members who are either Black (Panel A), Hispanic (Panel B), Asian (Panel C), or Female (Panel D). The key independent variable is the interaction between *Public*, an indicator that equals one if the company is a public firm, and *Post-GF*, an indicator that equals one for the period 2020-2022 and zero for earlier years. All models include year and firm fixed effects, and control for the log of board size and whether a firm is publicly traded. Column (1) provides the baseline estimate. Column (2) adds State $\times$ Post-GF fixed effects. Column (3) adds an indicator for public firms listed on Nasdaq, and a Nasdaq $\times$ Post-GF indicator. Column (4) adds indicators for publicly listed California firms, California $\times$ Post-GF, and California $\times$ Public $\times$ Post-GF. Column (5) adds Ln(Board Size) $\times$ Post-GF. Column (6) includes all of these as controls. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Black Directors — Pre-GF Public-Private Gap: 4.30%

	(1)	(2)	(3)	(4)	(5)	(6)
Public $\times$ Post-GF	12.267*** (0.881)	11.636*** (0.872)	14.622*** (1.276)	13.257*** (1.002)	10.886*** (0.936)	13.184*** (1.380)
Observations	58,224	58,224	58,224	58,224	58,224	58,224
Adjusted R^2	0.030	0.037	0.031	0.032	0.030	0.038

Panel B: Hispanic Directors — Pre-GF Public-Private Gap: 0.81%

	(1)	(2)	(3)	(4)	(5)	(6)
Public $\times$ Post-GF	1.406*** (0.493)	1.350*** (0.501)	0.607 (0.638)	1.039** (0.517)	1.244** (0.533)	0.155 (0.688)
Observations	58,224	58,224	58,224	58,224	58,224	58,224
Adjusted R^2	0.014	0.015	0.014	0.014	0.014	0.015

Panel C: Asian Directors — Pre-GF Public-Private Gap: -7.84%

	(1)	(2)	(3)	(4)	(5)	(6)
Public $\times$ Post-GF	2.029*** (0.765)	2.263*** (0.784)	0.366 (0.852)	0.847 (0.793)	1.929** (0.930)	-0.503 (1.072)
Observations	58,224	58,224	58,224	58,224	58,224	58,224
Adjusted R^2	0.166	0.166	0.166	0.166	0.166	0.166

Panel D: Female Directors — Pre-GF Public-Private Gap: 16.89%

	(1)	(2)	(3)	(4)	(5)	(6)
Public $\times$ Post-GF	2.373* (1.282)	3.606*** (1.294)	-2.573 (1.676)	1.595 (1.401)	-0.955 (1.456)	-5.871*** (1.905)
Observations	58,224	58,224	58,224	58,224	58,224	58,224
Adjusted R^2	0.089	0.091	0.090	0.090	0.090	0.093
Year FE?	✓	✓	✓	✓	✓	✓
Firm FE?	✓	✓	✓	✓	✓	✓
Controls?	✓	✓	✓	✓	✓	✓
State $\times$ Post-GF FE?		✓				✓
Nasdaq $\times$ Post-GF?			✓			✓
California $\times$ Post-GF?				✓		✓
Ln(Board Size) $\times$ Post-GF?					✓	✓

Table 9: Where do Directors Come From?

This table presents the fraction of newly appointed directors who held a director role prior to the period of their appointment. We split directors into four categories: those who had no director role prior to the period of their appointment; those who held a seat on a startup board; those who held a seat on a public board; and those who held both public and startup board seats. Panel A presents statistics for directors appointed to public boards in 2020 and 2021. We classify directors based on their board positions in 2019. Panel B presents statistics for directors appointed to public boards in 2018 and 2019. We classify directors based on their board positions in 2017. Panel C presents statistics for directors appointed to startups boards in 2020 and 2021, while Panel D focuses on startup appointments in 2018 and 2019. We present these statistics for all director appointments, as well as separately for Black, Hispanic, Asian, and Female director appointments.

Panel A: Public Appointments Post-GF (2020 and 2021)				
Director Role in 2019:	No Director Role	Startup Only	Public Only	Both
All Directors	0.595	0.122	0.116	0.167
Black	0.701	0.042	0.092	0.166
Hispanic	0.574	0.052	0.122	0.252
Asian	0.641	0.143	0.091	0.125
Female	0.617	0.097	0.127	0.159

Panel B: Public Appointments Pre-GF (2018 and 2019)				
Director Role in 2017:	No Director Role	Startup Only	Public Only	Both
All Directors	0.595	0.130	0.135	0.140
Black	0.566	0.085	0.156	0.193
Hispanic	0.488	0.151	0.140	0.221
Asian	0.617	0.162	0.109	0.113
Female	0.629	0.090	0.139	0.142

Panel C: Startup Appointments Post-GF (2020 and 2021)				
Director Role in 2019:	No Director Role	Startup Only	Public Only	Both
All Directors	0.709	0.229	0.021	0.040
Black	0.743	0.104	0.055	0.098
Hispanic	0.754	0.171	0.016	0.060
Asian	0.690	0.278	0.012	0.021
Female	0.718	0.163	0.045	0.073

Panel D: Startup Appointments Pre-GF (2018 and 2019)				
Director Role in 2017:	No Director Role	Startup Only	Public Only	Both
All Directors	0.732	0.215	0.020	0.033
Black	0.764	0.133	0.024	0.080
Hispanic	0.760	0.178	0.025	0.037
Asian	0.726	0.248	0.010	0.016
Female	0.760	0.142	0.040	0.059

Venturing into Racial Diversity on Startup Boards

Internet Appendix

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Appendix A. Board of Directors in Private Firms

Our data on private company directors comes from PitchBook, providing start and end dates of the director’s tenure at a given company. To understand the diversity of private company directors, we need to overcome three hurdles. First, PitchBook does not collect data on director race. One of our contributions is therefore to collect this information for all directors. While we take great care to correctly classify directors, a potential concern is that we can only retrieve the race for a small subset of those directors. Second, PitchBook may not capture all director appointments, as private firms are not required to publicly disclose director appointments. These two points would call into question the external validity of our findings. Third, PitchBook may lack data on the start and/or end date of a director’s appointment ([Ewens and Malenko, 2022](#)). The start date is important as a focus of this paper is to understand how diversity evolves over time.

In our initial dataset, PitchBook does not have a start date for 31.5% of all director appointments. We complement missing start and end dates by using directors’ LinkedIn profiles, as well as by merging startups to their Form D filings, when available. One limit to this approach is that PitchBook does not always have a LinkedIn profile link for directors. To mitigate this limitation, we search extensively for LinkedIn profiles of directors without a LinkedIn profile in PitchBook.

We use PitchBook’s start and end years for a director’s tenure whenever available. For missing cases, we complement the start year with the first year they are associated with the firm according to their LinkedIn profile and use the last year they are associated with the firm as the end year. We take a similar approach to Form D filings, using the first and last year they appear on such filings. If they are still associated with the firm, we assume that the director is still on the firm’s board. Through this process we improve our coverage of start dates from 69.5% to 90.4% of all director appointments.

Panel A of Table 1 shows the total number of private firm-years with at least one director appointment and the average number of directors appointed, aggregated in four-year buckets. The panel further shows the fraction of director appointments for which we have director race data. To compare to our public firm coverage of director race, Panel

B presents similar statistics for public firms. Overall, we have director race for 80.8% of director appointments in our private-firm sample, which compares to 40.9% for public firms. Coverage of race in director appointments in public firms improves over time, but remains lower than that of our sample of private company directors until 2020-2021.

Section A.2.1 outlines our approach for validating the coverage of directors on startup boards, with results presented in Table A1. We find that PitchBook covers 95% of all directors we can identify from searching for directors among all employees in LinkedIn. While we do not assume that PitchBook has complete coverage of boards, we assume that its coverage is not a function of race. Though we have slightly fewer non-white directors, we do not find strong evidence refuting this assumption.

Appendix A.1. Details on Process to Classify Directors' Race

We classify the race of directors, following the U.S. Census, into the following categories: Hispanic, Black, Asian, and White. Our approach combines two algorithmic approaches with manual review. Our first algorithmic approach uses a machine learning algorithm to predict directors race from profile pictures, which we complement with an algorithmic prediction based on the first and last name of the director (see Cook et al. (2022) for details on the algorithmic classification). Since we require both a name and a picture for each director, we are unable to classify a director when we cannot find an image for them. Whenever available, we rely on the director's LinkedIn profile picture. If missing, we search for a picture using the startup's website, or use alternative online sources if the director is clearly identified as a director of the firm in question.

Following the algorithmic classification, we hire three UpWorkers to review all classifications. One UpWorker self-identifies as Asian American, one as Hispanic, and one as Black. Our hope, backed by research (Ma et al., 2021), is that each UpWorker is better suited to identify members of their group. We provide the UpWorkers with the names and profile pictures of all directors, and ask for their classification of the directors. If all three UpWorkers agree on a classification, we leave the director in that category. Any remaining discrepancies are resolved by one of the authors.

After this first pass, we conduct two additional full-scale reviews. As before, we hire three UpWorkers to review the initial algorithmic predictions and the classifications of the previous batch of UpWorkers. We ask each of these UpWorkers to first focus on the group they identify with and remove images of directors they believe have been incorrectly placed in that group. When they remove a director, we ask them to propose the racial or ethnic category they believe best identifies the director. After that, we ask the same UpWorker to review all directors classified as a different race and ask whether any of these directors should be in the group the UpWorker identifies as. For example, we ask the Hispanic UpWorker to propose director images we should exclude from the set of directors preliminary classified as Hispanic. We then ask this Hispanic UpWorker to search for potential Hispanic directors among directors classified as any other race (White, Black, and Asian). We repeat this step twice, with one of the authors reviewing every proposed change.

Subsequently, we conduct a further targeted review focusing on potential false positives, where the UpWorker focuses on identifying incorrectly classified directors from their group.²³ For any proposed incorrect classification at this stage, one of the authors searches for information on LinkedIn, interviews of the director, newspaper coverage, or additional information corroborating the original classification. If we do not find any information refuting the proposed category, we accept the new category proposed by the UpWorker. Finally, two of the authors independently conduct a full manual review of all director classifications.

We gather director appointments in PitchBook for all directors associated with the startups in our sample. As some of these firms go public, we end up classifying race for a subset of directors that are also covered by ISS. We leverage this overlap to validate our approach by comparing our classifications with those of ISS. To do so, we match directors by fuzzy matching on their names within each company, and gather the classifications of all overlapping directors in Table A17. When we classify directors as Black, ISS almost

²³ At this stage we only hire two UpWorkers, one who identifies as Black and one who identifies as both Hispanic and Asian American.

always agrees. There is less overlap for those we classify as Hispanic or Asian, but ISS agrees with the majority of our classifications.²⁴

Appendix B. Classifying Race for VC Firm Employees

Our starting point is 33,658 unique venture capital (VC) investors in PitchBook. We require firms to have at least one completed deal between 2017 and 2024, have a valid website or LinkedIn URL, and be based in the U.S., which leaves us with 6,902 VC firms. We match these firms to CoreSignal using the website and LinkedIn URLs. We do not use name matching to avoid false positives. We successfully match 3,473 of these firms, representing a 50.3% match rate.

Next, for these matched VC firms, we extract data on their employees. We clean the job titles by converting them to lowercase, removing line breaks, punctuation, special characters, and stop words. We extract job titles related to the investment process, and categorize these employees into three levels of management: senior, middle, and junior.

For senior management, we include job titles indicating leadership positions within VC firms, such as “founding partner,” “managing partner,” “general partner,” “managing director,” “chief executive officer (CEO),” and “chief investment officer.” In middle management, we include titles reflecting individuals who manage teams or specific business areas, such as “vice president (VP),” “senior vice president,” “principal,” “investment director,” and “executive director.” Junior management comprises positions like “analyst” and “associate”, reflecting entry-level or supporting roles in VC firms (Gompers et al., 2020).

In total, we identify 3,766 unique employees with investment-related roles, for whom we successfully retrieved images for race classification. Unlike in our main sample, we do not search for additional images for these employees on the websites of the VC firms

²⁴ Due to the fuzzy matching on director names, it is possible that some of the discrepancies are due to incorrectly matched directors.

or other social media platforms. We classify race using a machine learning algorithm to predict race based on name and their picture. We do not add a clerical review step for these employees, as our primary goal is to examine trends in employee diversity. We assume that any classification errors are not a function of the year in which the individual was employed by the VC firms.

Appendix C. Matching Directors in BoardEx to ISS

Our dataset of directors in public firms comes from BoardEx, which lacks information about directors’ ethnicities. We supplement it with ISS, which has data on board directors’ ethnicities. This appendix details our process for matching directors in BoardEx to ISS and verifying the accuracy of our matches.

We begin by matching companies in both datasets on CIK (the Central Index Key—a firm-specific identifier given to the firm by the Securities and Exchange Commission)—and then matching the directors at that company. This initial step ensures that we do not accidentally match two different directors with similar names by requiring that they are listed as being on the same company’s board according to both BoardEx and ISS.

Second, we match directors associated with the matched firm pair using two textual analysis methods: fuzzy name matching on cleaned names and matching on common nicknames plus surnames.

We combine these two approaches because BoardEx and ISS list director names inconsistently. While ISS typically lists individuals with their legal first and last names, BoardEx commonly uses nicknames and often includes honorary titles and suffixes. For example, in 2021, Benjamin Cravatt was on the board of directors of [Fibrogen, Inc.](#) In ISS, he appears as “Benjamin Cravatt”, while BoardEx lists him as “Professor Doctor Ben Cravatt III”. While Ben and Benjamin are close enough for fuzzy matching to work reasonably well, other common nicknames are less similar (e.g., “Bob” for “Robert”, or “Bill” for “William”).

Our name cleaning consists of removing punctuation, standardizing special characters,

removing common honorary titles, prefixes, suffixes, initials, and family name prepositions (e.g., “de”, “la”, “von”), and removing single-letter initials. To identify common honorary titles, prefixes, and suffixes, we manually inspect the 500 most commonly occurring words among director names in BoardEx and ISS.

Then, we calculate two fuzzy name-matching scores. One is based on directors’ cleaned names, and the other on the original name entry. We consider pairs of directors with fuzzy name matching scores exceeding 95% to be a match. To further remove false positives, we manually inspect every match with a score below 100%. The manual inspection validates that the 95% threshold avoids false positives. As noted earlier, we only consider director pairs that are listed as directors for the same firm in both BoardEx and ISS. While there are some valid matches with lower fuzzy matching scores, false positives rapidly increase below the 95% threshold.

To reduce false negatives (unmatched directors that are the same person), we focus on directors whose surnames are the same. Unlike first names, BoardEx does not replace surnames with variations, making them comparable across the two datasets. However, as certain surnames are common, relying solely on surnames may yield false positives. We therefore incorporate the nicknames from BoardEx in our process. Specifically, we match directors across the databases if their surnames match while the first name in ISS has a nickname variation matching the nickname used by BoardEx.²⁵ We manually inspect each proposed match, comparing dates at which ISS and BoardEx claim the director worked for the company to ensure an accurate match.

For remaining cases where there is a match on surnames, but we have neither a nickname match nor a fuzzy matching score on first names above 95, we inspect each potential match to identify a sufficiently good fuzzy-matching threshold. We find that if the fuzzy matching on the full name exceeds 80 and surnames match, it is almost always a match. We include all these matches except for four cases where multiple family members

²⁵ We use a database of nicknames from <https://github.com/carltonnorthern/nicknames> (accessed on July 29, 2022), which was initially generated by mining a genealogy page. As it was mined from a genealogy page consisting primarily of old nicknames, we manually complement this list with common nicknames in BoardEx. Please contact the authors for additional details on the nickname-matching process.

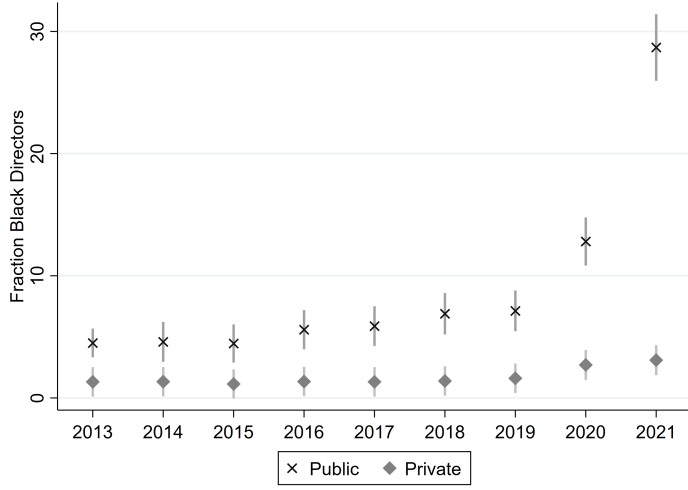
had worked in the same firm.²⁶

When a director in BoardEx matches to multiple directors in ISS, we inspect all matches manually to keep the best match. To resolve ties, we rely on a nickname match if available, and, in the absence of a nickname match, we resolve any remaining cases by retaining the match with the highest overall fuzzy matching score.

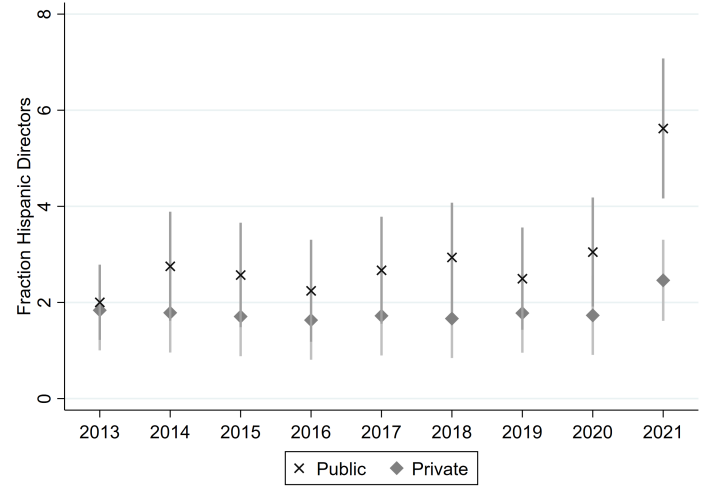
ISS classifies race/ethnicity by one of the following eight categories: Black/African American, Asian (excluding Indian/South Asian), Caucasian/White, Hispanic/Latin American, Native American/Alaskan Native, Indian/South Asian, Middle-Eastern/North African, Native Hawaiian/Other Pacific Islander, and Other. As ISS race classifications have more categories than our PitchBook classification of directors, we map ISS classifications into our four categories as follows: We map “Black/African American” to “Black”; “Hispanic/Latin American” to “Hispanic”; “Indian/South Asian”, “Asian (exclude Indian/South Asian)”, and “Native Hawaiian/other Pacific Islander” to “Asian.” We map all other categories to “White.”

If a director is matched between ISS and BoardEx and has specified race/ethnicity, we apply this race/ethnicity data to all boards on which the director sits according to BoardEx.

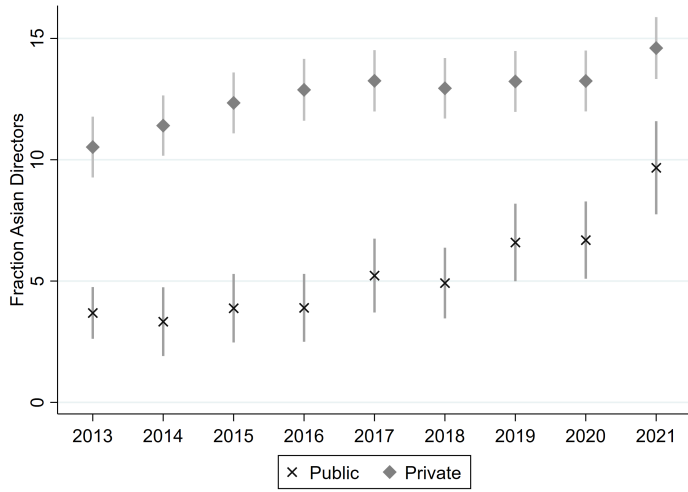
²⁶ These incorrect matches are: William Peterffy being matched with Tom Peterffy at Interactive Brokers; Zachary Jaindl and Mark Jaindl at American Bank; Ryan Ruhlman and Randy Ruhlman at Preformed Line Products; and Ronald Lauder and Leonard Lauder at Estée Lauder.



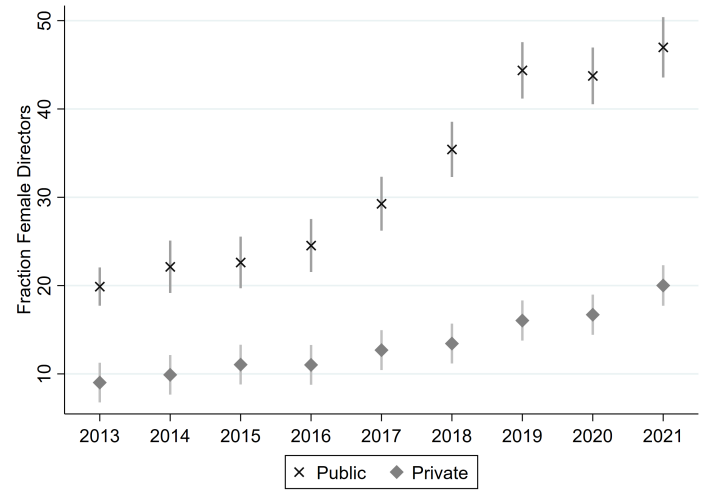
(a) Black Directors



(b) Hispanic Directors



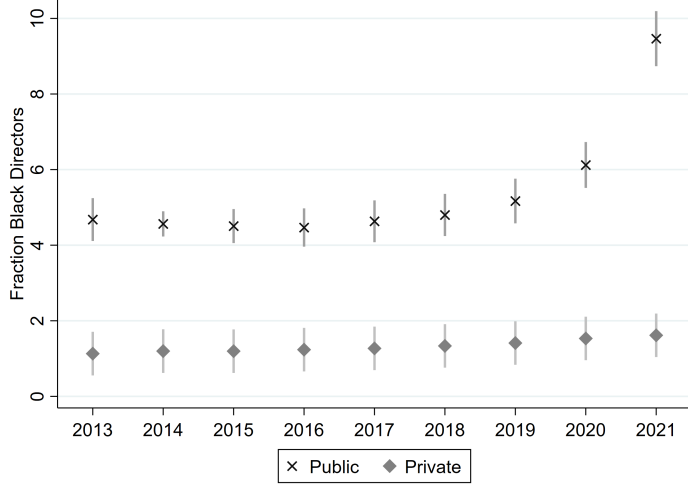
(c) Asian Directors



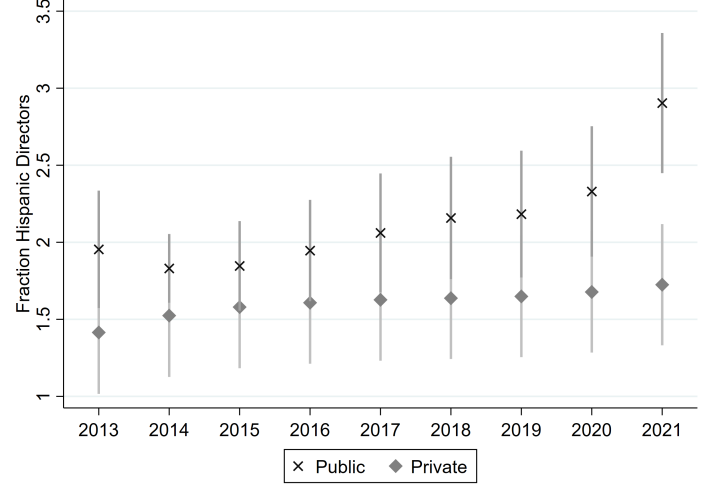
(d) Female Directors

Figure A1: Board Diversity in Appointments - Public vs. Private

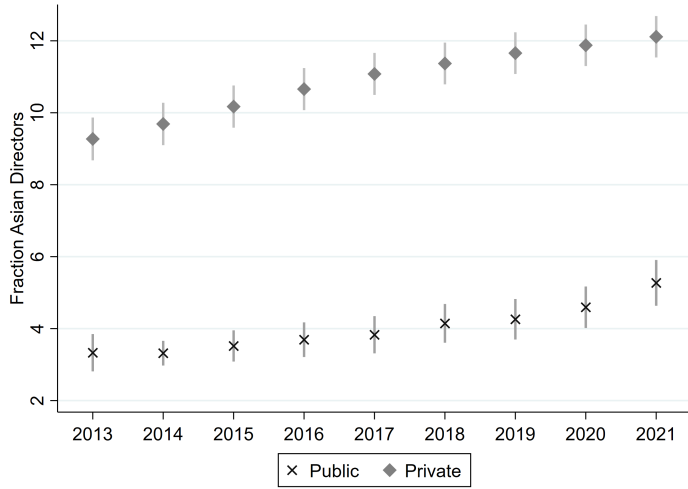
This figure shows board diversity in appointments in public and private firms from 2013 to 2021. The subfigures display the average fraction of newly appointed board members who are: (a) Black, (b) Hispanic, (c) Asian, and (d) Female. Averages are calculated across firms, considering only new directors whose race or gender is known. The lines around the dots represent 95% confidence intervals, estimated from OLS regressions that interact an indicator for whether a company is publicly traded or privately held with year indicators. Each regression has 85,212 observations. We cluster standard errors by the firm.



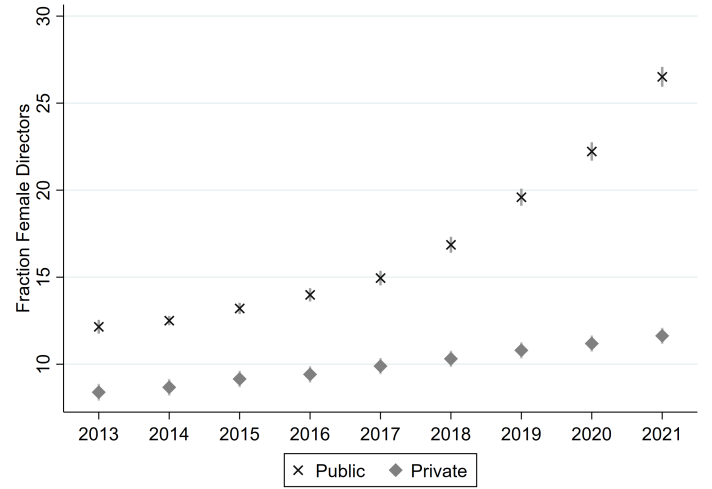
(a) Black Directors



(b) Hispanic Directors



(c) Asian Directors



(d) Female Directors

Figure A2: Board Diversity in Levels – Public vs. Private

This figure shows board diversity in public firms and startups from 2013 to 2021. The subfigures display the average fraction of board members who are (a) Black, (b) Hispanic, (c) Asian, and (d) Female. Averages are calculated across firms and only consider directors whose race or gender is known. The lines around the dots represent 95% confidence intervals, estimated from OLS regressions that interact an indicator for whether a company is publicly traded or privately held with year indicators. Each regression has 380,285 observations. We cluster standard errors by the firm.

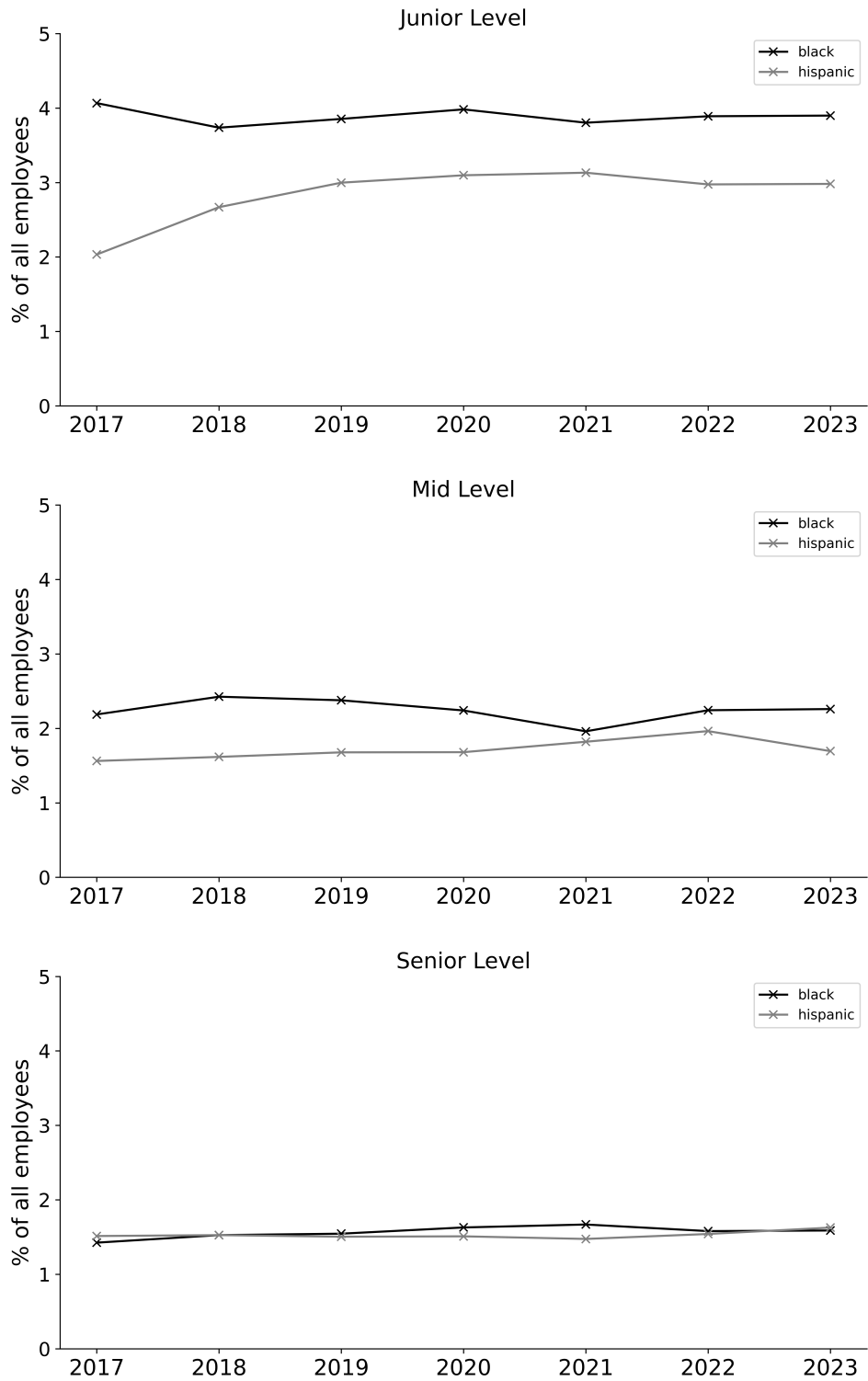


Figure A3: Racial Diversity in Venture Capital Firms by Role

This figure documents racial representation among employees in Venture Capital firms by the level of seniority. We extract employees from LinkedIn through CoreSignal, and classify race using a machine learning algorithm combining names and profile pictures. The numbers in the figure are based on 3,766 unique employees, with seniority classified from their job titles. See Appendix ?? for details on this process.

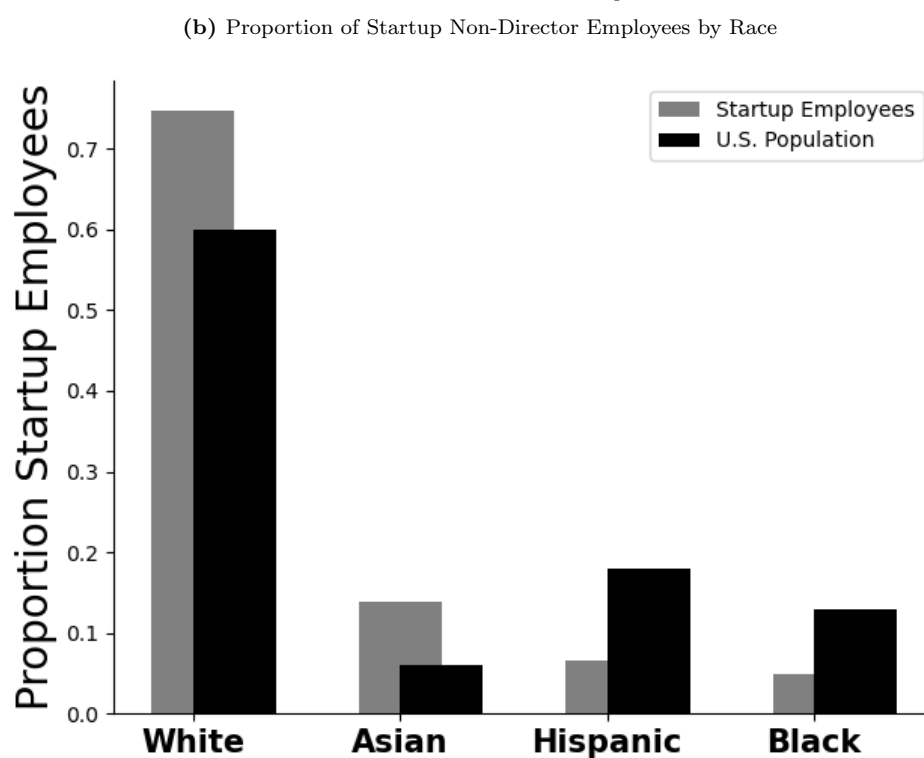
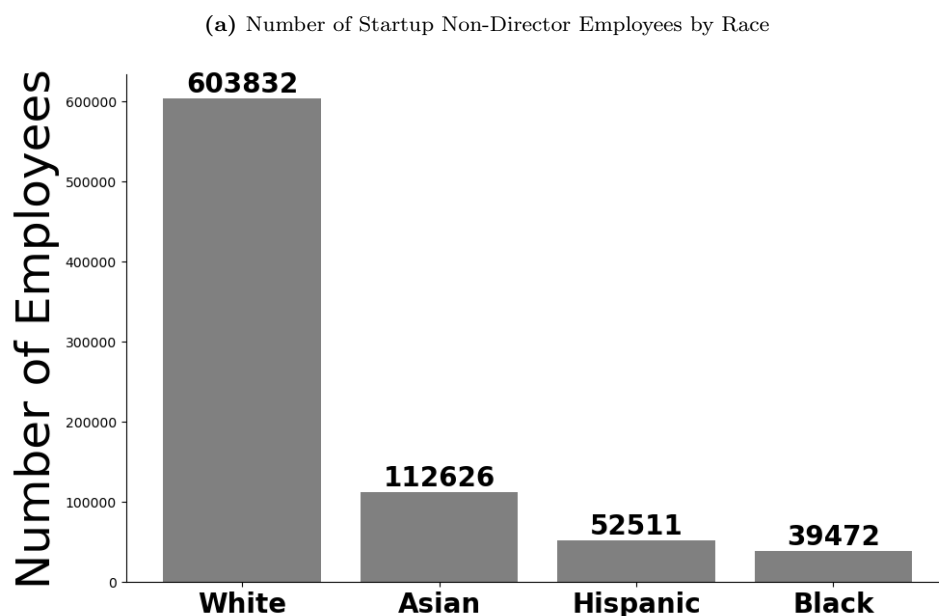


Figure A4: Startup Employees by Race

This figure plots the number (Panel A) and proportion (Panel B) of startup non-director employees by race. In Panel B, the darker bars represent the proportion of each race in the population according to the 2020 U.S. Census.

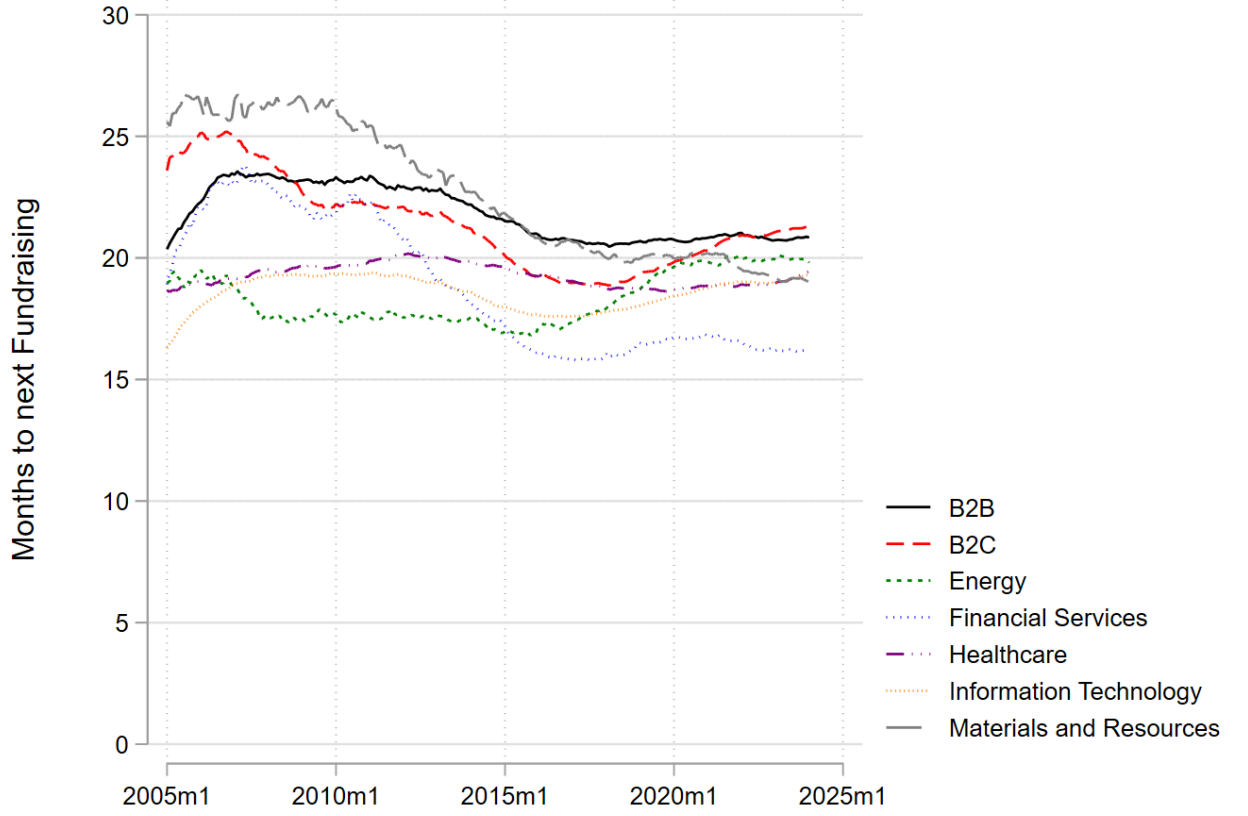


Figure A5: Time Between Funding Rounds

This figure plots the moving average of the number of months between funding rounds across seven industry classifications. The moving average is calculated at a monthly level by averaging the time between funding rounds for follow-on funding rounds concluded in the past 60 months. We calculate this average at the industry-deal type level. We use these moving averages to predict the timing of the next fundraising in Tables A12 and 6. For example, consider a startup in Healthcare that raises a Series A round in January 2020. We generate a prediction of the time to next fundraising by considering all Series B rounds of Healthcare-focused startups that concluded between January 2015 and December 2019. For each of these startups, we measure the number of months between the Series A funding round and the Series B funding round. We then calculate the average number of months between those two funding rounds.

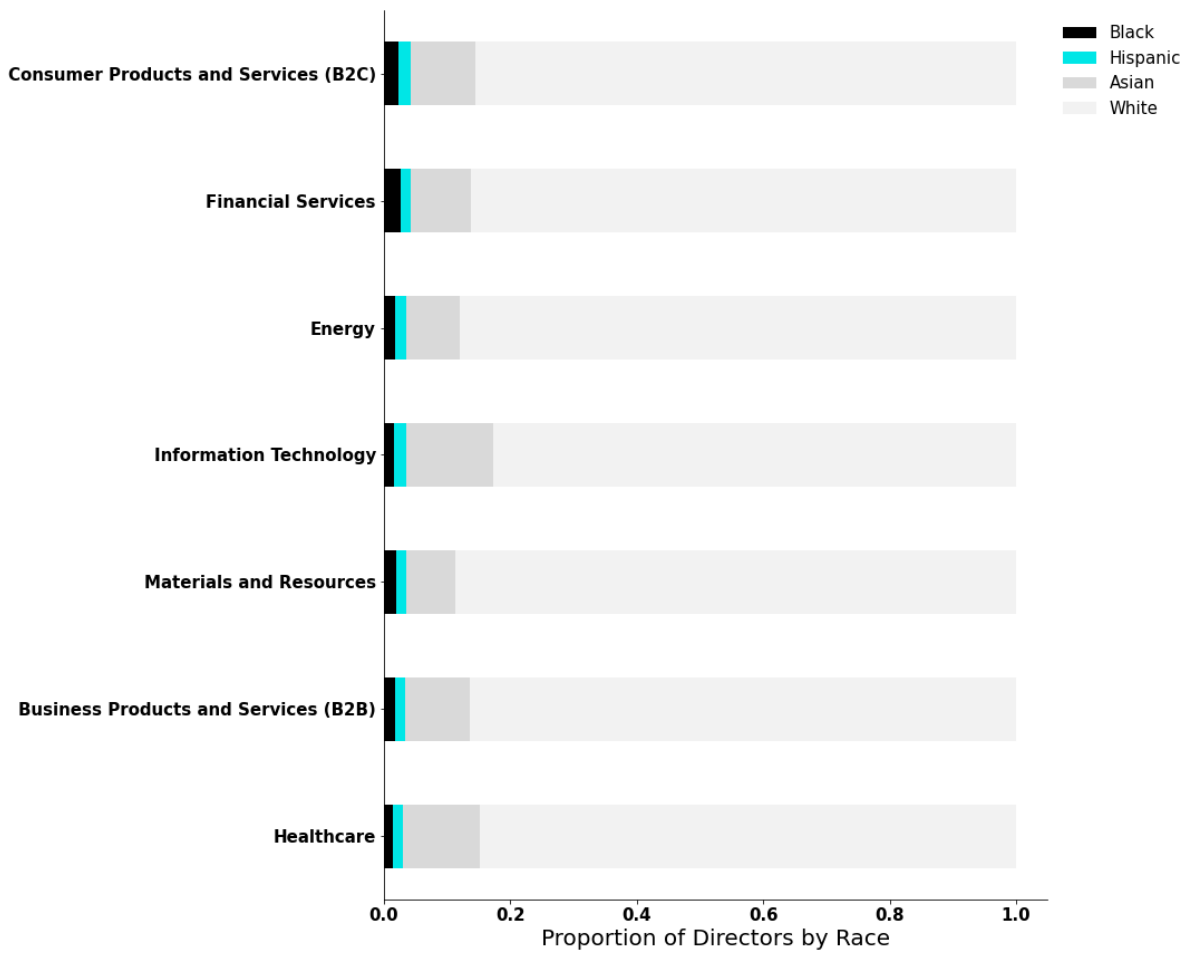
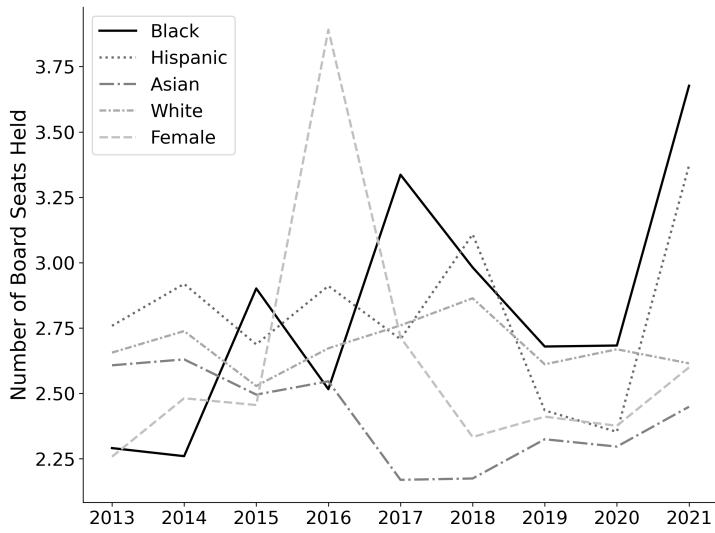
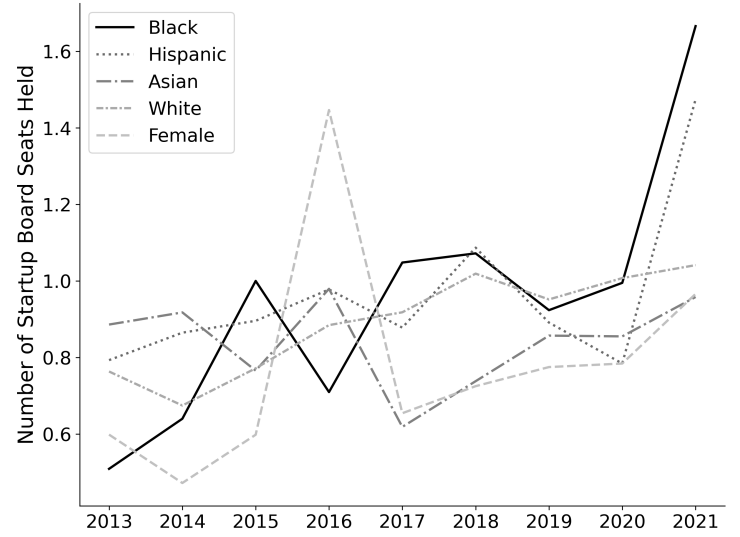


Figure A6: Startup Racial Diversity by Industry Sector

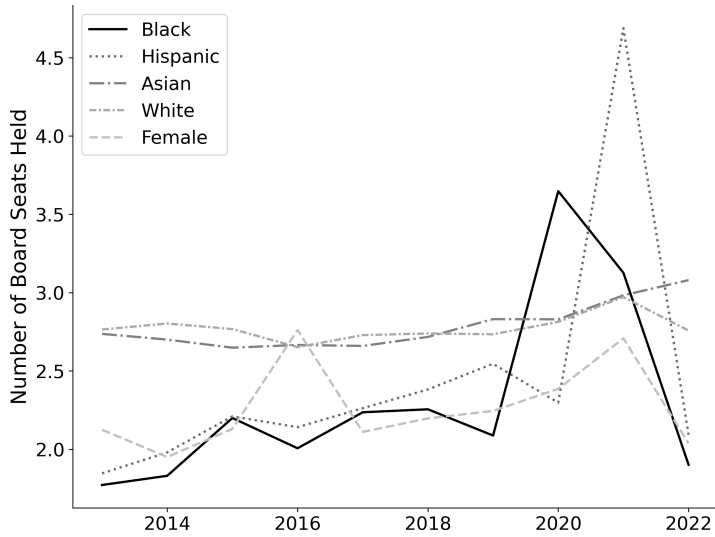
This figure documents racial representation among boards of directors in startups by industry sectors. The industries are sorted in descending order of the Black and Hispanic directors on the board.



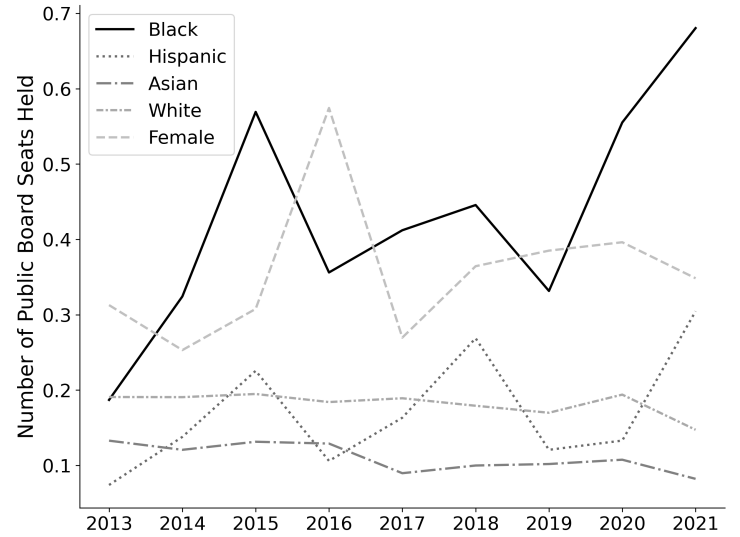
(a) Public Directors



(b) Startup Seats Held by Public Directors



(c) Startup Directors



(d) Public Seats Held by Startup Directors

Figure A7: Director Busyness at Time of Appointment

This figure shows the average number of concurrent board positions held by directors at the time of their appointments to a board of a public firm or a startup. We present results for the period 2013 to 2021 for public appointments, and 2013 to 2022 for startup appointments. The subfigures display: (a) the average number of board positions, public and private, held by newly appointed directors of public boards, (b) the average number of startup board positions held by newly appointed directors of public boards, (c) the average number of board positions, public and private, held by newly appointed startup directors, and (d) the average number of public board positions held by newly appointed startup directors. Averages are calculated across director appointments within a year, and we separately report them for Black, Hispanic, Asian, White, and Female directors.

Table A1: Validating PitchBook’s Coverage of Startup Directors

This table tabulates the coverage of directors by PitchBook relative to two other datasets for our sample of private firms. In Panel A, we compare PitchBook’s coverage to directors in LinkedIn for directors appointed between 2013 and 2021. In Panel B, we compare it to all directors identified through state filings with the Massachusetts corporate division. As this is a small sample, we include all director appointments for the private firms in our sample between 2000 and 2022. To identify directors in LinkedIn, we consider all individuals associated with a firm on LinkedIn, and extract potential directors of the board by processing their job titles. The sample consists of companies in our sample of private companies that we match to LinkedIn through fuzzy name matching. As fuzzy name matching may generate multiple matches in LinkedIn for a given company name in PitchBook, we require that at least one of the directors associated with that firm in PitchBook is identified among the employees in the LinkedIn dataset, either as a director or as a senior executive. Individuals are matched through their LinkedIn URLs. The total number of unique companies is 4,890 in Panel A. In Panel B, we use the set of startups headquartered in Massachusetts to search for the directors (we used [this link](#)) and officers listed on their most recent filing with the state. We then collect images for these directors from the startups’ websites and restrict our list to startups with 100% coverage of all directors on the state filings. Next, we merge these companies to PitchBook to compare coverage of firms in both datasets. The total number of unique companies is 128. Note that the number of directors covered by PitchBook may exceed that in the filings as the PitchBook coverage is a time-series, whereas the filings in Massachusetts state filings are snapshots.

Panel A: PitchBook vs. LinkedIn

Directors in LinkedIn	Director Race				# Directors
	White	Black	Hispanic	Asian	
All Directors	84.34%	1.22%	1.42%	13.02%	15,139
Insider Directors	83.71%	1.39%	1.79%	13.10%	3,518
Outsider Directors	86.58%	1.73%	1.27%	10.42%	4,328
Investor Directors	83.32%	0.84%	1.32%	14.52%	7,286

Directors in PitchBook	White	Black	Hispanic	Asian	# Directors
All Directors	84.34%	1.14%	1.38%	13.13%	14,520
Insider Directors	83.92%	1.17%	1.72%	13.20%	3,084
Outsider Directors	86.39%	1.74%	1.30%	10.56%	4,241
Investor Directors	83.31%	0.78%	1.29%	14.62%	7,195

Panel B: PitchBook vs. Massachusetts state filings

Directors in Massachusetts	Director Race				# Directors
	White	Black	Hispanic	Asian	
All Directors	81.50%	1.32%	1.98%	15.20%	454

Directors in PitchBook	White	Black	Hispanic	Asian	# Directors
All Directors	83.76%	0.96%	1.45%	13.83%	622

Table A2: Board Diversity by Director Type

This table presents the distribution of director types by race and gender for our sample of startups. Only director appointments from 2013 to 2022 are included. We classify directors as “Insiders” if they are executives of the company according to PitchBook. We classify directors as “Investors” if they are on the board representing an investment firm that PitchBook classifies as “Venture Capital,” “Private Equity,” “Angel Group,” or “Limited Partner.” We classify directors as “Outsiders” if they are neither Insiders nor Investors. Panel A presents the number of unique directors in each role who are Female, Black, Hispanic, or Asian. Panel B reports the fraction of diverse directors for each role and the total fraction of diverse directors for all roles combined.

Panel A: Number of Directors

Director Role:	Insider	Investor	Outsider	Total
Female	5,435	3,854	5,610	14,899
Black	798	419	630	1,847
Hispanic	778	519	589	1,886
Asian	4,900	5,441	3,294	13,635
All Directors	37,049	38,952	32,336	108,337

Panel B: Fraction of Diverse Directors

Director Role:	Insider	Investor	Outsider	Total
Fraction Female	14.7%	9.9%	17.3%	13.8%
Fraction Black	2.2%	1.1%	1.9%	1.7%
Fraction Hispanic	2.1%	1.3%	1.8%	1.7%
Fraction Asian	13.2%	14.0%	10.2%	12.6%

Table A3: Summary Statistics on Board and Employee Diversity

This table reports summary statistics for our sample of private firms between 2013 and 2022. A firm-year is included if we can observe the race of at least one director on the board. Panel A presents statistics for all directors. Panel B focuses only on *Insider Directors*, defined as directors who are employed at the firm at the time of their board appointment. Each panel also presents the composition of employees in year $t - 1$. The variables we summarize are: *Board Size*, which is the number of directors on the board; *Black Directors*, *Hispanic Directors*, *Asian Directors*, and *Female Directors*, which are the percentage of directors on the board of a given race/gender. For the employee data, we only include firm-years for which we observe at least 10 employees and only the years 2018 through 2022. *Black Employees*, *Hispanic Employees*, and *Asian Employees* are presented as the percentage of employees of a given race.

Panel A: All Directors						
	Full Sample		2013–2019		2020–2022	
	N = 395,291		N = 260,005		N = 135,286	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Board Size	2.29	1.83	2.21	1.75	2.44	1.97
Black Directors (%)	1.38	9.99	1.26	9.75	1.60	10.50
Hispanic Directors (%)	1.63	10.67	1.59	10.61	1.72	10.76
Asian Directors (%)	11.15	27.00	10.66	26.65	12.07	27.46
Female Directors (%)	10.27	25.16	9.62	24.75	11.52	25.83

Employee Data	2018–2022		2018–2019		2020–2022	
	N = 34,586		N = 14,801		N = 19,785	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Number of Employees	43.67	111.81	39.20	120.10	47.01	105.06
Black Employees (%)	4.03	5.83	3.96	6.15	4.08	5.57
Hispanic Employees (%)	6.02	6.53	5.96	7.07	6.06	6.10
Asian Employees (%)	14.79	13.92	14.97	14.77	14.65	13.24

Panel B: Insider Directors						
	Full Sample		2013–2019		2020–2022	
	N = 254,210		N = 163,370		N = 90,840	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Board Size	2.49	1.98	2.35	1.86	2.75	2.15
Black Directors (%)	1.54	11.41	1.39	10.98	1.81	12.17
Hispanic Directors (%)	1.89	12.54	1.84	12.46	1.97	12.66
Asian Directors (%)	11.87	30.37	11.39	29.96	12.75	30.95
Female Directors (%)	11.78	29.43	11.22	29.05	12.78	30.06

Employee Data	2018–2022		2018–2019		2020–2022	
	N = 22,951		N = 9,649		N = 13,302	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Number of Employees	47.28	129.15	41.61	140.24	51.39	120.29
Black Employees (%)	4.03	5.76	3.95	6.12	4.08	5.48
Hispanic Employees (%)	5.95	6.55	5.89	7.17	5.99	6.06
Asian Employees (%)	14.95	13.82	15.21	14.87	14.76	12.99

Table A3: Continued

This table reports summary statistics for our sample of private firms between 2013 and 2022. A firm-year is included if we can observe the race of at least one director on the board. Panel C focuses only on *Outsider Directors*, which are directors unaffiliated with both the firm and investors in the firm. Panel D presents statistics for *Investor Directors*, which are board members working for an investor in the firm. Each panel also presents the composition of employees in year $t - 1$. The variables we summarize are: *Board Size*, which is the number of directors on the board; *Black Directors*, *Hispanic Directors*, *Asian Directors*, and *Female Directors*, which are the percentage of directors on the board of a given race/gender. For the employee data, we only include firm-years for which we observe at least 10 employees and only the years 2018 through 2022. *Black Employees*, *Hispanic Employees*, and *Asian Employees* are presented as the percentage of employees of a given race.

Panel C: Outsider Directors						
	Full Sample		2013–2019		2020–2022	
	N = 148,845		N = 96,763		N = 52,082	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Board Size	3.21	2.30	3.08	2.20	3.46	2.45
Black Directors (%)	1.30	9.97	1.15	9.54	1.57	10.72
Hispanic Directors (%)	1.51	10.92	1.44	10.80	1.62	11.16
Asian Directors (%)	9.44	26.88	9.12	26.66	10.02	27.33
Female Directors (%)	11.24	27.93	9.95	26.66	13.62	29.97
Employee Data	2018–2022		2018–2019		2020–2022	
	N = 17,591		N = 7,405		N = 10,186	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Number of Employees	51.33	140.75	46.49	155.56	54.85	128.81
Black Employees (%)	3.85	5.61	3.76	5.83	3.92	5.44
Hispanic Employees (%)	5.81	6.00	5.74	6.45	5.85	5.65
Asian Employees (%)	15.53	13.78	15.55	14.45	15.52	13.28
Panel D: Investor Directors						
	Full Sample		2013–2019		2020–2022	
	N = 160,318		N = 102,966		N = 57,352	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Board Size	3.24	2.18	3.17	2.10	3.37	2.31
Black Directors (%)	0.97	8.72	0.88	8.29	1.14	9.43
Hispanic Directors (%)	1.22	9.53	1.18	9.36	1.29	9.86
Asian Directors (%)	11.49	27.84	10.74	26.88	12.84	29.33
Female Directors (%)	7.42	22.62	6.51	21.17	9.05	24.91
Employee Data	2018–2022		2018–2019		2020–2022	
	N = 17,591		N = 7,405		N = 10,186	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Number of Employees	45.52	119.27	41.42	134.45	48.57	106.45
Black Employees (%)	3.67	5.33	3.56	5.63	3.75	5.10
Hispanic Employees (%)	5.92	6.34	5.82	6.85	6.00	5.92
Asian Employees (%)	15.81	13.94	16.07	14.88	15.63	13.19

Table A4: Summary Statistics - Levels of Board Diversity by Year

This table reports summary statistics at a yearly level for our sample of public and private firms. Panel A presents statistics for private firms, while Panel B presents statistics for public firms. We present the statistics as averages at the level of the full board. The variables summarized are *Board Size*, which is the number of directors on the board; *Appointments*, which is the number of newly appointed directors in the year; and *Black Directors*, *Hispanic Directors*, *Asian Directors*, and *Female Directors*, which are the percentage of directors on the board of a given race/gender.

Panel A: Private Firms							
Year	N	Board Size	Appointments	Directors (%)			
				Black	Hispanic	Asian	Female
2013	29,223	2.0	0.4	1.1	1.4	9.3	8.4
2014	32,470	2.1	0.4	1.2	1.5	9.7	8.7
2015	35,278	2.2	0.4	1.2	1.6	10.2	9.2
2016	37,428	2.2	0.3	1.2	1.6	10.7	9.4
2017	39,854	2.2	0.3	1.3	1.6	11.1	9.9
2018	42,068	2.3	0.3	1.3	1.6	11.4	10.3
2019	43,684	2.4	0.3	1.4	1.6	11.7	10.8
2020	45,178	2.4	0.3	1.5	1.7	11.9	11.2
2021	46,015	2.5	0.3	1.6	1.7	12.1	11.6
2022	44,093	2.4	0.1	1.7	1.8	12.2	11.8
Total	395,291	2.3	0.3	1.4	1.6	11.1	10.3

Panel B: Public Firms							
Year	N	Board Size	Appointments	Directors (%)			
				Black	Hispanic	Asian	Female
2013	2,895	9.1	0.8	4.7	2.0	3.3	12.2
2014	3,219	8.9	0.9	4.6	1.8	3.3	12.5
2015	3,509	8.8	0.8	4.5	1.8	3.5	13.2
2016	3,576	8.6	0.8	4.5	1.9	3.7	14.0
2017	3,557	8.5	0.8	4.6	2.1	3.8	15.0
2018	3,413	8.4	0.8	4.8	2.2	4.1	16.9
2019	3,308	8.4	0.8	5.2	2.2	4.3	19.6
2020	3,112	8.3	0.8	6.1	2.3	4.6	22.2
2021	2,498	8.6	0.8	9.5	2.9	5.3	26.5
Total	29,087	8.6	0.8	5.2	2.1	4.0	16.6

Table A5: Summary Statistics - Diversity in Board Appointments by Year

This table reports summary statistics at a yearly level for our sample of public and private firms. Panel A presents statistics for private firms, while Panel B presents statistics for public firms. We present the statistics as averages at the level of new director appointments. Only firm-years with at least one newly appointed director are included. The variables summarized are *Board Size*, which is the number of directors on the board after the ones appointed in the year; *Appointments*, which is the number of newly appointed directors in the year, with a minimum of 1; and *Black Directors*, *Hispanic Directors*, *Asian Directors*, and *Female Directors*, which are the percentage of newly appointed directors who are of a given race/gender.

Panel A: Private Firms							
Year	N	Board Size	Appointments	Directors (%)			
				Black	Hispanic	Asian	Female
2013	7,159	2.7	1.6	1.3	1.8	10.5	9.0
2014	8,137	2.8	1.7	1.3	1.8	11.4	9.9
2015	8,156	2.9	1.7	1.1	1.7	12.3	11.0
2016	7,679	3.0	1.7	1.3	1.6	12.9	11.0
2017	8,290	3.0	1.7	1.3	1.7	13.3	12.7
2018	8,777	3.2	1.7	1.4	1.7	12.9	13.4
2019	8,663	3.4	1.6	1.6	1.8	13.2	16.0
2020	8,465	3.5	1.7	2.7	1.7	13.2	16.7
2021	8,144	3.8	1.8	3.1	2.5	14.6	20.0
2022	3,481	4.0	1.6	3.1	1.8	15.1	20.0
Total	76,951	3.2	1.7	1.8	1.8	12.9	13.7

Panel B: Public Firms							
Year	N	Board Size	Appointments	Directors (%)			
				Black	Hispanic	Asian	Female
2013	1,044	10.0	1.7	4.5	2.0	3.7	19.9
2014	1,247	9.9	1.8	4.6	2.8	3.3	22.1
2015	1,359	9.8	1.8	4.5	2.6	3.9	22.6
2016	1,390	9.6	1.7	5.6	2.2	3.9	24.5
2017	1,373	9.6	1.7	5.9	2.7	5.2	29.3
2018	1,448	9.5	1.7	6.9	2.9	4.9	35.4
2019	1,441	9.4	1.7	7.1	2.5	6.6	44.4
2020	1,366	9.4	1.7	12.8	3.0	6.7	43.7
2021	1,074	9.6	1.6	28.7	5.6	9.7	47.0
Total	11,742	9.6	1.7	8.6	2.9	5.3	32.3

Table A6: Summary Statistics - Diversity in Board Appointments by Board Size

This table reports summary statistics of board diversity in appointments by board size for our sample of public and private firms. Panel A presents data for private firms in the pre-GF period, while Panel B presents data for private firms in the post-GF period. Panels C and D present data for the pre- and post-GF periods for public firms. We present the statistics as averages at the level of new director appointments. Only firm-years with at least one newly appointed director are included. The variables we summarize are: *Black Directors*, *Hispanic Directors*, *Asian Directors*, and *Female Directors*, which represent the percentage of newly appointed directors of a given race/gender. We present the statistics by *Board Size*, which is the number of directors on the board after the newly appointed director(s). The final row in Panels A and B includes boards with more than eight directors.

Panel A: Private Firms (2013-2019)					
Board Size	N	Directors (%)			
		Black	Hispanic	Asian	Female
1	16,937	1.8	2.1	13.3	11.1
2	13,384	1.2	1.7	12.6	11.3
3	9,106	0.9	1.7	12.2	10.8
4	6,021	0.9	1.5	11.9	11.7
5	4,160	1.0	1.5	11.3	14.0
6	2,721	1.6	1.2	11.2	14.8
7	1,745	1.5	1.1	11.8	15.8
≥ 8	2,787	1.8	1.5	11.3	17.7
Total	56,861	1.4	1.7	12.4	12.0

Panel B: Private Firms (2020-2022)					
Board Size	N	Directors (%)			
		Black	Hispanic	Asian	Female
1	4,321	1.8	2.2	14.9	13.0
2	3,809	2.6	2.1	14.5	15.0
3	3,264	2.8	1.7	13.7	16.5
4	2,520	2.4	2.5	13.6	19.3
5	1,885	2.9	1.6	13.8	21.3
6	1,383	3.1	1.5	13.9	22.6
7	1,023	4.8	2.6	12.6	27.4
≥ 8	1,885	6.0	2.0	14.2	31.0
Total	20,090	2.9	2.0	14.1	18.6

Table A6: Continued

This table reports summary statistics of board diversity in appointments by board size for our sample of public and private firms. Panel C presents data for public firms in the pre-GF period, while Panel D presents data for public firms in the post-GF period. We present the statistics as averages at the level of new director appointments. Only firm-years with at least one newly appointed director are included. The variables we summarize are *Black Directors*, *Hispanic Directors*, *Asian Directors*, and *Female Directors*, which represent the percentage of newly appointed directors of a given race/gender. We present the statistics by *Board Size*, which is the number of directors on the board after the newly appointed director(s). The first row in Panels C and D includes boards with five or fewer directors, while the last row includes boards with twelve or more directors.

Panel C: Public Firms (2013-2019)					
Board Size	N	Directors (%)			
		Black	Hispanic	Asian	Female
≤ 5	415	2.0	1.3	4.8	19.7
6	620	2.7	1.2	5.5	25.6
7	1,021	3.0	1.4	5.4	27.5
8	1,317	3.0	2.3	4.6	29.2
9	1,388	3.9	2.1	3.8	29.1
10	1,301	6.2	2.7	4.6	30.6
11	1,041	7.4	3.0	4.7	31.9
≥ 12	2,199	9.9	3.8	4.3	29.4
Total	9,302	5.7	2.5	4.6	28.9

Panel D: Public Firms (2020-2021)					
Board Size	N	Directors (%)			
		Black	Hispanic	Asian	Female
≤ 5	154	6.2	3.1	9.7	45.7
6	186	8.4	1.6	9.4	51.3
7	275	13.8	3.6	11.6	52.3
8	353	18.5	3.6	7.0	46.8
9	349	24.0	3.4	8.9	46.4
10	301	27.5	5.0	6.8	42.9
11	253	22.3	5.2	8.5	43.8
≥ 12	569	23.2	5.5	5.8	39.7
Total	2,440	19.8	4.2	8.0	45.2

Table A7: Board Diversity in Private Firms (Appointments)

This table presents coefficients from OLS regressions of board diversity at private firms, with standard errors reported in parentheses. The unit of observation is a firm-year in the period 2013 to 2022. A firm-year is included only if at least one new board member is appointed. The dependent variable is the fraction of newly appointed board members who are either Black, Hispanic, Asian, or Female. The key independent variable is *Post-GF*, an indicator that equals one for 2020 and later years, following the George Floyd social movement. As controls, we include $\ln(\text{Board Size})$, which is the log of number of directors on the board, as well as *State FE* in Panel A, which is the state the firm is headquartered in, and *Firm FE* in Panel B. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors by the firm.

Panel A	Black	Hispanic	Asian	Female
Post-GF	1.535*** (0.116)	0.317*** (0.105)	1.936*** (0.262)	6.018*** (0.270)
Observations	77,101	77,101	77,101	76,899
Adjusted R^2	0.007	0.003	0.026	0.017
State FE?	✓	✓	✓	✓
Panel B	Black	Hispanic	Asian	Female
Post-GF	2.266*** (0.219)	0.257 (0.183)	0.360 (0.445)	5.653*** (0.496)
Observations	50,778	50,778	50,778	50,587
Adjusted R^2	0.049	0.034	0.155	0.088
Firm FE?	✓	✓	✓	✓

Table A8: Board Diversity in Private Firms by Director Type (Appointments)

This table presents coefficients from OLS regressions run at the firm-year level, with standard errors reported in parentheses. The unit of observation is a startup-year between 2013 and 2022. The dependent variable is the fraction of newly appointed board members of a given type who are either Hispanic, Black, Asian, or Female. A startup-year is included if at least one director of a given type is appointed in that year. Panel A focuses on Insider Directors, defined as a director who works for the startup. Panel B focuses on Outsider Directors. An outside director is neither affiliated with the startup nor its investors. Panel C focuses on Investor Directors, defined as an appointed director who works for an investor in the firm. The key independent variable is *Post-GF*, which is an indicator that equals one for directors appointed in 2020 or later. All models include firm fixed effects. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Insider Directors	Black	Hispanic	Asian	Female
Post-GF	2.687*** (0.959)	1.145 (0.834)	-0.339 (1.675)	8.246*** (2.361)
Observations	3,501	3,501	3,501	3,501
Adjusted R^2	0.027	-0.015	0.110	0.066
Firm FE?	✓	✓	✓	✓
Panel B: Outsider Directors	Black	Hispanic	Asian	Female
Post-GF	3.490*** (0.622)	0.785 (0.509)	1.863* (1.109)	4.554*** (1.498)
Observations	8,957	8,957	8,957	8,957
Adjusted R^2	-0.017	0.003	0.055	0.051
Firm FE?	✓	✓	✓	✓
Panel C: Investor Directors	Black	Hispanic	Asian	Female
Post-GF	0.568* (0.340)	-0.905** (0.383)	1.395 (1.157)	4.965*** (1.131)
Observations	11,943	11,943	11,943	11,943
Adjusted R^2	0.036	0.010	0.128	0.056
Firm FE?	✓	✓	✓	✓

Table A9: How is Employee Diversity Related to Board Diversity?

This table presents coefficients from OLS regressions run at the firm-year level, with standard errors reported in parentheses. The unit of observation is a startup-year between 2013 and 2022, for startups that have received VC investment and where we observe at least 10 employees in 2019. The dependent variable is the fraction of employees who are either Black, Hispanic, or Black & Hispanic. We relate the fraction of the workforce that is of a given race in year $t + 1$ to the fraction of diverse directors in year t . $B\&H$ is the fraction of employees or directors who are either Black or Hispanic. All models include year and state fixed effects, indicating the state the firm is headquartered in. We also include controls for the log of VC funding raised and the log of board size as of t . *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: Insider Directors	Employees ($t + 1$)			
	Black	Hispanic	B&H	B&H
Black Directors	0.060*** (0.020)			
Hispanic Directors		0.022* (0.013)		
B&H Directors			0.047*** (0.015)	
Female Directors				0.017*** (0.006)
Observations	18,426	18,426	18,426	18,426
Adjusted R^2	0.088	0.061	0.086	0.083
Year & State FE?	✓	✓	✓	✓

Panel B: Outsider Directors	Employees ($t + 1$)			
	Black	Hispanic	B&H	B&H
Black Directors	0.032*** (0.010)			
Hispanic Directors		0.025* (0.014)		
B&H Directors			0.031*** (0.011)	
Female Directors				0.015*** (0.004)
Observations	15,154	15,154	15,154	15,154
Adjusted R^2	0.088	0.062	0.086	0.087
Year & State FE?	✓	✓	✓	✓

Panel C: Investor Directors	Employees ($t + 1$)			
	Black	Hispanic	B&H	B&H
Black Directors	0.018** (0.009)			
Hispanic Directors		0.015 (0.012)		
B&H Directors			0.012 (0.009)	
Female Directors				0.002 (0.005)
Observations	20,501	20,501	20,501	20,501
Adjusted R^2	0.080	0.059	0.072	0.072
Year & State FE?	✓	✓	✓	✓

Table A10: Board Diversity in Private Firms - Impact of Racially Diverse Investors

This table presents coefficients from OLS regressions run at the firm-year level, with standard errors reported in parentheses. The unit of observation is a startup-year between 2013 and 2022. The dependent variable is the fraction of board members who are either Black, Hispanic, Asian, or Female. Panel A presents results for the full sample of all directors. Panel B focuses on Insider Directors. Panel C focuses on Outsider Directors. Panel D focuses on Investor Directors. For Panels B through D, a firm-year is included if we observe at least one insider director (Panel B), one outsider director (Panel C), and one investor director (Panel D). The key independent variable is $F(\text{Minority VCs})$, which measures the fraction of VCs invested in the company that are minority-owned (have a Black or Hispanic Founder or Senior Partner), following the classification in [Cassel et al. \(2022\)](#). All models include year and state fixed effects. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Panel A: All Directors	Black	Hispanic	Asian	Female
F(Minority VCs)	16.555*** (2.063)	4.702*** (1.288)	-1.372 (2.120)	12.418*** (2.328)
Observations	163,108	163,108	163,108	163,108
Adjusted R^2	0.027	0.010	0.044	0.018
Year FE?	✓	✓	✓	✓
State FE?	✓	✓	✓	✓
Panel B: Insider Directors	Black	Hispanic	Asian	Female
F(Minority VCs)	14.472*** (2.816)	0.715 (1.194)	-0.958 (3.143)	17.568*** (3.667)
Observations	95,058	95,058	95,058	95,058
Adjusted R^2	0.018	0.010	0.043	0.019
Year FE?	✓	✓	✓	✓
State FE?	✓	✓	✓	✓
Panel C: Outsider Directors	Black	Hispanic	Asian	Female
F(Minority VCs)	6.590*** (2.455)	0.740 (1.125)	-5.214* (3.006)	9.569** (3.751)
Observations	73,768	73,768	73,768	73,768
Adjusted R^2	0.007	0.007	0.019	0.017
Year FE?	✓	✓	✓	✓
State FE?	✓	✓	✓	✓
Panel D: Investor Directors	Black	Hispanic	Asian	Female
F(Minority VCs)	20.652*** (3.408)	10.254*** (2.430)	-1.947 (3.100)	4.150* (2.476)
Observations	109,153	109,153	109,153	109,153
Adjusted R^2	0.033	0.009	0.037	0.010
Year FE?	✓	✓	✓	✓
State FE?	✓	✓	✓	✓

Table A11: Board Diversity post George Floyd – Impact of Racially Diverse Investors

This table presents coefficients from OLS regressions of board diversity at startups, with standard errors reported in parentheses. The unit of observation is a startup-year between 2018 and 2022 for startups that have received VC investment. The dependent variable is the fraction of board members of a given type who are Black, Hispanic, Asian, or Female. Panel A focuses on insider directors, Panel B on outsider directors, and Panel C on investor directors. A firm-year is included if we observe at least one director of that type on the board. The key independent variable is $F(B\&H\ VCs) (2019)$, which measures the fraction of VCs invested in the company as of 2019 that are classified as a Black and Hispanic VC ($B\&H\ VCs$) following the classification in [Cassel et al. \(2022\)](#) (i.e., at least 50% of the founders or senior partners of the VC are Black or Hispanic). All models include year and firm fixed effects, as well as controls for the log of VC funding raised up until that year and the log of board size. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors by the firm.

Panel A: Insider Directors	Black	Hispanic	Asian	Female
F(B&H VCs) (2019) $\times$ Post-GF	-0.163 (0.233)	-0.013 (0.241)	0.081 (0.355)	-0.332 (0.624)
Observations	54,614	54,614	54,614	54,614
Adjusted R^2	0.974	0.977	0.984	0.973
Year FE?	✓	✓	✓	✓
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	1.25%	2.04%	14.71%	11.91%

Panel B: Outsider Directors	Black	Hispanic	Asian	Female
F(B&H VCs) (2019) $\times$ Post-GF	0.229 (0.906)	-0.490 (0.423)	-1.606 (2.537)	2.809 (2.681)
Observations	38,986	38,986	38,986	38,986
Adjusted R^2	0.933	0.936	0.946	0.923
Year FE?	✓	✓	✓	✓
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	0.94%	1.42%	10.75%	11.86%

Panel C: Investor Directors	Black	Hispanic	Asian	Female
F(B&H VCs) (2019) $\times$ Post-GF	-0.589 (0.891)	-0.264 (0.529)	2.001 (1.443)	0.631 (0.758)
Observations	56,794	56,794	56,794	56,794
Adjusted R^2	0.962	0.947	0.960	0.940
Year FE?	✓	✓	✓	✓
Firm FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	0.76%	1.26%	13.87%	8.40%

Table A12: Predicting Capital Market Exposure

This table reports estimates from OLS regressions predicting capital market outcomes for startups in the period post George Floyd (PGF). The unit of observation is a startup. In Columns (1) through (3), the dependent variable is $I(\text{Raised Funding PGF})$, an indicator for whether the startup raised funding between June 2020 and December 2021. In Columns (4) through (6), the dependent variable is $I(\text{IPO PGF})$, an indicator for whether the startup went public between June 2020 and December 2021. The key independent variables are *Predicted Fundraising* and *Raised a Lot*. *Predicted Fundraising* is an indicator for whether the startup is predicted to raise a follow-on round Post-GF, based on the timing of its latest pre-GF funding round and the average time between funding rounds for other startups in the same industry and deal stage over the previous five years (see Figure A5 for details). *Raised a Lot* is an indicator for whether the startup is in the 90th percentile of cumulative funding raised within its industry in the pre-GF period. For each startup, we consider the most recent deal closed prior to (but not including) May 2020. The models include a combination of fixed effects for the year of the deal, the industry of the startup, and the deal type. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors at the startup level.

Dependent Variable:	I(Raised Funding PGF)			I(IPO PGF)		
Predicted Fundraising	0.040*** (0.004)	0.044*** (0.004)	0.044*** (0.004)			
Raised a Lot				0.031*** (0.002)	0.031*** (0.002)	0.034*** (0.002)
Observations	87,328	87,328	87,328	87,328	87,328	87,328
Adjusted R^2	0.074	0.094	0.130	0.016	0.019	0.027
Year FE?	✓	✓	✓	✓	✓	✓
Industry FE?		✓	✓		✓	✓
Deal Type FE?			✓			✓
Y Mean		21.6%			0.6%	

Table A13: Covariate Balance Table

This table reports the differences in covariates for our matched sample of firms without pre-GF black directors (“treated”) relative to firms that did have black directors pre-GF (“control”). We report the mean, median, and standard deviation for both samples, and the t-stat testing for differences in the mean in the final column. A firm with black directors pre-GF is matched to at most three firms without black directors. We require potential matches to operate in the same industry and state, have the same founding year, and enter the sample at the same point in time. Among these potential matches, we then select the three best matches by the absolute difference in capital raised between the two. We make this comparison of funding raised as of the last year pre-GF for each firm. The reported covariates are as of the time of the matching. The variables we summarize are: *Funding Raised to Date*, which is the cumulative amount of funding the startup has raised to date; *Firm Age*, which is the number of years since founding; *Board Size*, which is the number of directors on the board; *Nr VCs*, which is the number of VCs that have invested in the startup; *Black Directors*, *Hispanic Directors*, *Asian Directors*, and *Female Directors*, which are the percentage of directors on the board of a given race/gender. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level.

	Treated (No pre-GF Black Directors)			Control (Pre-GF Black Directors)			T-stat
	N = 1,179			N = 499			
	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	
Funding Raised to Date	33.0	93.5	6.0	44.3	239.5	4.4	0.94
Firm Age	6.1	3.2	6.0	6.2	3.3	6.0	0.58
Board Size	3.0	2.1	2.0	3.2	2.4	2.0	1.64
Nr VCs	4.6	5.6	3.0	4.6	6.9	3.0	−0.17
Black Directors (%)	0.0	0.0	0.0	48.9	34.4	33.3	29.32***
Hispanic Directors (%)	1.6	9.6	0.0	1.0	7.1	0.0	−1.27
Asian Directors (%)	14.6	28.3	0.0	7.4	16.7	0.0	−5.98***
Female Directors (%)	12.3	25.6	0.0	14.2	27.8	0.0	1.23

Table A14: Do Newly Appointed Directors Depart from Other Boards?

This table presents the average number of other boards that newly appointed directors depart around the time of their appointment. The unit of observation is a director appointment, and the table summarizes the average number of departures from other boards. We separately report this for director appointments to public and startup boards. Panel A presents data for appointments in 2020 and 2021, while Panel B focuses on appointments in 2018 and 2019. For each newly appointed director, we look at whether there are departures from preexisting board positions around the time of the new appointment. In Panel A, we consider all board positions held as of 2019. In Panel B, we consider all board positions held as of 2017. We count the number of such board seats vacated in either 2020 or 2021 in Panel A, and in either 2018 or 2019 in Panel B. We measure the average number of departures from prior public and startup board positions. We present these statistics for all director appointments, and separately for Black, Hispanic, Asian, and Female director appointments.

Panel A: Post-GF (2020 and 2021)				
Director joins:	Public Board		Startup Board	
Director leaves:	Public Board	Startup Board	Public Board	Startup Board
All Directors	0.142	0.010	0.006	0.033
Black	0.035	0.005	0.004	0.016
Hispanic	0.054	0.000	0.006	0.015
Asian	0.128	0.010	0.003	0.037
Female	0.112	0.013	0.009	0.026

Panel B: Pre-GF (2018 and 2019)				
Director joins:	Public Board		Startup Board	
Director leaves:	Public Board	Startup Board	Public Board	Startup Board
All Directors	0.045	0.002	0.001	0.018
Black	0.008	0.000	0.002	0.003
Hispanic	0.000	0.000	0.000	0.029
Asian	0.025	0.004	0.001	0.014
Female	0.020	0.003	0.002	0.013

Table A15: Board Diversity – Influence of VC-Backed Public Firms

This table presents coefficients from OLS regressions of board diversity at publicly traded firms, with standard errors reported in parentheses. The unit of observation is a firm-year between 2013 and 2021. The dependent variable is the fraction of board members who are Black, Hispanic, Asian, or Female. The key independent variable is *VC Backed*, an indicator that equals one if the company received VC financing prior to its IPO, using the classification compiled by [Gornall and Strebulaev \(2021\)](#). All models include controls for the log of board size, as well as year and state fixed effects, with *State FE* indicating the state where the firm is headquartered. *** $p < 0.01$ denotes significance at the 1% level, ** $p < 0.05$ denotes significance at the 5% level, and * $p < 0.10$ denotes significance at the 10% level. We cluster standard errors by the firm.

Panel A	Black	Hispanic	Asian	Female
VC Backed	-1.424*** (0.480)	0.082 (0.375)	1.770*** (0.559)	0.389 (0.428)
Observations	29,087	29,087	29,087	29,087
Adjusted R^2	0.062	0.015	0.028	0.205
Year FE?	✓	✓	✓	✓
State FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Panel B	Black	Hispanic	Asian	Female
VC × Post-GF	0.031 (0.473)	-0.480 (0.351)	0.562 (0.542)	3.127*** (0.468)
VC Backed	-1.429*** (0.496)	0.167 (0.401)	1.670*** (0.575)	-0.166 (0.435)
Observations	29,087	29,087	29,087	29,087
Adjusted R^2	0.062	0.015	0.028	0.206
Year FE?	✓	✓	✓	✓
State FE?	✓	✓	✓	✓
Controls?	✓	✓	✓	✓
Y Mean	5.25%	2.11%	3.96%	16.60%

Table A16: Where do Directors Come From?

This table presents the number of newly appointed directors who held a director role prior to the period of their appointment. We split directors into four categories: those who had no director role prior to the period of their appointment; those who held a seat on a startup board; those who held a seat on a public board; and those who held both public and startup board seats. Panel A presents counts for directors appointed to public boards in 2020 and 2021. We classify directors by their prior board positions as of 2019. Panel B presents counts for directors appointed to public boards in 2018 and 2019. We classify directors by their prior board positions as of 2017. Panel C presents counts for directors appointed to startups boards in 2020 and 2021, while Panel D focuses on startup appointments in 2018 and 2019. We present these counts for all director appointments, as well as separately for Black, Hispanic, Asian, and Female director appointments.

Panel A: Public Appointments Post-GF (2020 and 2021)

Director Role in 2019:	No Director Role	Startup Only	Public Only	Both	Total
All Directors	2,531	518	495	709	4,253
Black	351	21	46	83	501
Hispanic	66	6	14	29	115
Asian	184	41	26	36	287
Female	1,023	161	211	263	1,658

Panel B: Public Appointments Pre-GF (2018 and 2019)

Director Role in 2017:	No Director Role	Startup Only	Public Only	Both	Total
All Directors	3,106	678	705	728	5,217
Black	120	18	33	41	212
Hispanic	42	13	12	19	86
Asian	164	43	29	30	266
Female	1,106	159	244	249	1,758

Panel C: Startup Appointments Post-GF (2020 and 2021)

Director Role in 2019:	No Director Role	Startup Only	Public Only	Both	Total
All Directors	19,313	6,247	569	1,092	27,221
Black	416	58	31	55	560
Hispanic	291	66	6	23	386
Asian	1,893	763	32	57	2,745
Female	3,491	793	220	356	4,860

Panel D: Startup Appointments Pre-GF (2018 and 2019)

Director Role in 2017:	No Director Role	Startup Only	Public Only	Both	Total
All Directors	19,909	5,849	550	890	27,198
Black	259	45	8	27	339
Hispanic	269	63	9	13	354
Asian	1,964	670	28	43	2,705
Female	3,043	567	161	235	4,006

Table A17: Validation of Director Race Classification - Our Classification vs. ISS

This table shows a two-way contingency table of the count of directors classified as “White,” “Black,” “Hispanic,” and “Asian,” according to ISS (“ISS Directors”) and PitchBook (“PitchBook Directors”). A unit of observation is a director in the ISS and PitchBook sample. Panel A presents the total count of directors in each cell. Panel B calculates the proportion of the ISS director classifications that match our classification using PitchBook. For example, of the 361 directors we identify as Black, ISS agrees with our classification 97.5% of the time. We classify directors by race following the process outlined in Section II.A.1 and Appendix A.A.1. To match directors in PitchBook to our BoardEx/ISS sample, we first match companies by CIK. Within each CIK, we then conduct a fuzzy matching on names. We follow the name-matching procedure outlined in Appendix C to determine the best match for each director. Finally, to create this table, we use the intersection of matched directors with race in both PitchBook and ISS. In total, we match 7,890 unique directors. As ISS race classifications have more categories than our PitchBook classification of directors, we map ISS classifications into our four categories as follows: We map “Black/African American” to “Black”; “Hispanic/Latin American” to “Hispanic”; “Indian/South Asian” to “Asian (excluding Indian/South Asian)”, and “Native Hawaiian/Other Pacific Islander” to “Asian”; We map all other categories to “White.” Although we do not report statistics on gender, the overlap between gender classifications in BoardEx and PitchBook is 99.8%.

Panel A: Counts

ISS Directors	PitchBook Directors				Total ISS
	White	Black	Hispanic	Asian	
White	6,435	6	44	147	6,650
Black	188	352	0	22	562
Hispanic	85	0	79	8	172
Asian	83	3	3	416	506
Total PitchBook	6,810	361	126	593	7,890

Panel B: Proportion Correctly Classified

PitchBook Directors	F(ISS Directors’ Race)				F(PitchBook)
	White	Black	Hispanic	Asian	
White	94.8%	2.8%	1.3%	1.2%	86.3%
Black	1.7%	97.5%	0.0%	0.8%	4.6%
Hispanic	34.9%	0.0%	62.7%	2.4%	1.6%
Asian	24.8%	3.7%	1.3%	70.2%	7.5%